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UNITED NATIONS YOUTH AND STUDENT ASSOCIATION OF AUSTRIA

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VIENNA INTERNATIONAL MODEL UNITED NATIONS
03 - 07 August 2014

Preparation Paper/Study Guide:

International Atomic Energy Agency (IAEA)

“Management of Severe Nuclear Accidents”

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The Committee

The International Atomic Energy Agency (IAEA) seeks to promote peaceful use of nuclear energy and to inhibit its use for any military purpose. The IAEA belongs to the category of “Specialized agencies” and as such is an autonomous international organization that was established on 29 July 1957 on foundation of its own international treaty the IAEA Statute¹. Though having been established as an independent institution, the IAEA still reports to the United Nations.

The creation of the IAEA was proposed by the American President Dwight D. Eisenhower.² In his famous „Atoms for Peace“-speech, President Eisenhower addressed the international community by calling out for an organization which would support the peaceful use of nuclear technology. He wanted the creation of such an institution in response to the deep fears and great expectations resulting from the discovery of nuclear energy since 1945. When the negotiations were held on October 23rd 1956, President Eisenhower’s vision of solving the “nuclear dilemma” became a reality. Diplomats and lawyers, advised by scientists, and drawing on the precedents set by other organizations, developed the main ideas of the organization into a charter of an international agency. The IAEA Statute was approved unanimously by 81 nations on that date. The IAEA Statute entered into force, thus officially creating the IAEA, on July 29th 1957 and in October of the same year, delegates from 59 states convened in Vienna, Austria for the first General Conference which lasted three weeks. Since that initial meeting, IAEA membership has expanded to 162 member states and the agency’s mission has evolved alongside advancements in nuclear science. The Statute lays down the three primary goals of the agency as:

- Promoting Science and Technology,
- Developing nuclear safety standards to protect human health and the environment against any form of nuclear threat (radiations, nuclear waste, etc.)
- The safeguard and application of the “three pillars” expressed in the Treaty on the Non-proliferation of nuclear weapons (Non-proliferation, disarmament and the right to peacefully use nuclear technology)

As an independent international organization related to the United Nations system, the IAEA’s relationship with the UN is regulated by special agreement. For example, the General Conference’s annual reports are submitted to the UN General Assembly Plenary and, if related to issues of international security, to the Security Council. The IAEA’s work is closely linked to the Security Council (SC), which can request the Agency to take actions on issues concerning peace and security. As stated previously, today you would consider the IAEA as a specialized agency, which means it works within the machinery of the UN. Normally those agencies work within the framework of the Economic and Social Council, but as explained above the IAEA does most of its work and report to the General Assembly and the Security Council.

The IAEA consists of three policy making bodies: the General Conference, the Board of Governors and the Member States. The General Conference is the highest policymaking body of the IAEA. It is composed of representatives of all member states of the Agency. The General Conference meets annually to consider and approve the Agency's program and budget. The Board of Governors, to which 35 members of the IAEA are elected, is the main executive organ of the IAEA. The Board generally consists of experts and meets five times a year.

Relationship with the UN

From the beginning, the IAEA has stressed its mission to be under the umbrella of the UN and in line with the principles of the Charter of the UN. Still, the IAEA is somewhat unique within the UN system as it is the only agency focusing on issues specifically related to nuclear technology.

The General Conference’s annual reports are submitted to the UN General Assembly Plenary and, if related to issues of international security, to the Security Council. The IAEA’s work is closely linked to the Security Council (SC), which can request the Agency to take actions on issues concerning peace and security. SC Resolutions regarding safeguards and the proliferation of nuclear weapons such as SC Resolutions 1373 and 1540 are examples of this cooperation and have become integral parts of the Agency’s legal framework. Both Resolutions call for close cooperation with the IAEA to counter nuclear terrorism and the possession of nuclear material by non-state actors. The IAEA has established programs to support Member States in taking effective measures of that concern.

¹ <http://www.iaea.org/About/statute.html>

² <http://www.iaea.org/About/history.html>

Introduction to the Topic

Role of the IAEA in the events of nuclear and radiological emergencies

The IAEA has played a largely advisory role in the area of nuclear safety since the Chernobyl disaster in 1986. The responsibility for response to a nuclear or radiological incident or emergency and for the protection of employees, the public, property and the environment rests with the operating organization at the level of the facility concerned, and with the affected State by the disaster.

