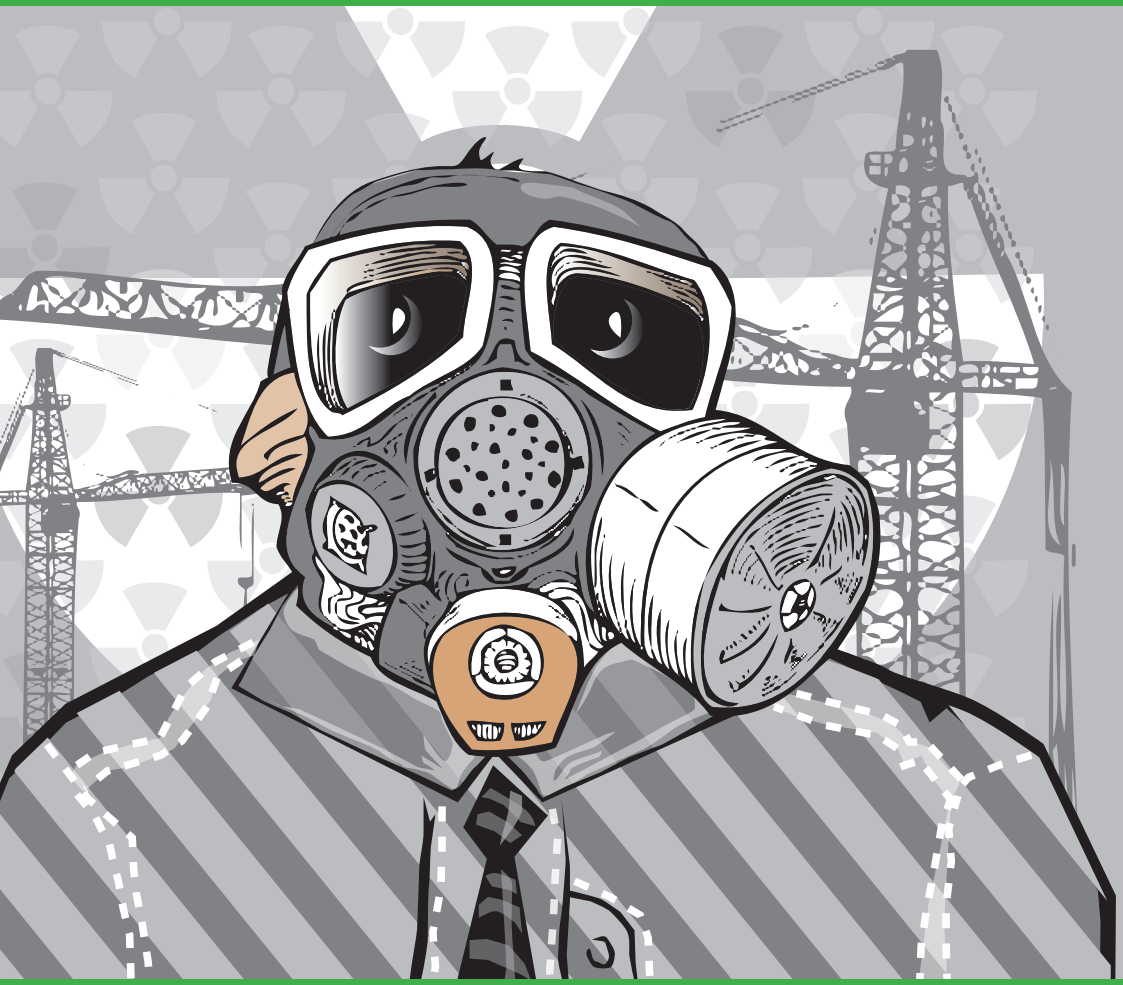
APPLICATION OF THE ESPOO CONVENTION TO NUCLEAR ENERGY-RELATED ACTIVITIES:

current practice and recommendations for a unified approach



Brochure

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This brochure was prepared by:

Andriy Martynyuk (Chapter 1, 2, 6)
Catalina Radulescu (Chapter 3)
Iryna Holovko (Chapter 5, 6)
Oksana Maiboroda (Chapter 1, 2, 6)
Jan Haverkamp (Chapter 4)

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Contact information:

Andriy Martynyuk, Chair of the Board
Oksana Maiboroda, legal counsel
The City Youth Civil Society Organisation “Ecoclub”
tel./fax.: +38 0362 26 78 91
office@ecoclubrivne.org
Petra Mogyly str. 28, office 35, Rivne, 33001, Ukraine
www.ecoclubrivne.org

Radulescu Catalina
Attorney at Law
catalina.radulescu@gmai.com
tel.: +40 74 513 81 65

Jan Haverkamp
Greenpeace expert consultant on nuclear energy and energy policy
jan.haverkamp@greenpeace.org
tel.: +48 534 236 502

Iryna Holovko
National campaigner for Ukraine
CEE Bankwatch Network
National Ecological Centre of Ukraine (NECU)
iryna@bankwatch.org
tel.:+380 44 353 78 42
www.bankwatch.org
www.necu.org.ua

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Introduction

"The Espoo Convention sets out the obligations of Parties to assess the environmental impact of certain activities at an early stage of planning. It also lays down the general obligation of States to notify and consult each other on all major projects under consideration that are likely to have a significant adverse environmental impact across boundaries."

"Radiation respects no borders."

Nuclear energy is the most notorious industry in causing severe environmental and health impacts not only within one country but far beyond borders. The lives of hundreds of thousands of people were ruined by the nuclear catastrophes at Chernobyl and Fukushima, with radioactive contamination from Chernobyl having been detected across western Europe, and that from Fukushima reaching offshore of Canada in the North Pacific.

The application of the procedures of the Espoo Convention allows the public and authorities from potentially affected parties to be informed and consulted prior to final decision-making on any nuclear project/program, It thus provides them with the opportunity to protect their right to a safe environment and increases the chances for more thoughtful decisions on nuclear projects that take into account the interests too of people living on the other side of state borders.

