

THE ROLE OF THE **IAEA** today

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Editorial

Ladies and gentlemen,
friends and colleagues,

the dramatic events of Fukushima in March 2011 changed the perception of “nuclear”. The nuclear failure of Japan with its terrible consequences for its people and the environment showed the dangers of the civil use of nuclear technology to the world. As a consequence to the nuclear failure in a country with leading technology the German government decided to phase-out atomic power. Because of the horrible damages experienced in Japan a long-existing insight resurfaced: civil and military applications of nuclear energy are two sides of the same medal.

In May 2011, several international organisations conducted a symposium and public event on “The role of the IAEA - Nuclear power after Fukushima”. This included: the International Association of Lawyers Against Nuclear Arms (IALANA), International Network of Engineers and Scientists for Global Responsibility (INES), International Network of Engineers and Scientists Against Proliferation (INESAP), International Peace Bureau (IPB), International Physicians for the Prevention of Nuclear War (IPPNW), the European Nuclear Risk Cluster (ENRIC), and Forum Wissenschaft und Umwelt Österreich (FWU). The Aim was to critically discuss IAEA’s history, double role in promoting the civil use of nuclear energy while preventing diversion for military uses, disinformation on i.e. health issues, and it’s role in the Iran-conflict, and proposals of reform for IAEA.

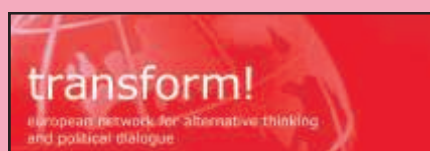
The following are **Reform Proposals to the IAEA** from the above organisations and some of the speeches and presentations of the above mentioned conference.

IALANA

International Association of Lawyers Against Nuclear Arms

Acknowledgement

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Reform Proposal to the IAEA

The IAEA and its Need for Transformation after Fukushima

June 19. 2012

The Atomic Age

Shortly after the discovery of nuclear fission, the so-called Manhattan Project was initiated in the USA in 1942 with the goal of developing nuclear bombs before Germany was able to do so. Both possible paths to the atom bomb were started simultaneously:

In Oak Ridge, Tennessee, a huge plant for uranium enrichment was constructed to produce material for uranium bombs and in Hanford, Washington, reactors for plutonium production were put into operation.

The first bomb test took place on July 16, 1945.

On August 6th 1945, a uranium bomb was dropped over Hiroshima and 3 days later a plutonium bomb over Nagasaki. The terrible consequences of these weapons of mass destruction horrified the world and initiated a nuclear arms race.

Atoms for Peace

In 1953, US President Eisenhower delivered a speech before the UN General Assembly in which he announced the so-called “peaceful use” of atomic energy: “...*this greatest of destructive forces can be developed into a great boon for the benefit of all mankind.*”

There were several reasons behind the “Atoms for Peace” program. After the traumatic experience of the disastrous consequences of the atomic bombs the USA was interested to show the world that atomic energy could also be good for something. On the other hand there was substantial interest to use the immense investment in the military nuclear industry for commercial purposes and create jobs for the thousands of nuclear specialists. The motivation of nuclear scientists and engineers to get involved in civil nuclear programs was phrased to the point: “If researchers who reject any kind of atomic armament nevertheless welcome the introduction and proliferation of the peaceful exploitation of nuclear power, then they are not only driven by the professional concern of threatening their research by abdicating this development, but also by the illusion of being able to ban the ‘curse’ of nuclear weapons through the ‘blessing’ of nuclear industry. Zeal for research, belief in progress and need for self-justification are united here in the urge to legitimize the unleashing of atomic energy through its civilian use, after its military use – nuclear armament – gets more and more visibly out of control.” (Friedrich Wagner “Die Wissenschaft und die gefährdete Welt – Eine Wissenschaftssoziologie der Atomphysik“ Beck, München 1964, p.283)

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The “Atoms for Peace” Conference

The UN “Atoms for Peace” conference, which took place in Geneva 1955, was a one-sided propaganda event for the civil exploitation of atomic energy. To avoid any resistance from the very beginning, Nobel Laureate H. J. Muller was not allowed to deliver his speech on “How radiation changes the genetic constitution”. On the contrary, pro-nuclear euphoria was created. “Experts” slobbered over cars powered by uranium pills, electricity would become “too cheap to meter”, Walt Disney’s film: “Our Friend the Atom”, which one-sidedly praised the benefits of atomic energy, was shown at schools for many years to come.

The wishful expectation that in the near future the last A-bomb would be “burned” in a peaceful nuclear power plant soon turned out to be an illusion. One reason that it went contrariwise was the “Ploughshare” program which planned to use A-bombs for “peaceful” purposes. Under this smokescreen military programs were started (e.g. by India).

Foundation of the IAEA

In December 1954, the UN General Assembly voted for the “Atoms for Peace” resolution and in 1957 the IAEA was established. According to its statute, the task of the IAEA is: “...to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it ... is not used in such a way as to further any military purpose.”

But already at that time it was clear that the civil and the military nuclear industries are connected inseparably: The Acheson-Lilienthal Report (1946) stated clearly that a separation is impossible. Civil nuclear programs easily could be transformed to produce nuclear weapons.

Prominent experts, e.g., the scientific director of the Manhattan Project, Robert Oppenheimer, clearly took the same position. Promotion of nuclear power programs therefore is in contradiction to reliable control of fissile material in order to prohibit proliferation of nuclear weapons.

As mentioned above, the task of the IAEA is the promotion of the so-called peaceful uses of nuclear energy on the one hand, and the safeguarding of fissile material in order to prevent the proliferation of nuclear weapons on the other. In 1957, when the IAEA was established, most of its member states envisaged getting benefits from the “peaceful use of nuclear power”. Since then the prospects of the so-called “peaceful atom” have changed fundamentally.

The IAEA has failed to fulfil its main purpose of consistent control. The civil application of nuclear power has never kept the original promises of a clean, safe and cheap energy source: “too cheap to meter”.

Contrary to the promotional assertions, nuclear power can be no realistic means to reduce carbon dioxide emissions. Also, the nuclear industry continuously aggravates the problems connected with nuclear waste, although no satisfactory solutions are in sight. Despite the fact that the possibility of accidents of potentially catastrophic dimensions has turned out to be real, there is no adequate liability regime.

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The performance of the IAEA after Chernobyl and Fukushima has to be criticised in several respects.

Therefore it is essential to review the outmoded statutes and performance of the IAEA and to begin a reform process with the aim of adapting this important international organisation to the current situation.

The double role of the IAEA – promotion of nuclear power and prevention of the proliferation of nuclear weapons – is a contradiction in itself. As Hannes Alfvén put it concisely as early as 1974: “The civil and the military nuclear industries are Siamese twins!” Promotion of mass production of plutonium impedes reliable control of this fissile material.