At the same time, the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (Assistance Convention) are the primary legal instruments that establish an international framework to facilitate the exchange of information and the prompt provision of assistance in the event of a nuclear or radiological emergency, with the aim of mitigating any consequences. These are supplemented by a number of mechanisms and practical arrangements established under the Early Notification and Assistance Conventions. Together, these instruments establish the IAEA emergency preparedness and response framework for nuclear and radiological incidents and emergencies.

Following the Fukushima incident the states parties to the Early Notification and Assistance Conventions are also required to explore mechanisms for enhancing the effective implementation of these Conventions and member states are encouraged to join and effectively implement them.

The Agency's central role under this framework includes, inter alia, the swift notification of the emergency to member states and international organizations, the exchange and provision of officially verified information to member states and international organizations, the coordination of international assistance, upon request of the State concerned and the provision or coordination of appropriate public information. Furthermore, the IAEA has a 24/7 emergency contact point and operational centre for nuclear emergencies (Incident and Emergency Centre). The role of the Incident and Emergency Centre (IEC) as an international hub for exchange of official information, provision of information to the public, coordination of the response of relevant international organizations, and facilitation of international assistance has proved its usefulness and needs to be maintained and but also improved in efficiency.

In July 2011, three months after the accident in Fukushima, the Unified System for Information Exchange in Incidents and Emergencies (USIE) was launched, including for instance the enhanced subscription and alerting feature implemented through the use of diverse alert channels (e.g. e-mail or sms), joining of the reporting systems used by the competent authorities and by the INES National Officers into a single, unified reporting system

The primary inter-agency coordination mechanism with regard to nuclear and radiological emergencies is the Inter-Agency Committee on Radiological and Nuclear Emergencies (IACRNE). The IACRNE was established following the Chernobyl accident and currently includes 15 international organizations.

The IAEA Medium Term Strategy

The IAEA today is a unique multidisciplinary organization in the United Nations system. The diversity of its mandate is documented in the Agency's Medium Term Strategy (MTS) 2012-2017³, which is part of the Long-Term Strategy 2012-2023 (LTS)⁴. The LTS was released by the Department of Safeguards in 2010 after a two-year planning process. According to the MTS the Agency's primary future challenges are: global energy security, human health, food security and safety, water resource management, and nuclear safety and security and non- proliferation. Through the Medium Term Strategy the IAEA contributes to achieve the Millennium Development Goals by providing management, guidance, and support for the effective implementation of peaceful nuclear programs. The IAEA has come a long way from its foundations until today. The spread of nuclear technology will increase, which leaves nuclear safety a high importance for the Agency. The story of IAEA safeguards is a story of success, still one with many challenges lying ahead. The ratification of additional protocols and amendments to ensure the peaceful use of nuclear technology in the 21st century is an important part of this goal. The Agency must thus continue to spread knowledge of and cooperation among countries for the peaceful use of nuclear technology as well as efforts to strengthen safeguard agreements.

³ http://www.iaea.org/About/mts2012_2017.pdf

⁴ http://www.iaea.org/safeguards/documents/LongTerm_Strategic_Plan_%2820122023%29-Summary.pdf

Safety Standards, Legal Framework, and International Atomic Energy Agency Conferences

Updating safety standards and evolving as nuclear technology changes is one of the many solutions that the IAEA has put in place to be better equipped to handle nuclear crises situations.

In general, the status of the IAEA safety standards derives from the IAEA's Statute, which authorizes the IAEA to establish or adopt, in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and minimization of danger to life and property, and to provide for their application. With a view to ensuring the protection of people and the environment from harmful effects of ionizing radiation, the IAEA safety standards establish fundamental safety principles, requirements and measures to control the radiation exposure of people and the release of radioactive material to the environment, to restrict the likelihood of events that might lead to a loss of control over a nuclear reactor core, nuclear chain reaction, radioactive source or any other source of radiation, and to mitigate the consequences of such events if they were to occur. The standards apply to facilities and activities that give rise to radiation risks, including nuclear installations, the use of radiation and radioactive sources, the transport of radioactive material and the management of radioactive waste.

The IAEA safety standards reflect an international consensus on what constitutes a high level of safety for protecting people and the environment from harmful effects of ionizing radiation, yet those standards cannot be enforced by the IAEA.