The nuclear energy sector has certain specifics such as high costs, technical complexity, the "high cost of a mistake", long-term consequences as well as the existence of a variety of decision-making procedures depending on country and on the type of nuclear energy-related project. All of these variables have led to very diverse practice in the application of Espoo Convention procedures to projects in the nuclear domain. Indeed, to date, there is no consensus between countries on many key aspects of Espoo Convention application to nuclear energy-related projects,

such as:

- Should the country involved inform and consult only neighbouring states or all the parties?
- Which nuclear-energy related activities, and under which conditions, should be subject to Espoo?
- Should decisions on the extension of a nuclear reactor's lifetime beyond the design period require the application of Espoo procedures?
- How can an integrated approach to decision-making in the nuclear domain be ensured if the country, despite being a party to the Espoo Convention, has not ratified the SEA Protocol?

The lack of both common understanding of the Espoo Convention's applicability and consensus on the practical aspects of its application in particular have resulted in a formal complaint being lodged with the Convention's Implementation Committee (by Lithuania with respect to the Belorussian NPP), as well as a number of other information submissions provided to the Committee from other sources (such as NGOs and members of parliament) regarding planned construction of new nuclear units in Belarus and the UK, as well as the extension of the lifetime of nuclear units in Ukraine, and the nuclear waste repository in Romania.

In recent years non-governmental organisations and politicians have recognised the Espoo Convention as a tool to address citizens' concerns with nuclear projects across borders and with the poor (or non-existent) implementation of environmental impact assessments for such projects even within country of origin – thus the number of disputes could be expected to grow. International financial institutions (IFIs) such as the European Bank for Reconstruction and Development are committed to bring international standards together with the money they provide for projects, and are requiring their beneficiaries in the nuclear sector to comply with both the Aarhus Convention and the Espoo Convention – which is highly important and welcomed.

Therefore more clarity on the practical aspects of application from the Espoo Convention's bodies would help to ensure the due and proper fulfillment of the requirements of the Espoo Convention, and help lead to its ultimate aims being achieved.

This report presents five cases describing the practice of Espoo Convention application in the cases of:

- New nuclear units construction (Ukraine),
- The extension of the lifetime of old nuclear units (Ukraine),

- Nuclear waste repository construction (Romania) and,
- Strategic environmental assessments for the Polish Nuclear Energy Program and the Ukraine nuclear power plants safety upgrade program.

Based on the experiences from these cases, a number of practical recommendations are presented to feed into the process of preparing good practice recommendations to support the application of the Espoo Convention to nuclear energy-related activities.

Chapter 1. New nuclear units construction

Case 1. The construction of units 3 and 4 at Khmelnytska Nuclear Power Plant (NPP) in Ukraine

The Khmelnytska NPP is located in Netishyn, Khmelnytska Oblast, approximately 150 kilometres from the borders with Moldova and Romania, and approximately 350 kilometres from the border with Belarus.

Khmelnytska NPP has two units that are operated by Energoatom, the state enterprise operating all NPPs in Ukraine. The NPP was planned for four power units. In the 1980s, the construction of units 3 and 4 started and concrete structures have already been built. After the Chernobyl nuclear accident in 1986 a moratorium was imposed on nuclear energy projects in Ukraine. Units 3 and 4 at Khmelnytska were thus not completed then, however construction was not mothballed[1].

In 2005 the construction process for units 3 and 4 at Khmelnytska NPP (KhNPP 3,4) was resumed under the Ukrainian government decision No.281-p. In 2009 the government took the decision to use the WWER-1000/B-392 reactor type. In 2010 Ukraine signed an agreement with the Russian Federation that specifies the conditions for construction of KhNPP 3,4, including reactor type, fuel, conditions for Russian loan provisions etc.

In spring 2011, the non-technical summary of the feasibility study for KhNPP 3,4 construction[2] and draft EIA documentation were presented to the public, and public consultations were carried out in the form of public hearings in 14 towns close to the NPP.

According to Ukrainian law[3], a decision to locate, design and construct nuclear units should be taken by the Parliament of Ukraine in the form of a Ukrainian law. The law should specify the location of nuclear reactors, the type, the amount and the general characteristics of the reactors – these are the major parameters of environmental importance of the project. Thus the law has all the elements of final decision in the meaning of the Espoo Convention.

1 On 13 March 2012, Collegium of the State Nuclear Regulatory Inspectorate of Ukraine adopted positive Resolution №7 concerning the results of the state assessment on nuclear and radiation safety of the Feasibility Study on completion of KhNPP 3,4. However, according to the conclusion, building nuclear units 3 and 4 at KhNPP are accepted with some conditions, and within the decision on the placement, design and construction of KhNPP 3,4, the probability that the use of existing building constructions could be impossible is one such condition. (see the Conclusion, in Ukrainian: http://www.snrc.gov.ua/nuclear/doccatalog/document;jsessionid=636BAB8B62B166EF3091EBC626E7BA42.app2?id=180042)

2 The so-called "Information and Analytical Survey of the Materials Khmelnytska NPP. Feasibility Study of Power Units 3,4 Construction (IAS)".

3 According to the Law of Ukraine "On Decision-Making Procedure for Locating, Designing, and Construction of Nuclear Reactors and Installations for Processing Radioactive Waste of National Importance" 2861-IV of 8 September 2005.

In the notification about the planned KhNPP 3,4 construction prepared by Energoatom in 2011, neighbouring states were informed about the process of approval of a planned activity, in particular (as mentioned above) the adoption of a law on locating, designing and construction of nuclear units by the Parliament of Ukraine. The respective draft law should be accompanied by a feasibility study, including EIA, a state ecological expertise conclusion, and a report on measures to inform neighbouring states about the possible impact in a transboundary context.

Instead of a state ecological expertise conclusion, however, the respective draft law for KhNPP 3,4 from August 16, 2012 was accompanied by an expert statement by a scientific institution which in no circumstances can substitute for or replace a conclusion of the state ecological expertise. The above-mentioned law has the requirement to prepare a report on measures to inform neighbouring states about possible impact in a transboundary context (hereinafter – report on informing neighbouring states). However, there are no requirements under national legislation on the content and the procedures of preparing such a report. Energoatom was recommended to prepare it in accordance with the Espoo Convention provisions.

Since 2011, Energoatom has prepared two reports on informing neighbouring states. The first report (completed at the end of 2011) was submitted to the Ukrainian parliament to accompany a draft law for KhNPP 3,4. It included information on notification and exchange of information with neighbouring states. Other procedures, for example public participation and consultations with affected parties, were not mentioned as they had not been finalised by that time.