IAEA members are not only states, but also NGOs with consultative status and others which are observers. These NGOs consist of nuclear advocacy groups from industrialized countries and from the atomic industry. Because of this the IAEA is a powerful but one-sided organization promoting nuclear industry at top international level.

The World Health Organisation (WHO) and the IAEA on 28th May 1959 signed an agreement (WHA 12-40) to consult each other on subjects relevant for both parties to achieve mutual agreement. This agreement in practice has prohibited a comprehensive study by the WHO on the health impacts of nuclear power in general and the consequences of Chernobyl in particular. The resulting denial of radiation-induced health effects by the IAEA disregards the right of millions of radiation victims to receive acknowledgment of their health damage as radiation-induced and getting compensation.

After the catastrophe of Chernobyl proposals have been offered to the IAEA to establish an emergency force which uses the experiences, the technical equipment and the expertise which resulted from the recovery work at Chernobyl. This proposal fell on deaf ears on the part of the IAEA. The Fukushima accident demonstrated clearly that this neglect had been a grave mistake.

The majority of the IAEA member states nowadays no longer intend to construct nuclear power stations, quite on the contrary: Several states have decided to phase out their nuclear power plants.

Therefore it seems to be high time to review the anachronistic statutes of the IAEA and start a process of reform.

The Main Goal from the Perspective of Sustainable Development

Instead of the present IAEA, which promotes nuclear power and plays down or neglects its health effects and consequently fails to fulfill its role in safeguarding, we need an organisation for promoting and supporting the phase-out of the military as well as the civil nuclear industries. Furthermore it must take responsibility for all measures relevant to the mitigation of the legacy of nuclear pollution created so far.

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Proposals for a Reform

- The treaty between IAEA and WHO which has blocked comprehensive investigations of the health effects of atomic radiation has to be annuled.
- The assertion that every State has the right to build nuclear power plants (thereby putting neighbouring countries at risk) must be eliminated from the statutes of the IAEA.
- The promotion of nuclear power has to be eliminated from the statutes, and on the other hand the IAEA's supervising, checking, and controlling powers should be improved substantially.
- In order to make this possible, the composition of the members has to be changed. Organisations representing the victims of radiation and others, independent from nuclear industry, should get influence within the IAEA.
- Following the example of the USAEC which could not fulfil its double role of promotion and control of the nuclear industry and therefore had to be transformed into the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC), the possible short-term step of a separation of the IAEA's control function from its promotion function could be taken into consideration.
- The danger of large-scale nuclear accidents will continue to exist during phase-out and decommissioning of existing nuclear power plants. The accidents at Three Mile Island, Chernobyl and Fukushima have clearly demonstrated the inability of national nuclear emergency services to deal with such accidents. It would be wise to create, within the framework of a future IAEA an International Nuclear Emergency Service (INEmS) to help nations reduce the scale of nuclear accidents and mitigate their consequences.
- A huge population has been exposed to internal and external radiation as a consequence of nuclear bomb explosions, nuclear tests and nuclear accidents around the globe. A comprehensive database on these cases is still non-existent. It would be the task of a future IAEA to create and update such a database and guarantee access to it for interested organizations and individuals.
- A future IAEA also should establish the possibility for nuclear specialists to report anonymously violations of nuclear safety regulations by their employers.

We suggest organizing an international conference with the participation of representatives from like-minded countries to work out a practicable procedure for a reform or a structural transformation of the IAEA.

As representatives of the civil society we announce that from now on we are determined to accompany the yearly assemblies of the IAEA with critical activities in order to raise public awareness for the necessary transformation.

The IAEA and its Need for Transformation after Fukushima

June 19. 2012

First to sign the Proposals for a IAEA-Reform

1. Iouli Andreiev, Russia
2. Reiner Braun, Germany
3. Reinhold Christian, Austria
4. Helga Kromp-Kolb, Austria
5. Wolfgang Kromp, Austria
6. Peter Weish, Austria
7. Wolfgang Liebert, Germany
8. Otto Jäckel, Germany
9. Lucas Wirl, Germany

Iran and the International Atomic Energy Agency (IAEA)

- dubious grounds, taqiyya and double standards

Otto Jäckel (Germany)

Speech of lawyer Otto Jäckel, chairman of IALANA Germany, for the Symposium “The Role of the International Atomic Energy Agency – Nuclear Power after Fukushima” on 3rd March 2012 at the town hall of Vienna.

“The infinite variety of human spirit brings about that one truth does never present itself in the same way to two persons.”

These words from the novel “War and Peace” by Lew Tolstoy came to my mind when I recently read the news from Israel.

Whereas Israel’s Prime Minister Netanyahu said after the 5P+1 talks with Iran mid-April Iran would have been given a freebee to produce enriched uranium, according to a report by the Austrian Newspaper “Der Standard” from 30 April 2012 the former Chief of Israel’s internal security agency “Shin Bet” Juval Diskin accused the Israeli government of misleading the public. “The citizens are being deceived, if they are told a military attack would avert an Iranian nuclear bomb – the result could also be a dramatic acceleration of the Iranian nuclear program,” he said.

On 29 December 2011 Mossad Chief Tamir Pardo had already criticized that the term “existential threat” was used too freely addressing an audience of about 100 Israeli Ambassadors. His predecessor Meir Dagan had also warned Netanyahu and Barak that an assault on Iran would have disastrous consequences.

Even more interesting seems to be what the current chief of staff of the Israeli Army Lt Col Benny Gantz told the Newspaper Haaretz on April 25. 2012:

“Iran”, Gantz says, “is going step by step to the place where it will be able to decide whether to manufacture a nuclear bomb. It hasn’t yet decided whether to go the extra mile.” And speaking of the supreme religious leader Ayatollah Ali Khamenei he continues: “I don’t think he will want to go the extra mile. I think the Iranian leadership is composed of very rational people.”

Iran and the International Atomic Energy Agency (IAEA)

- dubious grounds, taqiyya and double standards

Otto Jäckel (Germany)

This leads us to the following Questions.

1. If the leading personnel of the Israeli military and intelligence community is convinced that Iran does not have a program to manufacture nuclear weapons (yet), on which intelligence are the findings of the IAEA based?
2. Are the reports of the IAEA on Iran in compliance with the statutes?
3. Does the IAEA treat the other parties to the NPT on exactly the same principles?
4. Which consequences should be drawn?

In his book “The Age of Deception” the former director general of the IAEA Mohamed ElBaradei has described in detail the contention between the IAEA and Iran since 2002. But until the end of his tenure in 2009 he declared that there would be no evidence of the existence of an Iranian nuclear weapons program. (Guardian 20.09.2009)

That was in line with a statement of US intelligence service chief Dennis C. Blair from March 2009: According to the estimate of the 16 US-American intelligence services Iran does not possess weapons grade uranium and has not yet decided on its production.