Adapting safety standards to ever- changing nuclear technologies and aiding states in increasing their own safety standards to ensure the safety of nuclear energy is one of the IAEA's most important roles. This entails supporting accords such as the Global Initiative to Combat Nuclear Terrorism and increasing transparency amongst Member States to allow for all Member States to be better equipped to handle nuclear crises. Important to the IAEA's work is the legal framework put in place by its Member States to aid in its work. Some of these legal documents include the Convention on Nuclear Safety (adopted in 1994), the Joint Convention on the Safety of Spent Fuel Management and Radioactive Waste Management (Joint Convention, adopted in 1997), and the Convention on the Physical Protection of Nuclear Materials (adopted in 1979). However, according to the IAEA, there is currently no overarching relevant document that addresses nuclear security in a comprehensive manner. What this has resulted in is the IAEA monitoring compliance with existing treaties by sending out International Teams of Experts (ITE) to Member States to ensure that they adhere to relevant international instruments. Also extremely important is the IAEA Action Plan on Nuclear Safety because it is the most current document adopted by the IAEA in terms of nuclear safety. The review conferences and other various conferences that the IAEA holds every few months also play a role in influencing nuclear security because they have the ability to discuss the most recent topics affecting the nuclear security debate.

The March 2012 Nuclear Security Summit in Seoul, South Korea, took the first important steps towards increasing nuclear security and safety, as it addressed major nuclear issues relevant to the IAEA and the international community. Some of these areas of work included renewing their commitment to work towards strengthening nuclear security, reducing the threat of nuclear terrorism and preventing unauthorized acquisition of nuclear materials, facilitating international cooperation and supporting the efforts of countries to fulfill their nuclear security responsibilities. The May 2012 Fourth Review of the Joint Convention meeting was also important as it allowed all State parties to the convention to present their national report and they were required to answer questions from other participating states. Interestingly, this meeting allowed for a "peer review" where delegates answered questions from fellow participants regarding their national reports, therefore encouraging accountability and transparency. In September of 2012, the IAEA also met to discuss the protection of nuclear power plants from natural disasters. This meeting affected the nuclear security debate because the most recent nuclear crisis in Fukushima was caused at least in part by an earthquake and resulting tsunami. Although this topic was discussed, there were no resolutions passed regarding this topic. One topic that states did discuss, however, was "Measures to Strengthen International Cooperation in Nuclear, Radiation, Transport, and Waste Safety." The report created by the Director-General of the IAEA (GOV/2012/28-GC(56)/6)⁵ will likely impact the debate on this topic, as it addresses all facets of this topic.

Past nuclear crises that have been relevant in shaping the IAEA's policies regarding nuclear crises include the Three Mile Island incident, Goiânia, and Chernobyl. The Fukushima Nuclear Disaster, classified by a Japanese parliamentary report as man-made, is classified by the Tokyo Electric Power Company as unforeseeable. Currently, the Fukushima Nuclear Disaster has resulted in the IAEA holding seminars about nuclear disasters and creating the IAEA Action Plan on Nuclear Safety. The IAEA seminars are organized by the IAEA Secretariat to discuss relevant international issues affecting nuclear safety, with a total of eight being held in 2012. The action plan is one of the many documents that came out of a particular seminar, such as those documents that were created by the Member States of the IAEA during the 56th General Conference in September 2012.

⁵ http://www.iaea.org/About/Policy/GC/GC56/GC56Documents/English/gc56-6-corr1_en.pdf

During the first year of the IAEA Action Plan on Nuclear Safety, the IAEA participated in:

The International Expert Meeting on Reactor and Spent Fuel Safety in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant

The Technical Meeting on Establishing, Developing and Maintaining Capacity Building in Member States

The International Experts' Meeting on Enhancing Transparency and Communication Effectiveness in the Event of a Nuclear or Radiological Emergency.

The IAEA also participated in both the International Experts' Meeting on Protection against Extreme Earthquakes and Tsunamis in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant and the Fukushima Ministerial Conference on Nuclear Safety in 2012.