In the report, Energoatom concluded that all legal requirements on informing affected countries were carried out properly. Further, that construction of KhNPP 3,4, in accordance with the Feasibility Study, has no real or potential transboundary impacts on the environment or the populations of all neighbouring states[4].

On September 6, 2012, before completion of all the Espoo Convention procedures, the Parliament of Ukraine adopted Law No. 5217-VI on “Locating, designing and construction of power units 3 and 4 at Khmelnytska NPP”. After adoption of the law, Energoatom changed its position concerning what is a final decision and continued with the Espoo Convention procedures[5]. The second report (published at the end of 2013) included information on consultations carried out in 2013 and information exchange in 2012. In the report, Energoatom concluded that all the provisions of the Espoo Convention had been complied with[6].

4 The first report on informing neighbouring states: http://energoatom.kiev.ua/files/file/Zvit_Hmelnickoyi_AES.pdf

5 Now, according to Energoatom, a law on locating, designing and construction of nuclear units is not a final decision as the building of nuclear units has three stages: 1) Feasibility Study, that includes EIA – the stage is finished with adoption of the law, 2) Design with its assessment – the stage is finished with approval by the Cabinet of Ministers of Ukraine, 3) Licensing. After adoption of the Law on “Locating, designing and construction of power units 3 and 4 at Khmelnytska NPP”, Energoatom continued with the Espoo Convention procedures and is suppose to include its outcomes at the Design stage.

6 The second report on informing neighbouring states: http://goo.gl/HndK8r

Here is a short description of the main steps in the process of carrying out the Espoo Convention procedures:

In January 2011 Ukraine sent official notifications to neighbouring countries in order to carry out necessary procedures under the Espoo Convention. All countries (Belarus, Moldova, Poland, Romania, Slovak Republic and Hungary), with the exception of Russia, responded and expressed an interest to participate in the procedures under the Espoo Convention, and also requested further information about the project and clarifications on the procedure. Austria, subsequently, also asked for notification and joined the process.

At the end of June 2011, Ukraine sent official letters to Belarus, Moldova, Poland, Romania, Slovak Republic and Hungary with information about the proposed activity, that included the "Information and Analytical Survey of the Materials Khmelnytska NPP. Feasibility Study of Power Units 3,4 Construction (IAS)" in Russian and a link on the draft EIA documentation (also in Russian). Ukraine also set a deadline for any comments and proposals: August 31, 2011. However, all affected parties were of the opinion that the process would continue until the consultations on final EIA documentation are being carried out, but Ukraine stopped consultations after the deadline – notably, the comments and proposals of the affected counties were not dealt with.

A public participation procedure on the proposed activity for the public of the affected parties was not provided by Ukraine. For example, **on May 14 2011, the non-governmental organisation (NGO) 'Ecohome', from Belarus, sent a letter to the Ministry of Ecology and Natural Resources of Ukraine requesting public hearings in Belarus**[7]. Nevertheless, such public hearings were not carried out. The only possibility for making comments or objections was through participation in public consultations carried out by Energoatom in Ukraine in spring 2011. Yet the affected parties only received information about the planned activity in June 2011.

On 31 July 2012, according to Austria, which joined the process a bit later in 2011, two documents in English were received: "Information and Analytical Survey of the Materials Khmelnytska NPP. Feasibility Study of Power Units 3,4 Construction (IAS)" and "Khmelnytska NPP Feasibility Study of Power Units 3,4 Construction, Volume 13 Environmental Impact Assessment Report (OVOS), part 14 Assessment of the transboundary transfer consequences under normal and emergency conditions." Trying to get access to the full and final EIA documentation, Austria asked Ukraine in a letter of 6 August 2012 to submit the full EIA report. Finally, a link which referred to the full EIA report was sent by Ukraine on 17 September 2012 in Russian by e-mail, 11 days after the final decision (adoption of Law No. 5217-VI) had been made. Ukraine

7 http://www.rac.org.ua/fileadmin/user_upload/documents/compliance/Espoo/KhNPP/Supporting_Information_Kh3_4__UA_.pdf

explained in the e-mail that the IAS was considered to be full EIA documentation according to Article 4 of the Espoo Convention[8].

In November 2012, the NGO Ecohome submitted information to the Espoo Convention Implementation Committee (EIA/IC/INFO/10) arguing that Ukraine violated Article 2.3, Article 2.6, Article 3.5, Article 3.8, Article 4.2, Article 5 and Article 6 of the Espoo Convention, by taking the decision to authorise construction of two nuclear reactors at Khmelnytska NPP prior to completing applicable procedures under the Espoo Convention.

The Committee's information gathering process and the pressure from affected parties and the public played an important role in the resumption of consultations. **In March 2013, Ukraine sent official letters to affected parties inviting to carry out consultations under Article 5** of the Espoo Convention.

In August and September 2013 one-day consultations with Austria, Poland and Hungary were organised. According to Austria, during the consultations Ukraine promised to provide written answers on questions and minutes of expert consultations in English until 25 October 2013 and, moreover, Austria asked Ukraine to organise a two-day consultation as it was more reasonable. Consultations with Moldova and the Slovak Republic were carried out in the form of mailing.

Currently, Energoatom, according to the second report on informing neighbouring states, insists that transboundary consultations were concluded at the end of 2013. However, according to Austria and the thirtieth session of the Implementation Committee (February 2014), consultations had not been concluded yet, for example Austria has neither received the answers to the questions in English nor the minutes in Ukrainian or English[9].

Ukraine, supporting Energoatom's position, explained to the Committee and affected parties that the final decision according to Article 6 of the Espoo Convention has not been made yet. The final decision will be a decision made by the Cabinet of Ministers of Ukraine, which approves the Design of the units. In that regard, the Committee at its thirtieth session in February 2014 considered that the Law of Ukraine 2861-IV of 8 September 2005 provided clear authority to the parliament to take the final decision with regard to the planned activity. The Committee expects that Ukraine will finalise the ongoing transboundary public participation and consultation procedures with all affected parties, in accordance with Article 3, paragraph 8, and Article 5, of the Convention, respectively; and adopt the final decision in compliance with Article 6 of the Convention. The Committee agreed that it would continue its consideration of

8 http://www.unece.org/fileadmin/DAM/env/eia/documents/ImplementationCommittee/eia.ic.info/eia.ic.info.10_Ukraine/FrAustria7.11.2013.pdf

9 http://www.unece.org/fileadmin/DAM/env/eia/documents/ImplementationCommittee/eia.ic.info/eia.ic.info.10_Ukraine/fr_Austria_Info10_3_Feb_14.pdf

the matter and asked Ukraine to provide clarifications and additional information[10].