In stark contrast to these statements the new Secretary General of the IAEA Yukia Amano now declares: I quote the report of 24. February 2012 to the Board of Governors Section H “Possible Military Dimensions”:

“40....Since 2002 the Agency has become increasingly concerned about the possible existence in Iran of undisclosed nuclear related activities involving military related organizations, including activities related to the development of a nuclear payload for a missile, about which the Agency has regularly received new information.

41. The Annex to the Director General’s November 2011 report ... provided a detailed analysis of the information available to the Agency indicating that Iran has carried out activities that are relevant to the development of a nuclear explosive device. This information, which comes from a wide variety of independent sources including from a number of Member States, from the Agency’s own efforts and from information provided from Iran itself, is assessed by the Agency to be, overall, credible. The information indicates that: prior to the end of 2003 the activities took place under a structured program; that some continued after 2003; and that some may still be ongoing.”

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Otto Jäckel (Germany)

In the annex the report refers to it says under “B credibility of information” margin number 12:

“...among the information available to the Agency is the alleged studies documentation: a large volume of documentation (including correspondence, reports, view graphs from presentations, videos and engineering drawings) amounting to over a thousand pages...

Obviously the IAEA is talking about the so called laptop documents which are said to have been stolen from an Iranian computer by an unknown person and transferred to a US-American secret service in 2004.

These documents seem to have received an upgrade under Amano from “incorrect” to “credible”.

On 22 February 2007 the Guardian cited an official of the IAEA as follows. “Most of it has turned out to be incorrect. First of all if you have a clandestine program you don’t put it on laptops, which can walk away. The data is all in English, which may be reasonable for some of the technical matters, but at some point you’d have thought there would at least be some words in Farsi. So there is some doubt over the provenance of the computer.” The Article appeared under the headline “US Iran intelligence is incorrect.”

In the reports of the IAEA signed by Amano there is no explanation to be found why the officials of the IAEA now have changed their minds. Did they simply have to because of a political decision? This would mean that the agency is suffering a severe loss of independence.

Now I’d like to mention in brief some legal aspects.

According to Article 2 of the statute the IAEA has two objectives:

1. “to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world”
2. To “ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purpose.

So Iran as a member state to the NPT has on the one hand the inalienable right to Nuclear Technology as Art.IV.1 of the NPT provides:

Nothing in this Treaty shall be interpreted as affecting the inalienable right of all Parties to the Treaty to develop research, production and use of nuclear energy for peaceful purposes without discrimination and in conformity with articles I and II of this Treaty.

Iran and the International Atomic Energy Agency (IAEA)

- dubious grounds, taqiyya and double standards

Otto Jäckel (Germany)

It is crucial to note that this is not a right granted by the NPT, but recognized by the NPT as inherent in state sovereignty.

On the other hand Iran as a non- nuclear- weapon State has the obligation to renounce nuclear weapons as provided in Art. II of the NPT:

Each non-nuclear-weapon State Party to the Treaty declines to receive nuclear weapons or other nuclear explosive devices or of control over such weapons or explosive devices directly, or indirectly; not to manufacture or otherwise acquire nuclear weapons.

The Question is: What is meant by “to manufacture” a nuclear weapon and what are the rights and obligations of the Member States and the IAEA in this context.

To solve the problem one can chose a formal approach and say the rights of the IAEA are limited by the existing safeguard system and the IAEA is not tasked by its statute or by the NPT of verifying the compliance of states with their broader NPT obligations. In the case of Iran this would mean the IAEA could only verify whether Iran is fulfilling its obligations stated in the “Agreement between Iran and the IAEA for the application of safeguards in connection with the NPT” which Iran has signed and ratified and which entered into force on 15 May 1974.

Under this agreement of the model INFCIRC/153 the tools of the IAEA to verify the absence of undeclared nuclear material and activities are very limited. They focus essentially on declared nuclear material and safeguard conclusions drawn at the facility level – not on the entire nuclear fuel cycle of the NNWS. These measures are based on material accountancy, complimented by surveillance techniques such as temper-proof seals, cameras installed by the IAEA and the taking of environmental samples. The inspections have to be preannounced.

The “Additional Protocol” of 1997 which enables the IAEA not only to verify the non-diversion of declared nuclear material but also to provide assurances as to the absence of undeclared nuclear material and activities has been signed by Iran but not yet ratified and thus is not applicable.

On the ground of this interpretation the findings of the Board of Governors are not consistent with the IAEA statute. A finding of non-compliance as the term is used in Art. XII.C, pertains to circumstances when nuclear material has been diverted for military purposes. In fact the Director General reported every time to the Board, that all nuclear activities and declared material had been accounted for and therefore there has been no diversion of material to unknown use or use in weapons. Absent evidence of a nuclear weapons program and absent the diversion of nuclear material it is difficult to argue that Iran has forfeited his rights under Article IV of the treaty and has to stop completely all fuel-cycle activities as it is demanded by the Security Council.

Iran and the International Atomic Energy Agency (IAEA)

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Otto Jäckel (Germany)

But even if one would prefer a broader interpretation of the rights and obligations of the IAEA without limitation on the safeguard agreement it would lead to the same result.

A binding legal interpretation of what is meant by manufacturing a nuclear weapon is still not available.

Some say the interpretation of “to manufacture” is easy. For the plain meaning of the term manufacture one need only consult a dictionary: “the making of goods from raw materials by manual labor or machinery”. Art. II NPT thus would refer to the physical construction of a nuclear explosive device or perhaps at its broadest reading, to the physical construction of the component parts of a nuclear explosive device. In fact the negotiating history of the treaty confirms this interpretation. The soviet draft of September 1965 also envisaged the undertaking by the States “not to prepare for the manufacture of nuclear weapons”. The fact that this term had been considered by the drafters but not been agreed upon confirms the limited meaning of the term.

According to this interpretation the sanctions against Iran are also lacking a legal basis, because there is no evidence for the manufacturing of a nuclear explosive device in Iran.

That is why the IAEA has made use of a reversal of the burden of proof. The focus is now on confidence building measures which Iran has to come up with, which can be changed and amplified from time to time and which are not exactly predictable. As El Baradei put it: “nothing would satisfy, short of Iran coming to the table completely undressed” (P. 313).

Moreover the Policy of sanctions against Iran is based on double standards:

1. The Safeguard system is already based on double standards.

- 1.1. The European Atomic Energy Community EURATOM

On strong requests of Germany and other States of the European Community the NNWS who are Members of the EURATOM have concluded a special safeguards agreement with the IAEA in 1973. INFCIRC/193 of 5 April 1973. Japan negotiated a similar agreement. This was an important precondition for Germany, Italy and Japan to sign the NPT. The European States have their own safeguard system and the role of the IAEA is limited to verify this EURATOM safeguard system. It was an act to protect European nuclear capacities and facilities from industrial espionage by the IAEA and its Member States.