At the same time the Agency also offered a forum to share knowledge and experience of human and organizational aspects of nuclear safety and on their interactions within the system of humans – technologies – organizations, on the International Experts' Meeting (IEM) on Human and Organizational Factors in Nuclear Safety in the Light of the Accident at the Fukushima Daiichi Nuclear Power Plant. The IAEA develops Safety Standards and provides detailed guidance to promote a strong safety culture among its Member States. The Agency defines safety culture as the “assembly of characteristics and attitudes in organizations and individuals which establishes that, as an overriding priority, protection and safety issues receive attention warranted by their significance”⁶. At the International Experts' Meeting on Radiation Protection after the Fukushima Daiichi Accident states came to the conclusion that states should develop and implement a national strategy to build and maintain their competences in radiation protections. Another idea raised at the meeting was that people affected by radiology should have the right to be involved in the response. The meeting also addressed risk communication issues, and how to convey radiation exposure information effectively and understandably to the public. To be successful decision makers must also work with the public, informing them about emergency preparations and actions that will be taken in the event of a nuclear or radiological incident. In recognition of the number of more than 30 new countries showing their interest in building their first nuclear reactor, the need for predictability of cost and energy security, as well as growing concerns over climate change and the need for clean energy make nuclear power an attractive alternative. However, to approach a systematic and integrated development in the governmental, organizational and individual competencies capabilities are necessary to achieve a safe, secure and sustainable nuclear power program. Besides the regular workshops and meetings the IAEA will hold meetings on practical application of IAEA Nuclear Security Recommendations and Guidelines and International Transport of Nuclear Material, Technical Meeting to Develop, Review and Revise a Draft IAEA Technical Document on the Design Provisions for Station Blackout at Nuclear Power Plants and meetings between the IAEA and the other international organizations such as ASEAN to discuss the Network of Regulatory Bodies on Atomic Energy (ASEANTOM).

Fukushima Daiichi Nuclear Disaster

To date, there have been five serious accidents (core damage) in the world since 1970 (one at Three Mile Island in 1979, one at Chernobyl in 1986, and three at Fukushima-Daiichi in 2011).

On March 11, 2011, an earthquake and tsunami rocked the east coast of northern Japan. It was predicted that the natural disaster would trigger a nuclear disaster. The natural disaster resulted in the power supply being disabled and caused the cooling systems of the nuclear power plant to fail. The government was able to remove the citizens present from the zone of danger and therefore prevent any deaths during the accident, yet the long term effects for the human beings (e.g. cancer) and the environment, particularly the sea are still unknown. Recently, a Japanese Parliamentary Panel that investigated the nuclear disaster said that the disaster was, to a certain extent, man-made, and an effective human response could have mitigated the damages caused by the nuclear power plant. The report went on to further conclude that “Japanese culture, such as, obedience and reluctance to question authority”⁷ resulted in a failure to mitigate the damage caused by the Fukushima Daiichi Power Plant. Because of this report and others coming from Japanese and independent IAEA studies, the IAEA maintains its commitment to develop solutions to mitigate damages caused by such nuclear disasters, by learning from these lessons of past failures.

The nuclear catastrophe at TEPCO's Fukushima Daiichi nuclear power plant in March 2011 showed the need for improving mechanisms related to the safety of humans and the environment against radiation.

How did the IAEA react to the incident in Fukushima on an operational basis? Immediately after the earthquake and the tsunami, the IAEA notified member states and international organizations of the emergency at the nuclear plant in Fukushima, and provided states and the public with frequent briefings as it

⁶ <http://www.iaea.org/ns/tutorials/regcontrol/intro/glossarys.htm>

⁷ <http://www.bbc.com/news/world-asia-18718486>

received information from Japan. As the IAEA established operations in Japan to aid in environmental monitoring, the Agency's Director General Yukiya Amano visited the country for a series of high-level meetings, including with then Prime Minister Naoto Kan. Shortly thereafter, Amano called a Board of Governors meeting to report on the results of his trip and actions taken by the IAEA and to hear concerns from other member states.

The IAEA faced serious criticism for its handling of this disaster. Some Western states as well as media within Japan called the IAEA's response too slow, confusing and dependent on information from Japan. Many experts, however, countered that the IAEA cannot accomplish a great deal without a mandate for enforcement of safety standards or receiving more resources to implement safety programs. Furthermore, there seemed to have been great misunderstanding of the Agency's mandate by the wider public, as nuclear safety standards under that mandate are voluntary.

Due to the criticism and for reasons of better evaluating the Amano called a ministerial-level conference in June 2011 to explore ways to strengthen the IAEA's role in nuclear safety. The conference adopted a Ministerial Declaration calling for improvements in global nuclear safety and asked the Agency to prepare a draft Action Plan to address relevant issues. The action plan was approved by the IAEA General Conference and the Board of Governors in September 2011.

The Action Plan

The purpose of the Action Plan was to define a programme of work to enhance the global nuclear safety framework. The plan consists of actions building on the Ministerial Declaration, the conclusions and recommendations of the Working Sessions, and the experience and knowledge therein.