Energoatom, during the consultations, promised to provide the affected countries, along with the decision approving the design of KhNPP 3,4, information related to consideration of comments received from affected parties.

Conclusions

The transboundary consultation under the Espoo Convention in the case of KhNPP 3,4 nuclear power units construction has been carried out in violation of the Convention's requirements.

Ukraine failed to implement a number of obligations under the Espoo Convention by not allowing sufficient timeframes for organising public consultations, by not holding consultations under Article 5 before taking a final decision, by not providing proper conditions to comment on the proposed activity for the public in the affected countries, and by not transmitting final EIA documentation in line with the Convention's requirements. There is also suspicion of a violation of the general obligation under Article 2.2 of the Espoo Convention.

The law on locating, designing and construction of KhNPP nuclear units 3 and 4 was adopted before completion of the Espoo Convention procedures. Ukraine has changed its position on what constitutes a final decision after the transboundary procedures had already started. Equal conditions for public participation in the country of origin and in affected states were not provided.

A lack of formally outlined procedures for organising transboundary consultations and an unclear division of responsibilities between involved national authorities led to a very inefficient coordination between them, as well as miscommunication with affected countries.

The adoption of clear legal requirements for a transboundary EIA procedure for nuclear energy-related projects will prevent ambiguous understanding regarding the scope of the EIA documentation, the scope of the environmental assessment (e.g. severe accidents), the role of responsible authorities and the proponent (operator) in the process. In addition, it will help to deal with translation issues, and time planning.

Ukraine now declares the implementation of steps to perform all of the Espoo Convention procedures concerning the planned activity on KhNPP 3,4. As taking into account the results of transboundary procedures is possible only at the design stage, Ukraine should urgently adopt a legally binding procedure in the form of a Cabinet of Ministers' decree that would define a procedure for taking into account the results of transboundary consultations in accordance with Article 6 of the Espoo Convention, and prevent possible violations of the Convention on the proposed

10 http://www.unece.org/fileadmin/DAM/env/documents/2014/EIA/IC/ece.mp.eia.ic.2014.2_advance_edited.pdf

activity of construction of KhNPP 3,4.

The Committee's information gathering process and pressure from affected parties and the public played an important role in a resumption of the Espoo Convention procedures for KhNPP 3,4. It seems that affected countries that are more experienced in applying the Espoo Convention helped Ukraine significantly to comply with the Espoo Convention procedures. It is welcomed that procedures were continued and affected parties got an opportunity to take part in consultations.

As the case with KhNPP 3,4 is still in process there is a hope that all procedures will be provided as much as it is possible in view of the recognised failures at earlier stages of the process. To ensure this, the Committee as well as potentially affected parties should continue following the case and provide clear and constructive advice to the Ukrainian government, and also draw lessons and form recommendations which would ensure the avoidance of such situations in the future.

Case 2. Planned lifetime extension (PLEX) of two nuclear units at the Rivne Nuclear Power Plant (NPP) in Ukraine

The Rivne NPP is located in Kuznetsovsk, Rivne Oblast, Ukraine. The NPP has four units that are operated by Energoatom, the state enterprise operating all NPPs in Ukraine. The first two nuclear units at Rivne NPP are the oldest in Ukraine, having been put into operation in 1980 and 1981.

In 2004 Ukraine initiated a special program to review and extend the lifetime of certain nuclear units and the Cabinet of Ministers adopted the "Complex Program of Works to Extend [the] Operation Lifetime of Existing Nuclear Unit of Nuclear Power Plants". The Complex Program refers to 30 years as the designed lifetime of the nuclear units in Ukraine. The program specifically mentions and addresses three nuclear units: the 1st and 2nd at Rivne NPP and the 1st at South Ukrainian NPP.

According to national legislation applicable after legal amendments in 2009, "Decisions on lifetime extension of the existing nuclear installations … is taken by the state regulatory body for nuclear and radiation safety [State Nuclear Regulatory Inspectorate of Ukraine], on the basis of a conclusion of the state nuclear and radiation safety expert review, introducing changes to the license for operation of a nuclear facility or installation of national importance."[1] The legal amendment of 2009 also cancelled the demand for carrying out a feasibility study, including EIA and public participation procedures, in the case of lifetime extension of existing nuclear installations.

On 10 December 2010, the Board of the State Nuclear Regulatory Inspectorate of Ukraine (SNRIU) took the final decision on extending the lifetime of nuclear units 1 and 2 of the Rivne NPP by 20 years and issued a new license (EO No000943 from 10.12.2010)[2].

This final decision was issued based on the periodic safety review and its expertise (hereinafter "PSR"). PSR is a document that justifies the safety of nuclear installations. The PSR includes a section on environmental assessment, which concluded that the unit's over-design operation is possible without negative environmental impact. However, the objectives and scope of the PSR are different from the objectives of the EIA documentation. For example, neither reasonable alternatives to the proposed

1 According to the Law of Ukraine "On Decision-Making Procedure for Locating, Designing, and Construction of Nuclear Reactors and Installations for Processing Radioactive Waste of National Importance" 2861-IV of 8 September 2005.

2 The previous license EO No000196 from 01.09.2004 included units 1-3 of the Rivne NPP. When extending the lifetime of nuclear units 1 and 2 of the Rivne NPP a new license was issued for these units.

activity nor a description of all other impacts besides radioactive releases from normal operation were analysed within the scope of the PSR report.

On 20 April 2011, a Ukrainian non-governmental organisation (NGO) Ecoclub provided information to the Espoo Convention Implementation Committee (hereinafter "Committee") alleging that Ukraine is in violation of the Espoo Convention by not applying the provisions of the Convention to the decision-making procedure related to the nuclear units lifetime extension.

At its twenty-first session (June 2011), the Committee began its consideration of the information provided and, at its twenty-seventh session (March 2013), the Committee decided to begin a Committee initiative in relation to the extension of the Rivne NPP. In the context of its initiative, the Committee examined the relevant provision of article 1 item (v) of the Convention, which defines a "proposed activity" as "any activity or any major change to an activity subject to a decision of a competent authority in accordance with an applicable national procedure" in conjunction with Appendix I, as well as other relevant provisions of the Convention.