In Germany for example the Dutch-German Company URENCO has a huge uranium enrichment facility in Groningen with cascades of centrifuges and in Garching near Munich Germany has a Research and Development facility which uses weapon-grade Uranium.

Iran and the International Atomic Energy Agency (IAEA)

- dubious grounds, taqiyya and double standards

Otto Jäckel (Germany)

1.2 NWS

The NPT does not require the NWS to accept safeguards provided for in the NPT. Only on a voluntary basis they accept a restricted regimen for their civil nuclear sites, not for the military ones.

1.3. India, Pakistan and Israel

These three states have become nuclear weapon states outside the NPT, which they did not ratify.

They have concluded item-specific safeguard agreements with the IAEA, which cover only the nuclear material and facilities specified in the agreement.

2. Breach of Art. VI of the NPT by the NWS

Art.VI of the NPT states:

"Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to the cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament."

The International Court of Justice has confirmed this obligation in his advisory opinion on the Illegality of Nuclear weapons in 1996. The NWS are not in compliance with this obligation.

3. Nuclear sharing and war clause

The NATO-States make use of the so called war clause, which says that the NPT is no longer applicable as soon as the decision to go to war has been made. Nuclear weapons which are held under US-American custody for example in Büchel in Germany shall then be handed over to the German Air Force. This makes the NPT completely obsolete.

What should be the next steps?

Iran must certainly ratify the above mentioned Additional Protocol. This would be in its own interest as a step to gain back trust and credibility. Iran's nuclear policy has too often been dominated by the concept of taqiyya. According to Shi'ite Theology it is sometimes acceptable to deceive for the right cause.

Iran should stop enriching Uranium up to 20% and accept a limit of 3.5 or 5%. Then Iran could claim that it has preserved its right to enrichment but it's very hard to weaponize from that level.

Iran and the International Atomic Energy Agency (IAEA)

- dubious grounds, taqiyya and double standards

Otto Jäckel (Germany)

An agreement on a fuel swap should be negotiated. In 2010 such an agreement had nearly been reached with Turkey and Brazil. Iran would send 1.200 kilograms of low enriched Uranium to Turkey to be held in escrow while Iran's research fuel was being fabricated. According to ElBaradei Hilary Clinton has called the fuel swap deal with Turkey and Brazil a transparent ploy on Iran's part to avoid new sanctions. ElBaradei's comment: Once again the west has refused to take yes as an answer.

But there is no alternative to negotiate a peaceful solution.

All military options must be off the table!

A so called preemptive strike against Iran would be a clear breach of Art. II UN Charta. The bombardment of the Iraqi reactor in Osirak by Israel in June 1981 has been condemned with good reason unilaterally by the Security Council (Res 487, 19.6.1981).

Finally there is no reason to believe that Persians and Israelis are archenemies. It was the Persian King Kyrosh the Great who lead the Israeli People out of Babylonian Captivity.

Last week I read that young Israelis have started a campaign on Facebook. They send messages to Iranians in which it says: Iranians we love you! We will never bomb your country! The young Iranians send the same message back to Israel.

Let us take this as a hopeful sign!



Otto Jäckel, opening speech of the IAEA-Symposium 2012

The role of the IAEA: Nuclear power after Fukushima

“Mosaic of Fukushima”

Agenda for a society not reliant on nuclear energy: from the Post-Fukushima viewpoint

Toshinori Yamada (Japan)

Good evening, und Guten Abend!

I am Toshinori Yamada from Japan. I teach International Law at Meiji University in Tokyo, and have served as a board member of Japan Association of Lawyers Against Nuclear Arms (JALANA) since 2007.

I would like to express my appreciation for our colleagues to hold this successful event and to give me an opportunity to present my opinion regarding agenda for a society not reliant on nuclear energy.

But let me first introduce the position of the organization I belong to, JALANA, on Fukushima disasters.

On March 17, 2011, immediately after the accident at the Fukushima Daiichi Nuclear Power Plant, JALANA issued an opinion where we pointed the accident created new Hibakusha and also demanded that Japan's nuclear power industry be re-examined. And in the opinion on May 26, JALANA expressed its decision to do its best to realize the following: 1) full recover from financial and non-financial damages for the victims of the Fukushima nuclear Power Plant Accident; 2) Mid- to long term health care for new Hibakusha; 3) decontamination of extended environmental pollution; 4) to oppose the construction of new nuclear power plants; and 5) to demand a plan to phase out nuclear energy starting with those plants which have higher risk. Now JALANA works for creation of a society not reliant on nuclear energy as well as Nuclear Weapons Abolition and Hibakusha Assistance. Our principal members take part in defense teams of lawsuits against nuclear reactors in Japan.

However my presentation here does not necessarily reflect the view of JALANA, but my own one.

Now I will turn to the current situation in Fukushima. In December, 2011, the Japanese Government announced the so called declaration of cold shutdown, “confirm[ing] the judgment that the nuclear reactors had thus reached a state of cold shutdown and that this element of the power station accident had thus been brought to a conclusion.” (Press Conference by Prime Minister Noda, December 16, 2011)

But thereafter radiation is leaking out of the reactors with the cores melted down and there is concern that after quakes continuing since 3/11 damage the plant further.

The role of the IAEA: Nuclear power after Fukushima

“Mosaic of Fukushima”

Agenda for a society not reliant on nuclear energy: from the Post-Fukushima viewpoint

Toshinori Yamada (Japan)

Today there are about 160,000 people evacuated in and out Fukushima Prefecture. In April, 2012, the government redefined the evacuation zones and allowed people to start entering some areas. But in and near Fukushima Prefecture, radiation dose is still higher than that before the accident. A lot of people are contaminated in their living space by invisible radiation, lose the basis of their livelihood, and are forced to live far from their family. It is suggested that conflicting views of experts on the effect of low level radiation have created divisions among population over evacuation necessity, collapsing local communities.

The economic burden for recovery from the nuclear accident bears heavily on the society. The budgets of FY 2011 and 2012, at least a total of 1 trillion yen (nearly over 10 billion Euro) has been appropriated for reconstruction from nuclear accident including decontamination. This is only on the national government. Some people estimate the gross amount of the loss at more than 10 trillion yen (about 120 billion US Dollar).