The action plan called for strengthening: IAEA nuclear safety peer reviews; emergency preparedness and response; the effectiveness of national regulatory bodies and operating organizations; IAEA Safety Standards and their implementation; the international nuclear safety legal framework's effectiveness; capacity building; communication, information dissemination, and transparency; and nuclear safety research and development.

A special focus lies within capacity building for quick responses to nuclear incidents and to find the best-suited measures for the individual state instead of general solutions.

The Agency and member states have taken a number of steps to implement the plan. In November 2011, the IAEA released a methodology to help states assess whether structures, systems, components, and operator actions can fulfill necessary safety functions when extreme events occur.

At a meeting of experts in March 2012, many IAEA member states assessed the safety vulnerabilities of their own plants as a step towards greater public transparency. A common list of safety priorities appeared to emerge from these discussions. These included: enhancing nuclear power plant protection against extreme events (earthquakes, tsunamis, flooding, and tornadoes) and their consequences, such as total "station blackout," loss of reactor and spent fuel pool cooling, and loss of communications. Recommendations from this forum also focused on enhancing emergency response and hydrogen explosion control; providing for more robust instrumentation that can withstand accident conditions to ensure the continued monitoring of key safety parameters in the reactors and spent fuel pools; and implementing stronger accident mitigation measures and improving emergency management capabilities. Several experts also proposed establishing an additional layer of protection to prevent a severe accident, regardless of the initiating event. This additional protection would prevent an accident's progression to a situation that results in fuel damage and melting. They suggested considering the provision of additional fixed and mobile equipment to provide the increased capacity to meet essential functions, such as delivering power and cooling water.

Potential Future Nuclear Crises

Nuclear disasters have many causes and are not solely limited to nuclear plants.

Potential future nuclear crises are examples of crises that have not occurred yet, but that the IAEA is attempting to prevent. There is grave concern that future management of nuclear accidents may involve acts that not only threaten nuclear safety but also nuclear security. Examples of potential nuclear disasters that have both dimensions, nuclear safety and nuclear security, include nuclear terrorism (such as dirty bombs) and the potential harms that could occur if the safety of spent fuel during transport and storage is compromised.

Nuclear terrorism certainly is one of the most prominent threats. Member states of the IAEA fear that a terrorist organization might either attack a nuclear power plant or have a nuclear weapon in their possession, and there is a consensus those are real threats. At least four recognized terrorist organizations have expressed their desire to obtain a nuclear weapon, specifically a dirty bomb. In 2010, US President Barack Obama held a summit in Washington D.C. in regards to the safeguard of nuclear materials. This put nuclear

security high on the agenda of multiple world leaders, and the topic was again discussed during the March 2012 Nuclear Security Summit in Seoul, South Korea. The Seoul Communiqué⁸, published on the final day by the IAEA, “noted the essential role of the IAEA in facilitating international cooperation and supporting the efforts of countries to fulfill their nuclear security responsibilities.” Given the duties of the IAEA, an interesting facet of the nuclear security debate is a discussion regarding the Fukushima Daiichi Nuclear Disaster. According to facts coming out of the Seoul Summit, had Japan implemented some of the recommendations made to them by the US regarding anti-terrorist measures, Japan could have mitigated the damage caused to the Fukushima Daiichi Nuclear Power Plant. Documents published since the Fukushima Disaster put forward that this type of disaster was not unforeseeable and the possibility that this could occur was simply ignored by the Japanese government. The reason that Japan had not instituted anti-terrorist measures at any of its nuclear power plants is because the Japanese government believed that a September 11th style attack on its nuclear power plants would be inconceivable. Yet Japan's disaster at its Fukushima plant has provided a salient example of how solid protections against terrorist attacks go hand in hand with protections against natural disasters. Nuclear safety and security are closely intertwined. Both terrorist attacks as well as natural disasters can lead to severe nuclear accidents and are mostly unforeseeable. An attack on a nuclear power plant could do tremendous damage and the long term aftermath unprecedented. If terrorist groups could sufficiently damage safety systems to cause a core meltdown at a nuclear power plant, and/or sufficiently damage spent fuel pools, such an attack could lead to widespread radioactive contamination. The vulnerability of nuclear power plants has been discussed extensively after 9/11 and still remains a grave concern for many states.

Future challenges

Lack of resources

With an ongoing economic crisis the already flat budget of the agency suffers in both human resources and in capital, as a result some safeguards technologies are outdated. A new generation of technologies for inspection is certainly needed. Detection and inspection technology must be up to date.