At its thirtieth session (February 2014), the Committee finalised its findings and recommendations further to the Committee initiative and recommended to the Meeting of the Parties to endorse that Ukraine is in non-compliance with its obligations under article 2, paragraphs 2 and 3, and article 4, paragraph 1; and articles 3 and 6, with respect to the extension of lifetime for units 1 and 2 of the Rivne NPP[3].

The Committee's conclusions confirm that the lifetime extension of a nuclear unit is a major change to an activity (even in the absence of any works) and should be subject to an EIA and transboundary procedures. It confirms Ukraine did not take any steps to fulfill transboundary procedures when taking the decision to extend the lifetime of the nuclear units at Rivne NPP, namely:

1) Ukraine did not notify any possibly affected country, including Belarus and Poland as the closest to the Rivne NPP location, about the proposed activity.

2) Despite the conducted PSR including an environmental assessment, it has not been found sufficient to substitute EIA documentation. EIA documentation was not prepared.

3) Public participation procedures were not carried out.

4) The final decision had no elements required under the Espoo Convention and were not brought to the attention of the affected parties.

The Committee's conclusion also requests Ukraine "to amend its legislation to provide for the application of the Convention in similar cases of lifetime extension for nuclear installations".

3 http://www.unece.org/fileadmin/DAM/env/documents/2014/EIA/IC/ece.mp.eia.ic.2014.2_advance_edited.pdf

Meanwhile, in November 2013, the SNRIU took a decision to extend the lifetime of another nuclear unit for 10 years beyond its technical design lifetime – the South Ukrainian NPP unit 1. The national decision-making procedure on the extension of nuclear units has not been amended since 2010, and consequently no domestic or transboundary EIA procedure has been carried out in this case either[4].

However, under public pressure, and in view of the Committee's initiative in the Rivne NPP case, domestic public participation was organised by Energoatom to ensure compliance with the Aarhus Convention when preparing the decision to extend the South Ukrainian NPP unit 1.

Public hearings in several towns within the 30 kilometre zone around South Ukrainian NPP were conducted in November 2012 and later in October 2013. Besides PSR, a set of documents and materials on the assessment of environmental impacts was also compiled and presented to the public. In the only document available in English – the so-called Explanatory Note to the Environmental Impact Evaluation – Energoatom briefly concluded that detailed informing and consultations with neighbouring countries were not needed in this case[5].

These public consultations allowed public and independent experts to scrutinize PSR and other documents relevant to safety, and to identify and bring to the attention of SNRIU numerous alarming shortcomings that South Ukrainian NPP unit 1 is not ready for safe operations. Some 54 safety upgrade measures, including those crucial for ensuring safety in the case of emergency situations, were either not completed or there was no information on the status of their completion in the final PSR report disclosed to the public (see details in Annex 1 Briefing "South Ukrainian nuclear power plant – not ready for safe operation in over-design period").

One of the major concerns raised was the fact that the number of allowed cycles of 'Planned cool down' to the 'cold state' at South Ukrainian NPP unit 1 had been already exceeded (91 versus 90 allowed). During planned 'cool downs' the reactor material experiences maximum stress and 'ageing' occurs. In emergency cases, emergency cool down takes place which accelerates ageing processes and decreases the operational life of the reactor. Thus when the limit for 'cool downs' is reached (when there are many planned or emergency cool downs) cracks in the core reactor can appear. The reactor core is one of the few pieces of nuclear equipment that cannot be replaced.

Conclusion

An environmental impact assessment and public participation are necessary elements of the decision-making procedure surrounding the lifetime extension of

4 http://www.snrc.gov.ua/nuclear/en/publish/article/234267
5 http://www.sunpp.mk.ua/sites/default/files/life-time-extention-docs/explanatory_note.pdf

nuclear units. This has been confirmed by the Espoo Convention Implementation Committee in its finding further to the Committee initiative with respect to the lifetime extension of Rivne NPP unit 1 and 2.

Ukraine did not carry out any transboundary procedures when taking the decision to extend the lifetime of the nuclear units at the Rivne NPP. Ukraine is recognised to be in non-compliance with its obligations under the Espoo Convention in the frame of the Espoo Convention Implementation Committee's initiative.

Ukraine should take the necessary legal, administrative or other measures to implement the provisions of the Espoo Convention with respect to the extension of the lifetime of nuclear units. It will prevent more such decisions occurring without environmental impact assessments and without consultations with potentially affected public in neighbouring states.

Without carrying out the EIA procedure, Ukraine, as well as any other states operating nuclear power plants, cannot exclude a significant adverse transboundary impact from the lifetime extension of its nuclear units. In the light of nuclear accidents, even if there is a low likelihood of a significant adverse transboundary impact, a transboundary EIA should be prepared and all potentially affected parties (not only neighbouring states) should be notified and consulted.

The extension of the lifetime of a nuclear power plant is to be considered activity under article 1 paragraph (v) of the Convention, and is consequently subject to the provisions of the Convention, and this also includes start-ups permissions after a periodic safety review (PSR). This Convention requirement should be fully applicable too in countries with unlimited operational licences for nuclear power plants, thus making transboundary procedures mandatory for all cases of lifetime extensions of a nuclear power plant regardless of the type of national permitting system.

Chapter 3. Nuclear wastes repository construction

Case 3. Low and Medium Nuclear Radioactive Waste Repository in Romania

The National Commission for the Control of Nuclear Activities from Romania, issued in favour of The Nuclear Agency and for Radioactive Waste, a governmental agency and indirectly in favour of SC Nuclearelectrica SA, a state owned company, a partial authorisation that established the place where the future Nuclear Repository is going to be constructed (the Cristian Hill, near to Saligny village), allowing the beneficiaries to: buy the land, realise the site plan, the feasibility study, technical project, the strategy and the methodology of managing the waste, and the admissibility criteria of accepting nuclear waste.

Practically the entire SEA and EIA procedure would have been left without a real object. After establishing the location of the repository, after the beneficiary of the project bought the land, etc, the EIA and SEA procedure would have been ineffective since it would have been impossible to change the documentation already finalised and change the location of the repository. Absolutely no public consultation procedure was applied when the partial authorisation was issued which in fact was final regarding the location of the repository. No SEA or EIA procedure was started, the authorities claiming that the EIA would commence only after all technical details (such as the feasibility study, the technical project, the site plan, etc) were set.