In response to this situation, the Japanese government has not yet to come up with a clear road map to shift away from nuclear power dependence. Prime Minister Noda just explains the dependence on nuclear power should decrease in the mid- to long-term as much as possible. The Japanese government has not yet announced any concrete plan for it. Although existing 50 nuclear reactors have stopped one after another for periodical inspection (except for the 4 reactors at the Fukushima Daiichi Plant, which are on their way to decommission), the government cannot resist demand of electric power companies for re-starting them and seems to present its favorable posture for them. And still now Japan seeks for Nuclear Energy Co-operation Agreements with other countries: India, South Africa, Brazil, Mexico, Turkey, UAE, Malaysia, Mongol, and Thailand. After Fukushima, 4 agreements have already entered into force with Kazakhstan, South Korea, Viet Nam, and Jordan; one was signed with Russia.

In order to achieve a society not reliant on nuclear energy, we need to look back on how we have pursued nuclear power and to consider how to resolve difficulties on our way.

First of all, nuclear power has been needed for economic and social development. From that view point, probability of nuclear accidents has been supposed to be little and the matter of nuclear safety has not been handled with enough attention. Especially in Japan, there was the myth of safety on nuclear reactors. It is referred to as one of the causes of the Fukushima nuclear accident.

The role of the IAEA: Nuclear power after Fukushima

“Mosaic of Fukushima”

Agenda for a society not reliant on nuclear energy: from the Post-Fukushima viewpoint

Toshinori Yamada (Japan)

In order to ensure the nuclear safety, a balance is needed between nuclear risks and nuclear benefits. We need to consider it seriously. After Fukushima, the probability of accidents and recovery cost for them seem getting very high. Is it possible to identify that kind of balance?

In Japan, the IAEA's safety standards function socially as an international authority with objective and scientific findings. But as the Fundamental Safety Principles of IAEA instruct, decision makers are required to balance the benefits against the risks. There seems to be certain valuation intrinsically in the IAEA's safety standards. It is natural consequence from the fact that one of its objectives is to “seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world” (IAEA Statute, Art. 2).

The 1994 Convention on Nuclear Safety calls on the State Parties to ensure an effective separation between the regulatory body and the promotion body of nuclear energy (Art. 8). I think this separation is needed in the international plan. In other words, there should be an international body or function to check the role of IAEA.

Secondly, the peaceful use of nuclear energy has been supposed to contribute to the non-proliferation of nuclear weapons. That is the so called Grand Bargain. IAEA has played an important role in the non-proliferation area, but not so much in the peaceful use of nuclear energy and nuclear safety. As for nuclear safety, peer review among the state parties is more significant under the Convention, where the IAEA's safety standards are not binding legally, but only referred to in the review.

Non-proliferation or nuclear security has been overriding nuclear safety.

Recently an integrated development of nuclear safety and nuclear security seems to be occurring. Japan and the United States are cooperating with each other in nuclear security through the Working Group established by both governments. We need to re-examine whether or not such strengthening measures of nuclear security improve those of nuclear safety. New nuclear security standards might be established bilaterally outside of IAEA and require third parties to respect. It is concerned that those standards are operated politically. I think it is desirable to establish more robust nuclear safety standards multilaterally.

The role of the IAEA: Nuclear power after Fukushima

“Mosaic of Fukushima”

Agenda for a society not reliant on nuclear energy: from the Post-Fukushima viewpoint

Toshinori Yamada (Japan)

Finally peaceful use of nuclear energy has been considered with implication of military use. That is not only the case of Iran. Some people in Japan, including politicians or the media, argue that “peaceful use” of nuclear energy functions as “a potential nuclear deterrent.” For example, they say “Japan has maintained superb nuclear technologies” and “the nation is permitted to use plutonium that can be used as material for nuclear weapons...In fact, this also functions diplomatically as a potential nuclear deterrent.” Of course the 1955 Atomic Energy Basic Act restricts nuclear activity to peaceful use, and the government of Japan has reiterated to stick to its Three Non-Nuclear Principles (against producing, possessing and allowing the entry of nuclear weapons into Japanese territory) since 1967.

But that argument might and could be shared with other neighboring nations like the US and China. If so, that will undermine the premise of NPT that it is possible to separate between peaceful use and military one of nuclear energy. And if it is impossible to ensure the separability, we have only one measure to resolve this problem. That is elimination of military use of nuclear energy, abolition of nuclear weapons.

The global tendency for society not to rely on nuclear energy seems not so strong. But 70 years have already passed since the first reactor started under the leadership of Enrico Fermi in 1942. The humanity has experienced nuclear disasters frequently and now has a large amount of debt of radioactive waste for future generations. It is time to consider urgently how to step out of nuclear energy.



Discussion about the IAEA after Fukushima; at the IAEA-Symposium 2012

Proposal to reform the IAEA

Peter Weish (Austria)

Forum Wissenschaft & Umwelt

3rd May 2012

Preliminary note:

Scope of the IAEA is the promotion of so called peaceful uses of nuclear energy on the one hand and safeguarding fissile material in order to prevent the proliferation of nuclear weapons on the other hand. In 1957, when the IAEA was established, most of its member states envisaged to get benefits from the „peaceful use of nuclear power“. Since then the prospects of the so called „peaceful atom“ have changed fundamentally.

The IAEA has failed to fulfill its main purpose of consistent control. The civil application of nuclear power by far did not meet the early promises of a clean, safe and cheap energy source: „Too cheap to meter“.

In contrary to the promotional assertions nuclear power can be no realistic means to reduce carbon dioxide emissions. In fact the nuclear industry continuously aggravates the problems connected with nuclear waste, although no satisfactory solutions are in sight. Despite the fact, that the possibility of accidents with potentially catastrophic dimension has been demonstrated to be real, there is no adequate liability regime.

The performance of the IAEA after Chernobyl and Fukushima has to be criticized in several aspects. Therefore it is mandatory to review the outmoded statutes and performance of the IAEA and to begin a reform process with the aim to adapt this important international organisation to the current situation.

The double role of the IAEA – promotion of nuclear power and foreclose proliferation of nuclear weapons – is a contradiction in itself. As Hannes Alfvén has put it concisely already 1974:

„The civil and the military nuclear industry are Siamese twins!“

Promotion of mass production of plutonium impedes reliable control of this fissile material.

IAEA members are not only States but also NGO with consultative status and others which are observers. These NGO consist of Nuclear Societies from industrialized countries and the atomic industry. Because of this the IAEA is a one-sided powerful organization promoting nuclear industry on top international level.

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The World Health Organisation (WHO) and the IAEA on 28th May 1959 signed an agreement (WHA 12-40) to consult each other in subjects relevant for both parties to achieve mutual agreement. This agreement in practice has prohibited a comprehensive study of the health impacts of nuclear power in general and the consequences of Chernobyl in particular by the WHO. The resulting denial of radiation induced health effects put forward by the IAEA disregards the right of millions of radiation victims to receive acknowledgment of their health damage as radiation-induced and getting compensation.