Adherence and enforcement

Though the IAEA is given the ability to inspect undeclared areas and facilities, it is still unable to do this without the consent of the host state, as the conclusion it must be an initiative of the state. Therefore the system is not able to reach its full potential as a policing mechanism. The encouragement of states is needed so the organization can enforce peaceful and on consensus based solutions instead of the Security Councils.

The access to civilian nuclear facilities is even more difficult, as it cannot be enforced under the current mandate of the IAEA.

Increasing number of future reactors

At the moments there are 178 states having 1100 facilities under safeguards. Figures show the tendency of an additional number of 300 reactors within the next two decades to be installed, which will pose further challenges on the safety and protection of people. The Agency is thus eager to increase accession to safeguards and additional protocols. The Agency must thus continue to spread knowledge of and cooperation among countries for the peaceful use of nuclear technology as well as safe exploitation of the resource.

Also with construction of new reactors, one has to consider what shall happen to the older ones.

Modern reactor designs can achieve a very low risk of serious accidents, but “best practices” in construction and operation are essential. We know little about the safety of the overall fuel cycle, beyond reactor operation.

Country Positions

C h i n a

Faced with an ever growing energy demand, China has long realized its need for sources of energy, beyond its traditional reliance on coal. The Chinese government intends to meet this demand with atomic generated power and to export nuclear technology. Grave air pollution caused by coal-firing plants also determines China to promote nuclear energy. Currently approximately 2% of the electricity derives from nuclear power stations, but the Chinese government pointed out that it would like to raise it to 6% by 2020.

China disposes of the world's most advanced technology in the field of nuclear energy and is planning to

⁸ <https://www.nss2014.com/en>

open even more reactors with an increased capacity. China has taken the Fukushima accident as a lesson and has shown unprecedented eagerness in achieving the highest standards of nuclear safety. China has expressed grave concerns about the accident at Fukushima Daiichi and has heavily criticized Japan. The tense relations between the two countries have been burdened even further when China accused Japan of deliberately leaking radioactive contaminated water into the Pacific and failing to duly inform its neighbor states about it. The Chinese government has demanded that measures be taken by Japanese authorities to remedy the situation. Furthermore, China blames Western governments for being too tolerant with Japan handling the situation badly and asserted that this ill-conduct would not have occurred, hadn't Western media been so mild in its discourse against Japan.

J a p a n

The Japanese government has been going out of its way in order to downplay the severity of the Fukushima disaster and its aftermath. Authorities faced harsh criticism for withholding critical information about contamination levels and failing to extend the exclusion zone around Fukushima in time. Furthermore, the Tokyo Electric Power Company, also known as Tepco, is planning to re-open the Kashiwazaki-Kariwa nuclear facility this year. This decision has sparked protest among the Japanese population, which is still traumatized after the incident from three years ago. Tepco has also been said to have assigned poorly skilled personnel with the cleanup of the area around Fukushima, thus putting its workers at risk and leading to some grave mistakes on site.

As regards health concerns caused by the disaster, there have been mixed prognoses. Some experts assert that the damage to the Fukushima reactor does not pose any significant threat to the Japanese population outside of the affected area. Nevertheless, it is still hard to tell, whether this assessment is scientifically valid or whether it is just a form of nicely packaged marketing, as the true health consequences of the incident will only reveal themselves within a longer time span.

E u r o p e a n U n i o n

In 1957, the European states founded the Euratom, whose purpose is to help develop the nuclear industry and also provide safety regulations for nuclear facilities. It has since been almost completely integrated in the institutional framework of the European Union. Atomic energy is an important source of energy in Europe. The EU is focusing on safety issues and non-proliferation and is cooperating closely with the IAEA in this respect. Since 2013, EU and IAEA officials hold a yearly meeting in Brussels for the purpose of improved cooperation and pursuing common goals. The EU is financially supporting the Agency and its Technical Cooperation Program with view to safe and peaceful use of nuclear power, radiation protection and effective safeguards for nuclear material.

The Fukushima disaster has prompted European states to take an introspective look at their own security and regulation regarding nuclear power. Especially domestic ecologic parties have been pushing for an extensive use of alternative energy sources.

Despite being under a lot of pressure to back out of the use of nuclear power, Chancellor Merkel has been rather hesitant to completely shut down nuclear facilities and is instead proposing a more gradual transition to green energy. Following the incident of March 2011, the German chancellor Merkel showed little concern regarding nuclear facilities in Germany, declaring that they were amongst the safest in the world. Still, unresolved issues of nuclear waste remain. Germany is set to abandon nuclear power by the year 2022. At the time being, it has 9 reactors still in use and is dealing with safety issues by way of tight regulation.