The case was raised by Center for Legal Resources and Greenpeace Romania.

Before the partial authorisation was issued, no public consultation was organised at national level or with the neighbouring countries.

The repository's location was set at 33 kilometres from the Bulgarian border. The likely significant transboundary impacts related to transportation of nuclear radioactive waste, possible pollution of groundwater and all related consequences, possible pollution of air, possible effects of accidents as a result of the normal operation of the repository, possible effects of an accident produced by an earthquake or floods.

Center for Legal Resources Foundation and Greenpeace Romania submitted a case in court against this partial authorisation. The annulment case started in July 2010 and the injunctive relief in May 2010. The partial authorisation was issued on 21.02.2010 by the National Commission for the Control of Nuclear Activities.

The first court (the Romanian Court of Appeal) rejected both the injunctive relief and the annulment case. The NGOs appealed the decisions and won the injunctive relief

in January 2012[1]. In June 2012, Romania's High Court of Justice and Cassation decided to annul the partial authorisation based on the NGO arguments – the act can not be issued without respect to article 6 of the Aarhus Convention and without environmental agreement being previously obtained by the beneficiary.

The court found that the National Commission for the Control of Nuclear Activities, that issued the partial authorisation, and the beneficiary of the act, The Nuclear Agency and for Radioactive Waste, failed to comply with the relevant national and international legislation regarding public consultation in environmental matters (Aarhus Convention, Espoo Convention together with the national legislation implementing these conventions).

Together with the cases in national courts, Center for Legal Resources and Greenpeace Romania also sent information for the attention of Implementation Committee, Convention on Environmental Impact Assessment in a Transboundary Context for violation of articles 2.4, 2.6, 2.7, 2.11, 3.1, 3.2, 3.7, 3.8 and 4 of the Espoo Convention and of the SEA Protocol[2].

The information sent to the Implementation Committee was effective, as the Committee submitted several questions regarding the construction of the repository and the way in which the partial authorisation had been issued. The Romanian government had to answer difficult questions and to inform the Committee when the authorisation was cancelled, therefore to admit that it was illegal.

The fact that the case of the repository became public and was under the examination of the Implementation Committee helped in the building of a strong case in court, that eventually led to the annulment of the partial authorisation. The court and civil society in general became aware of the importance of the Espoo Convention and the fact that any suspicion of violation of the Espoo Convention is carefully analysed and assessed by the Implementation Committee, unlike with certain other conventions that lack such a control system and that can be easily violated by some members in certain cases.

Recommendations

If the cases had not been won in the national court, the lack of communication between the Committee and NGOs that informed the Committee about the project would have been jeopardised as the only arguments to be heard would have been those of the Romanian government that made several interpretations of the national law that are not legally correct and were misleading for the Implementation Committee.

1 Court Decision 106/13.01.2012 of The High Court of Cassation and Justice, granting the injunctive relief, case no 4803/2/2010

2 Implementation Committee information gathering process regarding the proposed construction of a low- and medium-level radioactive waste repository in Romania http://www.unece.org/env/eia/implementation/eia_ic_info_8.html

In this context, and based on the experience in this case, closer collaboration between the Implementation Committee and those that are informing the Committee regarding possible violations of the Espoo Convention and its protocol would be helpful.

Chapter 4. Strategic Environmental Assessment (SEA) for country-wide nuclear energy strategy

Case 4. Polish Nuclear Energy Programme

One of the first transboundary strategic environmental assessments (SEAs) of an energy policy was that conducted on Poland's nuclear energy strategy, which was finally approved in February 2014. This SEA commenced in 2010. Because it was among the first procedures of its kind, there are some vital lessons to be learnt from it.

On 24 April 2014, Greenpeace Poland launched a legal complaint against the adoption of the Polish Nuclear Energy Programme based on the fact that public participation had not been taken into due account. The complaint is based on the Aarhus Convention and the Kiev Protocol to the Espoo Convention as well as on Polish law. The complaint focuses on the lack of comparison with reasonable alternatives, the lack of assessment of the effects of a large beyond design accident and the lack of inclusion of a sufficient assessment of the environmental impacts of produced radioactive waste, including spent nuclear fuel. The complaint was addressed to the Prime Minister, who has 30 days to react. If the complaint is dismissed, Greenpeace Poland will seek justice in the Administrative Court.

The strengths of the assessment included the following:

- It eventually included an 'appropriate' (Kiev Protocol[1] and SEA Directive) and 'reasonable' (Aarhus Convention) timeframe for the public to respond to the approximately 1,500 pages of documentation: an initial three-week period was extended to three months, with another six weeks added after a new potential nuclear power plant location was added during the course of the procedure.
- The notification of the transboundary procedure was disseminated to all countries that could be environmentally affected by this strategy, including all EU member states as well as Belarus, Russia, Ukraine and Switzerland. The widespread interest in the proposed policy – with responses received from Slovakia, the Czech Republic, Lithuania, Finland, Sweden, Denmark, Germany, Austria and Luxembourg – showed that such a nuclear energy strategy is indeed perceived to have a wide impact.

1 The UNECE Protocol on Strategic Environmental Assessment to the Convention on Environmental Impact Assessment in a Transboundary Context done in Kiev on 21 May 2003 (short: the the Kiev Protocol) was ratified by Poland on 16 June 2001.

The procedure also highlighted several issues that need to be addressed in the future:

- An inadequate initial interpretation of Polish law led at the start to an inappropriate and unreasonably short timeframe for public consultation of only three weeks, including a public holiday.
- There was no possibility for the public to express its views other than in writing – there were no public hearings or other forms of person-to-person public consultation. After written public input is taken into due account in a draft text, it would be advisable to have some form of facilitated discourse about the impact of the public's views.
- An English translation of all documentation was available in the transboundary procedure, but not in the national procedure. The fact that the text was available in Polish only seriously handicapped people in the country with limited understanding of Polish, including expatriates working for foreign firms and recent immigrants. The availability of at least an English text alongside the national one would improve this situation. The same English text could also be used for the transboundary procedure.
- The SEA report that formed, with the Polish Nuclear Energy Programme, the basis for the public consultation was based on an outdated and ineffective perception of what an EIA (as opposed to an SEA) report should look like. The form of these reports needs updating in order to make them more accessible to the public and enable effective public discourse that can lead to better decision-making.
- The first official response to the public submissions reacting on the documentation (programme, SEA report and its annexes) took the form (nowadays universally adopted but nevertheless unacceptable) of an SEA report annexed spreadsheet summarising all the submissions along with – mostly dismissive – comments from the consultant who had written the SEA report. This was not 'taking into due account', but rather a defensive reaction. The submissions from non-Polish participants had not been published at the moment of adoption of the Programme by the Council of Ministers, nor the official reactions to that.