After the catastrophe of Chernobyl proposals have been offered to the IAEA to establish an emergency force which uses the experiences, technical equipment and the expertise which resulted from the recovery work in Chernobyl. This proposal fell on deaf ears on the part of the IAEA. The Fukushima accident made clear that this neglect had been a grave mistake.

The majority of the IAEA member States nowadays no longer has the intention to construct nuclear power stations, quite in the contrary: Several States have decided to phase out their nuclear power plants.

Therefore it seems to be high time to review the anachronistic statutes and start a process to reform the IAEA.

The main goal from the perspective of sustainable development:

Instead of the present IAEA which promotes nuclear power, plays down or neglects its health effects and consequently fails in fulfilling its role in safeguarding we need an organisation for promotion and supporting the phasing out of military as well as civil nuclear industry and furthermore takes all relevant measures to mitigate the legacy of nuclear pollution created so far.

Proposal to reform the IAEA

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3rd May 2012

Proposals for a reform:

- The treaty between IAEA and WHO which has blocked comprehensive investigations of the health effects of atomic radiation has to be brought to an end.
- The endorsement whereupon every State has the right to build nuclear power plants has to be eliminated in the statutes of the IAEA.
- Promotion of nuclear power has to be eliminated from the statute, and on the other hand the competence in controlling should be improved substantially.
- In order to make this possible the structure of the members has to be changed. Organisations representing the victims of radiation and others, independent from nuclear industry should get influence within the IAEA.
- To initiate the complicated enterprise to reform or substantially transform the current IAEA an international conference by likeminded member States seems to be necessary. Such a conference which preferably should be organized in Vienna has to clarify whether a comprehensive reform of the IAEA is possible at all or one should aim for establishing an organisation at UN-level which represents the interests of the majority of present IAEA member States e.g. an International Solar Energy Agency.
- Following the example of the USAEC which could not fulfill its double role of promotion and control of nuclear industry and therefore had to be transformed in the Department of Energy (DOE) and the Nuclear Regulatory Commission (NRC) as a possible short time step the separation of the control function of the IAEA could be taken into consideration.



Vienna City Hall, venue of the IAEA-Symposium 2012

Proposals for a reform of the IAEA

Wolfgang Renneberg (Germany)

Former Head of the “Atomaufsichtsbehörde” Germany

The proposed reform of the IAEA comprises structural and policy changes. The goal of these proposals is to develop the IAEA to a more powerful and effective Organisation for nuclear safety and security by eliminating the structural barriers and modernizing its nuclear safety and security policy. The historical role of the IAEA to give assistance for the development of nuclear technologies remains untouched.

I. Basic problems

1. The IAEA in its historical and current role has the task to mitigate the nuclear risk that it has always been creating and is creating further. The historical vision of atoms for peace that had been the source of the IAEA has vanished.

The basic historical idea of the IAEA is to limit the number of nations that possess nuclear weapons. For all those who abandon the military nuclear option it offers assistance to develop the so called “peaceful” use of atomic energy. Therefore the promotion of nuclear energy is its primary goal (see Statute of the IAEA, Article II). The safety of nuclear energy is only an annex of its commitment for promotion (see Article III, 6). The treaty does not comprise any obligation of the parties to care for a safe operation of their nuclear power plants. The history demonstrates that a peaceful, safe and secure use of nuclear energy does not exist in the global scope. On the other hand nuclear energy cannot solve the global energy and climate problem and is not applicable for so called “underdeveloped areas of the world” against the fiction of the fifties of the last century (Article III, 2).

2. In its double function the IAEA cannot be regarded as an independent and credible guard for nuclear safety. By its practice the IAEA has shown that its role as a global nuclear safety guard is rather limited. It has to be acknowledged that the IAEA plays an important role as control board for fissile nuclear material and has developed instruments that can help to improve nuclear safety (IRS, IRRS, safety standards). On the other hand it was not able to prevent the expansion of military capabilities and nuclear accidents. As far as nuclear safety is concerned the IAEA regularly stresses the high standards of achieved nuclear safety, in most cases without and sometimes against a proven basis. In practice clear, precise and rigorous safety analysis’s and statements that could reveal existing weak features of nuclear safety in direct and clear words have been missing till today. The fear to jeopardize the further promotion and development of nuclear power by an open communication about nuclear risks determines IAEA’s policy.

3. A fundamental reform of the IAEA that would aim at eliminating the goal of promotion of nuclear energy would face relevant formal and political barriers and pro-nuclear interests. The IAEA is the result of an international treaty. Each member-state can withdraw its membership by simple declaration. Its statute can be amended by a two third majority of all members. Its policy is determined by the general conference which decides with simple majority about resolutions. Each member state has one vote in the

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General Conference. Currently the IAEA has 154 members. The Director General with his staff has practically a significant role in determining the practical policy of the agency. The financial contribution depends on the financial strength of the member state. Practically those of the member states that are contributing more to the financial resources of the IAEA have generally more influence in staffing decisions. Most of the financial burden is taken by those countries where the nuclear industry has a strong and partially a dominant influence. On the other hand many governments in particular of the smaller member countries regard the nuclear option as their vital interest, as a ticket to economic and political development. Against this background a fundamental reform of the IAEA is not a realistic goal.

II. Proposals

1. Creating the Basis for Independence:

The promoting function of the IAEA should institutionally be separated from its safety and security function to create a part of the IAEA as an independent International Nuclear Safety and security Agency. To ensure effective independence from undue influence on regulatory functions member states of the EU are obliged to ensure that “competent regulatory authority is functionally separate from any other body [...] concerned with the promotion [...] of nuclear energy” (Council Directive 2011/70/Euratom). Comparable requirements are part of the “Convention on Nuclear Safety” or of the “Joint Convention” on the safe management of nuclear waste. There is no reason not to apply the same criteria to the IAEA as an international – even though informal – nuclear authority. IAEA’s task to promote the world wide use of nuclear energy leads structurally and practically to an undue influence on IAEA’s role as a guard for nuclear safety.

Instrument: amendment of the statute

2. Creating a sound and transparent risk-communication:

As a centralized body the IAEA does not dispose of the capability to judge the overall safety of worldwide operating nuclear power plants. But the IAEA has the capability to analyse and compare risks and to contribute to a nuclear safety experience feedback. The IAEA should therefore restrict its statements to what it is capable to do. This means turning away from an affirmative safety rhetoric to a sound and open communication about existing risks and the options to manage them. The IAEA has a tradition to report on the global safety of nuclear power and after requested missions of single member states even to judge the safety of single nuclear power plants. From the technical point of view it is absolutely impossible – regarding the narrow time schedule of generally not more than two weeks – to analyse and judge the safety of a complex nuclear power plant within that limited time frame. On the other hand tar-

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get-oriented missions can reveal open questions of nuclear safety and risks according to the known state of the art. Open reports on those findings really could improve nuclear safety if highest standards are applied.