In France, atomic energy is still the main source of energy. France has the worldwide largest percentage of electricity generated by atomic energy and is also the world's largest exporter of electric energy. As opposed to other European countries, the Japanese situation in March 2011 had little to no impact on the French nuclear policy. It did however determine French authorities to revise the safety of their reactors. Some deficiencies were detected and remedied and the facilities were further equipped so as to successfully withstand earthquakes. While President Sarkozy was a firm proponent of atomic energy, there are chances that this policy might loosen up under the presidency of Hollande.

Since 2008, British energy policy has been aiming to reduce CO₂ emissions, regardless of the cost. The UK is planning to retire its 16 currently running facilities by the year 2023 and to build 19 new reactors. Thorough assessment processes have been implemented for the design and location of new facilities.

U S A

The US government is largely in favor of nuclear power, despite the fact that nuclear waste issues in the country remain unresolved. Geopolitical importance is being attributed to nuclear power, as it diminishes the USA's dependency on gas and oil imports. Few new plants are being built, as existing ones are growing old and increasingly accident-prone. With many plants located along rivers and in areas prone to earthquakes, the risk of accidents and leaks is becoming higher. There is urgent need for tougher regulation, however, the lobby of the nuclear industry continuously pressures the government into the opposite direction.

R u s s i a n F e d e r a t i o n

Nuclear energy amounts to a total of 16% of Russia's power. Nevertheless, Russia has a long standing history of nuclear accidents, some of which resulted in severe contamination. The disaster of the Chernobyl nuclear power plant counts as the single most destructive nuclear accident in history. Experts trace a broad spectrum of diseases and malformations in the affected population back to this incident. The negative

experiences however have not weaned Russia off nuclear power. Russia is planning an expansion of its nuclear capacity, which on the one hand would make it less dependent on fossil fuel and on the other hand would very well serve Russian policy of exporting energy.

Points to address in the resolution

Some of the most important questions are in regards to how to address nuclear emergencies when they happen, how to do so effectively, and how to go about doing so in the safest manner possible. Given the countless number of conventions, protocols, and safety standards, is there a way to streamline this process? Should each nuclear power plant be required to give reports directly to the IAEA? Should the IAEA be responsible for monitoring safety protocols and ensure that all nuclear power plants are in compliance? Should there at least be requirements for international, standardized safety and security checks for older nuclear power reactors or regular compulsory stress tests? How should the IAEA encourage Member States to sign onto existing conventions and participate in meetings? Does the Agency have to have more power to make the world a better place? Could its mandate be redefined? What kind of methods to manage severe nuclear accidents should be devised and how can the IAEA be involved in emergency scenarios?

Answering these questions will aid in developing solutions to improve global emergency preparedness for nuclear crises situations, and will go further in ensuring that these types of situations can be avoided altogether.

Conclusion

Increasing global awareness for nuclear crises is one of the most important issues targeted by the IAEA as a nuclear disaster has the ability to harm a tremendous number of individuals through one crisis. Nuclear and radiological emergencies have caused the deaths of thousands of individuals, forced evacuations of an uncountable number of people, and have caused formerly thriving cities to become figurative ghost towns. Nuclear and radiological emergencies are transnational by nature and can have detrimental impacts on the people and habitat of animals and plants miles away from the location of the actual disaster.

Hence a international cooperation is indispensable and the IAEA has always been the central organization for issues related to nuclear security. Yet the IAEA has also been criticized for not handling nuclear emergencies efficiently and not providing sufficient information to states and to the general public about emergencies like the one in Fukushima. The lack of information and the delay in providing more detailed information about the incident were attributed not only to the Japanese government and the operator of the nuclear plant, but also the IAEA. Not only was the IAEA accused of systematic problems in dealing with nuclear accidents, but also of not having the ability and also the willingness of explicitly tackling nuclear emergencies and being dependent on the nuclear industry, hence avoiding issuing bad news. Questions were raised whether the institution has actually learnt the lessons from the tragic accident in Chernobyl and whether the IAEA has the necessary distance from the nuclear industry.⁹

Yet it is evident that this criticism indeed lacks some foundation as the IAEA's mandate is determined by the member states of the IAEA and its capabilities therefore greatly limited as the member states have not devolved sufficient authority to the IAEA. The working methods of the current IAEA are not designed to see it as the leading decision maker in case of a nuclear disaster. After all it is still the country in which the nuclear plant is located that has the primary responsibility to react and to provide the required information to the international community, inter alia the IAEA, which can then verify the information.