Chapter 5. Role of European financing in promoting the application of the Espoo Convention

Case 5. The role of European financing in promoting the application of the Espoo Convention in nuclear-energy related activities: experience from Ukraine.

Public financial institutions, including the EBRD and the European Commission's EURATOM facility, that support nuclear energy-related projects are obliged to act in line with the principles of international law on access to environmental information and participation in decision-making on issues that may have negative transboundary impacts on the environment, such as the Aarhus and Espoo Conventions.

Beneficiaries of such financial support are also expected to adhere to both conventions, thus promoting the effective application of these conventions in countries that have yet to ratify or who do not properly implement them. However, only a limited positive effect has been seen in Ukraine due in part to a lack of transparency by the financial institutions and to the selective application of convention requirements. Public finance can play a role in ensuring nuclear safety and the transparency and accountability of government decisions related to nuclear energy by encouraging governments to fully apply Espoo procedures at earlier stages of the programme or plan and to provide more information about loan conditionalities.

The EBRD and the Commission can provide loans for safety improvements and the decommissioning of nuclear facilities, not for the construction of new units or the expansion of existing ones. However, in practice the safety upgrade programme in Ukraine[1] is actually an integral part of the lifetime extension plan for all existing units in the country[2], 12 of which are to reach the end of their designed lifetime by 2020.

The state-owned Energoatom, at the request of the EBRD, prepared a study called the "Ecological Assessment" (EA) of the planned safety improvement program taking into account the requirements of EU SEA Directive (Directive 2001/42/EC) and UNECE Strategic Environmental Assessment (SEA) Protocol"[3]. The EBRD refers to this study as "among the first SEA of its type in Ukraine, and the first for the nuclear sector"[4]. Ukraine has yet to ratify the SEA protocol to the Espoo Convention and does not have experience with its application, so the bank's insistence on the study, together with the

1 Ukraine nuclear power plant safety upgrade program with EUR 300 million approved by the EBRD Board in March 2013 and a parallel loan of the same size approved by the European Commission in June 2013

2 http://bankwatch.org/our-work/projects/nuclear-power-plant-safety-upgrades-ukraine

3 Ukraine NPP Safety Upgrade Program – Ecological Assessment Report – version 4.

4 The EBRD Project summary document (accessed on April 10th 2014) http://www.ebrd.com/pages/project/psd/2011/42086.shtml

dedicated technical assistance (TA), was a welcome initiative. The scope of the EA was specified in a specially designed standard[5] agreed between the project owner Energoatom, the EBRD and the Ministry of Ecology and Natural Resources of Ukraine and envisaged among other things an assessment of the possible transboundary impacts that could arise from the safety upgrade programme's implementation.

However, the positive effect of this exercise was reduced by the fact the study was not a full SEA but rather a 'good' EIA report.

The draft report overlooked the connection between the safety upgrade programme and the lifetime extension plan. This connection was acknowledged later in the final EA report after being pointed out by the public during consultations. However, assessment of the effects from the over-design of operations and an elaboration of «no life time extension» alternative was not provided thus reducing the «strategic» value of the report. Potential transboundary impacts (including from non-designed accidents) were elaborated briefly and were found to be negligible. While the two-stage public consultation process and the subsequent publication of a "questions and answers" report was welcome, little input from this process was actually reflected in the final EA report. Given that no SEA had been conducted at the time that the nuclear units lifetime extension plan was prepared, the SEA for the safety upgrade program could have at least belatedly enabled public participation and the assessment of alternatives to the lifetime extension option. However, as things stand, these are still missing.

The Commission meanwhile has promised to stipulate in the guarantee agreement between Ukraine and Euratom a number of conditions "including compliance with international environmental conventions such as Aarhus and Espoo"[6]. Publicly available translation of actual guarantee agreement suggests that this requirement has been formulated by the EC in more general terms: "compliance with all applicable legislation, including environmental legislation[7] which might lead to the Espoo Convention slipping from the attention of both the EC and the Ukrainian government. As for the EBRD, the bank sets "a number of specific commitments in ESAP regarding the Espoo and Aarhus conventions"[8]. Yet what these commitments are exactly remains unclear, because the environmental and social action plan for category B projects is not disclosed. The bank has also denied access to the part of the project's board document relevant to conditionality and transition impacts because it believes that it would potentially undermine the policy dialogue with the

5 СОУ НАЕК 004:2011 Standard Ecological Assessment of Nuclear power plants: general requirements of the assessment materials' structure and contents.

6 A reply from European Commission to an MEP's request dated 19.02.2014 http://www.europarl.europa.eu/sides/getAllAnswers.do?reference=E-2013-014393&language=FR

7 Official website of the Ukrainian Parliament – Law of Ukraine #0082 from 25.04.2014 http://w1.c1.rada.gov.ua/pls/zweb2/webproc4_1?pf3511=50791

8 Correspondence between the EBRD President and European NGOs – EBRD letter dated 13.05.2014.

government if the information was public[9].

Subsequently, the Espoo Implementation Committee ruled that Ukraine was not in compliance with "its obligations under article 2, paragraph 2, with respect to the general legal and administrative framework applicable in the decision-making for the extension of the lifetime for nuclear reactors." In theory this means that both the EBRD and the Commission should suspend disbursement until Ukraine amends its legislation to the satisfaction of the Espoo Convention Secretariat. By doing so the EBRD and the Commission would use their leverage to help establish an effective legislative framework for the implementation of the Espoo Convention in Ukraine.

Previous attempts by the Commission to encourage Ukraine to implement the Aarhus and Espoo Conventions included the provision of technical assistance[10] for the Ministry of Environment to assist with the development of necessary EIA legislation which, however, has not been adopted to date. By combining technical assistance support and strong transparent (i.e. disclosed to the public) conditionality attached to allocated funds, the Commission and the EBRD could increase their effectiveness and help Ukraine comply with its international obligations, thus effectively improving and unifying the decision-making practices for nuclear energy projects in Ukraine and Europe.