Instruments:

- 1. Public Conference on Risk-communication**
- 2. Policy paper, accepted by the General Conference**
- 3. Defining procedures on the level of the quality management of the IAEA**
- 4. Defining a controlled promotion policy**

It should be an objective of the IAEA not to contribute to the development of a nuclear capacity that could create new risks for nuclear safety or nuclear threats that could affect international safety and security. IAEA should define criteria for assistance to the development of nuclear technology in emerging countries. Criteria should enable a decision on whether an emerging country

- meets minimum criteria of national and international stability
- is capable and prepared to guarantee the installation of the administrative, scientific and technical structure that is needed to realise the nuclear option
- can sustainably make available the financial, technical and industrial resources needed to ensure a high level of regulatory competence, to ensure all means for safe operation and provide for a long term safe waste management programme
- has no effective and less hazardous alternative to the nuclear option

The discussion about criteria for the assistance to emerging countries is not a new one. Attempts to define criteria have been made within the Nuclear Safety Working Group of the G8, within the IAEA itself and the discussion about such criteria will now start in the European Union that must decide upon a new “Instrument for Nuclear Safety Cooperation”.

Instruments:

- 1. International Conference on assistance Criteria**
- 2. Policy paper, accepted by the General Conference**
- 3. International Convention**



Otto Jäckel and Wolfgang Renneberg at the IAEA-Symposium 2012

The role of the IAEA – nuclear power after Fukushima 3 May 2012

Mosaic of Fukushima – a public health perspective

Tilman Ruff (Australia)

IPPNW and ICAN

The Fukushima nuclear disaster, though a diabolical “Black Swan” event, was predictable and only a matter of time. The radioactive releases from the damaged nuclear reactors and spent fuel ponds deposited radioactive fallout over much of eastern Honshu, reaching well south of Tokyo. The best available independent evidence indicates that contrary to government and TEPCO claims, radioactive releases began soon after the earthquake and before the tsunami struck. As caesium isotopes with a half-life of 30 years contribute the largest share of the fallout radiation, substantial reductions in exposure will take centuries.

The response to the disaster has been widely recognised as disorganised, poorly prepared and in many respects makeshift and dysfunctional.

- Some populations were evacuated into the path of the heaviest radioactive fallout, despite this being information on the fallout path, which could have avoided this, being available at the time.
- Despite stable iodine - which could reduce uptake of radioactive iodine - being available, the Japanese government has reported that no stable iodine was given to exposed persons.
- The maximum acceptable additional radiation exposure limit for all members of the general population, including pregnant women and young children who are most vulnerable, was increased from 1 to 20 mSv per year; and from 20 to 250 mSv for nuclear industry workers. While the provisional radiation standards for food are being revised downwards in 2012, the overall limits – which have not yet been revoked - represent a willingness to accept a level of radiation-related health harm across the population which is unprecedented since the cessation of atmospheric nuclear tests. For example, a radiation dose of 20 mSv per year over 5 years for young children can be expected over the long-term to result in about one additional cancer case among every 30 children exposed. Hundreds of thousands of people across 8 prefectures are still being exposed to annual radiation levels over 1 mSv, in some cases tens of times higher.
- Information provided to the public on radiation risks and protection has been seriously deficient in accuracy, timeliness and independence.
- Some government actions have served to increase population radiation exposure, such as promotion of consumption of food from Fukushima.
- No significant international public health support was mobilised from outside Japan.
- While remediation measures can play a role in reducing radiation exposures, unrealistic expectations of the potential benefits have been promoted.

The role of the IAEA – nuclear power after Fukushima 3 May 2012

Mosaic of Fukushima – a public health perspective

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Priority public health needs include:

- Comprehensive, detailed mapping of estimated total radiation exposures (external and internal) for people living in all areas affected. No such mapping is currently publicly available. Such mapping should be validated with surveys of whole body measurements for internal exposure, using the best available techniques.
- Further evacuations, particularly of children, are needed. Relocation assistance should be made available to all who are likely to receive more than 1 mSv in additional radiation exposure per year.
- The maximum acceptable exposure limit for the general public should be returned to 1mSv without delay. Exposures greater than 5 mSv per annum more than one year after the disaster, particularly for those under 50 years of age, are unacceptable.
- Establishment of a comprehensive population register of those significantly exposed, with long-term linkage to national mortality, cancer, birth outcome and congenital malformation registers.
- Long-term health follow-up for those significantly exposed, including all those evacuated, including thyroid screening for exposed children.
- Long-term monitoring of radioactivity in the land and marine environment, animals, plants, food and freshwater should be undertaken and all results readily accessible to the public.
- Health monitoring and surveillance plans and results should be internationally peer-reviewed, and published in full in a timely fashion in Japanese and English.
- A national radiation exposure register should be established and monitor lifetime exposures for all workers in the nuclear industry, with workers having access to their results.
- Every effort should be made to prevent further large-scale radioactive releases from the damaged reactors and spent fuel ponds.
- Shutting down other nuclear power reactors and transferring spent reactor fuel from ponds to dry cask storage as quickly as possible, would reduce the danger of further similar disasters triggered by natural events or deliberate attack.

Tilman Ruff is a public health and infectious diseases physician, chair of the International Campaign to Abolish Nuclear Weapons (ICAN) core group; Southeast Asia-Pacific vice-president of International Physicians for the Prevention of Nuclear War; International Councillor for the Medical Association for Prevention of War (Australia); Associate Professor in the Nossal Institute for Global Health, University of Melbourne; and Australian Red Cross international medical advisor.



Otto Jäckel, Wolfgang Renneberg and Helga Kromp-Kolb at the IAEA-Symposium 2012

The double role of military-civilian use and the multi-class nuclear order

Dr. Wolfgang Liebert (Germany)

IANUS, Technical University Darmstadt
President of the International Network of Engineers and
Scientists Against Proliferation (INESAP)

Abstract:

In this speech, an explanation is given that the nuclear technology currently used in energy programmes has military roots. That has caused the dangerous civil-military ambivalence of nuclear programmes. States eventually aiming at weapon programmes have always used the dual-use potential of nuclear research, technology and materials. In particular, uranium enrichment and plutonium separation are proliferation prone.

The Nuclear Non-Proliferation Treaty (NPT) aims at curbing proliferation risks associated with civilian programmes. However, the IAEA safeguards system has loopholes and limits. It would be misleading to consider the existence of safeguards as a licence to work with sensitive proliferation relevant or proliferation-prone technologies and materials.