While the IAEA has a mandate to demand inspections of nuclear weapons programmes, the Agency cannot demand inspections in the area of nuclear safety.

The IAEA depends on voluntary compliance with its standards in the area of nuclear safety and cannot unilaterally enforce the standards as the mandate of the IAEA is not designed for this.

Whether the international community and member states of the IAEA have learnt the right lessons from the accident in Fukushima and whether the future role of the IAEA in the events of nuclear and radiological emergencies should be changed is certainly debatable. Emergency preparedness has become the major issue following the accident in Fukushima. Harmonization of Emergency Preparedness and Response (EPR) arrangements within the European Region

In order to understand how to go about improving global emergency preparedness, one must understand how past crises have impacted the current debate regarding this issue. The International Atomic Energy Agency (IAEA) is currently working towards creating protocols to help mitigate the damages caused by all types of nuclear crises. Global Preparedness occurs when the IAEA has processes in place to help deal with

⁹ <http://www.theguardian.com/world/2011/mar/15/nuclear-watchdog-response-japanese-disaster>

a nuclear crisis; and how to ensure that the IAEA is prepared to handle future nuclear crises comes to the crux of this topic. In order to fully grasp the importance of this topic, it will also be important to understand protocols and documents already created by the IAEA and how they will influence discussions regarding this topic going forward.

Further reading

http://www.academia.edu/820734/Fukushima_Consequences_of_Systemic_Problems_in_Nuclear_Plant_Design

<http://www.bbc.com/news/world-asia-18718486>

<http://www.iaea.org/newscenter/focus/fukushima/index.html>

<http://www.iaea.org/Publications/Magazines/Bulletin/Bull541/54104711414.pdf>

<http://www.iaea.org/Publications/Magazines/Bulletin/Bull492/49204734548.html>

<http://www.iaea.org/Publications/Magazines/Bulletin/Bull541/54104711616.pdf>

<http://www.iaea.org/newscenter/focus/actionplan/reports/actionplann130911.pdf>

<http://www.businessinsider.com/countries-generating-the-most-nuclear-energy-2014-3?op=1>

Conference information

All preparation materials and the Rules of Procedure are available on the homepage¹⁰ ("Committees-Topic-Team" section). Each participant has to prepare individually for the country he/she is representing (libraries, internet, embassies, media) and send in a one page Position Paper to the Chairs prior to the conference, since the Preparation-Paper is only a general outline.

Position papers:

A Position Paper is a brief outline of a country's policy and interests concerning the topic at hand. It should contain a clear statement of the country's position on the topic and the reason behind it, and it should suggest a plan of action concerning the problem under consideration. The Position Paper should be a product of the delegate's own research and should be written concise and up to the point. Ideally a Position Paper is 1 to 2 pages (A4) long. The font type should be Arial, with a font size of 11 pt, single line spacing.

Note that the below mentioned structure is only one way of writing Position Papers and is meant to guide the delegate's of VIMUN in their writing process.

At the beginning of your Position Paper you should state the following: Committee, Country, Issue.

In the first part of your Position Paper you should briefly specify the issue of your Committee:

- Why is this issue relevant? What is the scope of the problem? You can name statistics, the major players or the current developments concerning the issue under discussion.
- You can also mention the UN action that has been taken in this respect already. Which resolutions have been passed so far? Which conferences have been held? What is planned for the future?

In the second and most important part you should specify the official position of the country/organization you represent in respect to the issue under consideration:

- What is your country's/organization's policy on the topic? Why? What issues in this area are particularly relevant to the country / organization you represent? What action has your country / organization taken already?
- What are the possible solutions to the problems in this area? What is the type of resolution your country / organization tries to accomplish?

Remember that you have to represent the position of your country/organization in the Committee. Therefore you should not write or speak in the first person ("I"), but with the voice of the country you represent (for example: "Algeria suggests...", "Germany proposes..."). You may offer your own ideas for a solution of the problem, but always make sure that this ideas do not contradict with the policies of the country you represent.

¹⁰ <http://afa.at/vimun/vimuncommittees2014.htm>

The deadline for the position papers will be 23 July!

Contact details:

Chairs can be contacted via the following e-mail address: iaea.vimun@afa.at