The notion that IAEA safeguards is not convincing. Over the last decades, other measures, which were not codified within the NPT, have been established, like export control. The asymmetry between “haves” and “have-nots” have increased and lead to a multi-class global nuclear order, which is unstable and perceived as unfair and unjust. It can only be maintained in a hierarchical world order – including the readiness to use military force against deviationists.



Iouli Andreev at the IAEA-Symposium 2012

Nuclear Emergency Service

Why doesn't this service exist on the international scale?

Iouli Andreev (Russia)
Former Scientific Director of Soviet Nuclear
Emergency Service "Spetsatom"

Abstract

After the Chernobyl accident the special Nuclear Emergency Service was created in former USSR. It was "Spetsatom" Industrial Amalgamation with more than 2000 specialists, with its own design branch, experimental plant and large park of special machines and equipment.

It was done because during recovery work it became clear that nuclear operators cannot deal with "beyond design nuclear accidents" General Director of IAEA Hans Blix arrived in 1988 in Chernobyl and claimed that same organization have to be created on the international scale under the sponsorship of IAEA.

It never was done for numerous hidden reasons. IAEA, in spite of its international status, is dominated by nations with nuclear industry, who never were interested to confess that large-scale accidents will happen in the future.

What could have been done in Fukushima, had in case International Nuclear Emergency Service existed in 2011? At least it would reduce the scale of accident's consequences.

It proves that IAEA structure and functions have to be overhauled.

Beyond design accidents.

Chronology:

- Three Mile Island, 1979
- Chernobyl, 1986
- Fukushima, 2011

It is too early to produce statistics from several events, but we may predict that "beyond design accident" they will inevitably happen in future.

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Three Mile Island 1979

- Nuclear safety is too expensive to permit nuclear energy to be competitive, the USA decided after Three Mile Island accident.
- For more than 30 years no new nuclear power plants have been built in America.
- This does not mean America has no risk from nuclear accidents.
- A TMI control room operator wrote a memo warning of "a very serious accident" if the condensate system problems were not properly addressed. He stated that "the resultant damage could be very significant." Additionally, James Cresswell, an NRC inspector, warned for two years[that a design flaw with U-shaped tubes could prevent coolant circulation and cause an accident like that which later occurred at TMI. His warnings were ignored until the NRC met with him six days before the accident at TMI. (Testimony of former NRC Commissioner Peter A. Bradford, Senate Committee on Environment and Public Works, Subcommittee on Clean Air and Nuclear Safety, March 24, 2009)

Chernobyl 1986

- Positive void coefficient, the main cause of nuclear explosion in reactor, is inversely to the grade of fuel enrichment. The wish of industry to use the cheap low enriched fuel was a cause of decreasing safety. After the accident enrichment of RBMK fuel was increased from 1,8 to 2,4%.
- It was found immediately after the Chernobyl accident that nuclear industry and civil defence forces cannot deal with consequences of the reactor explosion. The Special Military Scientific Center was created in Moscow within two weeks and sent on the Chernobyl site. It had orders to develop methods for regular army formations to deal with the consequences of the accident.
- In 1988 the Russian Government decided to create the Nuclear Emergency Service ("SpetsAtom") to deal with future large scale nuclear accidents.
- Nuclear Industry attempted to downplay the role of SpetsAtom, saying that accidents like Chernobyl would never happen again in the future.

In 1988 former director of the IAEA Dr. Hans Blix visited Chernobyl and met Spetsatom's leaders. During the meeting he said that an organization like Spetsatom would have to be established in the structure of IAEA, but it seems this idea was not supported by the staff of the Agency.

Nuclear Emergency Service

Why doesn't this service exist on the international scale?

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Former Scientific Director of Soviet Nuclear
Emergency Service “Spetsatom”

Now it is easier to understand which arguments were at the base of the decision not to create an international nuclear emergency centre.

Fukushima 2011

- In Fukushima TEPCO reduced costs by insufficient preparedness for the impact of tsunamis.
- The design of GE's reactors itself was too cheap to be safe.
- TEPCO was never properly prepared for disaster – loss of power sources was not envisioned (The Japanese government's Nuclear and Industrial Safety Agency (NISA) released part of an unedited severe accident manual for Fukushima No. 1)
- Japan has been hit by 195 tsunamis since the year 400. In the last three decades, there have been three waves that were more than 30 feet high. Yet Tokyo Electric's seawall defences at Fukushima were built to protect the nuclear reactors from waves reaching only 17 feet high. "That is ridiculous," says Ryohhei Morimoto, a retired volcanology professor at the University of Tokyo, (as quoted by “The Japan Times”). "Even if they couldn't predict the size of tsunami, they should have at least prepared for waves similar to those in the past."
- From the start of emergency operations in Fukushima it was clear that Japan was absolutely unprepared for this type of task. TEPCO was assigned the responsibility for this work. In time reactor cores melted, buildings exploded, chaotic processes started in the waste fuel storage tanks. Reliable information on the situation was missing. As in Chernobyl, the situation confirmed that nuclear industry is unable to deal with large scale accidents.

Nuclear Emergency Service

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What could a hypothetical International Nuclear Emergency Center have done in Fukushima?

- Daichi NPP lost power supply. A ship with at least 2MW generators and emergency equipment should have entered the bay immediately and connected cables to all Units.

Simultaneously the reconnaissance work should have started with the help of experience "stalkers" and remote controlled devices.

- Headquarter of NEC should have been located on a second ship along with a hostel for the NEC staff.
- Large mechanical and electronic workshops with design offices should have been located on a third ship to produce non-standard equipment for the emergency work on short notice.
- Barges with 50 000 t displacement half filled with fresh water and equipped with pumps should have entered the bay. This was necessary to cool the reactors and contain radioactive cooling water.
- All the ships must be equipped with radiation control devices and be ready to abandon the bay in case radiation level became too high.

RCV and Robots

- "Robots" are autonomous machines that do not require human guiding. Therefore they are not used during emergency work and hardly will be used in nearest future. "Remote Controlled Vehicles" or "RCV" for use during nuclear emergencies are mobile, flying, floating or stationary, depending on the task. Stereo vision is necessary to guide RCV. It is useful to have a modular structure of RCVs.

Nuclear Emergency Service

Why doesn't this service exist on the international scale?

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What prevented the world from cooperation in the area of emergency preparedness?

Nuclear industry preferred to claim that each current large scale nuclear accident was the last one, due to comprehensive safety measures that would prevent accidents in future. For instance, after Fukushima accident a series of "stress tests" were performed to prove that NPPs are not vulnerable to the earthquakes and flooding.

- But what about the lax regulators, linked to industry, about greedy investors, cheap reactors, low qualification of operators?
- It looks like a lazy janitor, who puts sand on the particular spot where somebody broke his leg, not on the whole yard, covered by ice.
- The industry prefers to keep mum on problems of nuclear accidents, and above all not to remind society of nuclear emergencies.

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