Recommendations

In its upcoming good practice guidance, Espoo Convention bodies should reflect the importance of the IFIs and the Commission for promoting the effective application of the Espoo Convention, including in non-EU countries where EU legislation may not be fully applicable. Binding requirements to fully comply with the Espoo Convention should be clearly stipulated in EBRD policies and country strategies, related bilateral memorandums and agreements, as well as attached to any loans for projects in the nuclear sector. These requirements should be disclosed to the public and accompanied by a set of publicly-available indicators that enable better oversight of these processes and increase the chances for timely implementation.

The practice of weakening requirements or limiting the scope for an SEA, referring to a country having yet to ratify the SEA Protocol, should be avoided by financiers as in this way the strategic component may not be effectively realised and the wrong message to authorities in beneficiary countries may be sent about the amount of flexibility that can be allowed in applying the provisions of the Espoo Convention.

9 Correspondence between the EBRD Office of the Secretary General and NECU dated 25 July 2013.

10 Support to Ukraine to implement the Espoo and Aarhus Conventions — follow-up activities.

Chapter 6. Summary of recommendations on application of Espoo procedures for nuclear energy-related activities

The widespread interest in nuclear energy-related projects and programs on the part of potentially affected countries (not only from neighbouring states) illustrates the importance of transboundary consultations for these type of projects and shows they are perceived as having a wide impact.

To achieve the proper application of the Espoo Convention, and to ensure more thoughtful decisions on projects in the nuclear sector, effective procedures for environmental impact assessments (EIAs) should be set under the national legislation of each Party to the Espoo Convention. It should be ensured that EIAs analyse all the possible negative impacts on the environment and human health from the proposed activity. In particular, these are long term radioactive waste and spent fuel management, decommissioned nuclear units, and the long-term effects of uranium mining, as well as comparison with reasonable alternatives.

In the case of countries where no EIA procedures are required by the national legislation, the ratification of the Espoo Convention provides legal grounds and fosters the development of necessary national procedures, thus promoting further the practice of EIA and consideration, transparency and inclusiveness of decision-making processes, and thus helps to increase overall nuclear safety.

The extension of the lifetime of a nuclear power plant is to be considered an activity under article 1 paragraph (v) of the Convention, and is consequently subject to the provisions of the Convention – this also includes start-up permissions after a periodic safety review (PSR). This Convention's requirement should be fully applicable also in countries with unlimited operational licences for nuclear power plants, thus making transboundary procedures mandatory for all cases of lifetime extensions of a nuclear power plant regardless of the type of national permitting system.

Without carrying out an EIA procedure it is impossible to exclude a significant adverse transboundary impact from the lifetime extension of nuclear units. In light of nuclear accidents, even if there is a low likelihood of a significant adverse transboundary impact, a transboundary EIA should be prepared and all potentially affected parties (not only neighbouring states) should be notified and consulted.

In the upcoming good practice guidance, Espoo Convention bodies could address the following:

- Reflect the importance of the IFIs and the European Commission for

promoting the effective application of the Espoo Convention, including in non-EU countries where EU legislation may not be fully applicable, and, where applicable, the role of financing decisions in the tiered decision-making on nuclear projects.

- Reiterate that for nuclear energy-related activities proper public participation procedures – that ensure a right to be informed and a right for the public of affected parties to express views – must be secured.
- Encourage governments to proactively seek public participation in transboundary processes. Concerned parties that do not have good experience in carrying out public participation procedures should refer to the Guidance on Public Participation in Environmental Impact Assessment in a Transboundary Context[1] and conscientiously implement all recommendations.
- Provide for closer collaboration between the Espoo Convention Implementation Committee and those that are informing the Committee regarding possible violations of the Espoo Convention, and the Kiev Protocol is highly welcomed. Additional information in the case of Rivne NPP 1,2 lifetime extension has fed into the process of the Committee's initiative, allowing problems to be addressed in other similar cases to the lifetime extensions of nuclear power units in Ukraine.
- Strongly recommend that countries avoid making changes to the national Espoo Convention procedure or decision-making procedures when transboundary procedures have started. If it is impossible to avoid such changes, the party of origin should immediately inform all affected countries about such changes and clarify newly adopted rules in order to provide mutual understanding as to how the Espoo Convention procedures are being carried out. Moreover, if any essential changes or decisions are taken concerning a planned activity that has already started the transboundary process, it is to be hoped that the country of origin duly informs all affected parties as soon as possible.
- Recommend that preliminary (prior to notification) preparation and division of responsibilities between the governments of the country of origin and affected counties will help to make the procedure more efficient and prevent time delays. Bilateral agreements between countries defining the procedures of transboundary consultations is another good option to ensure that rights violations, disputes and delays are avoided.

1 http://www.unece.org/fileadmin/DAM/env/documents/2006/eia/ece.mp.eia.8.pdf

- The concept of «final decision» should be elaborated or described for different types of nuclear projects at the national level, especially in order to address multiple-stage decision-making in the nuclear field.

South Ukrainian NPP – not ready for safe operation in over-design period

(Briefing by NECU, November 2013)

On October 14, 2013 the State Nuclear Regulatory Inspectorate of Ukraine (SNRIU) published a draft decision on the possibility of the lifetime extension for the unit 1 South Ukrainian nuclear power plant (SUNPP-1) in an over-designed period up to December 2, 2023.

SUNPP-1's license is going to expire on December 2nd 2013. The unit has been stopped already in March 2013 for necessary maintenance and safety upgrade works. SNRIU conditioned the possibility of the unit's re-start and lifetime extension consideration only if a provided list of measures are implemented, including an explicit list of measures from Complex (Consolidated) Safety Upgrade Program for Ukrainian NPPs .

In October 2013, the Kiev-based environmental NGO NECU commissioned an analysis from a technical expert on nuclear power plants with the task to assess whether the technical state of SUNPP-1 can be sufficiently provied to allow for safe operations for an additional ten years and whether necessary safety upgrades have been fully implemented. For this, Energoatom's report "South-Ukrainian NPP, Unit 1. Report on periodic safety review" Comprehensive Safety Analysis" was analysed, as well as other relevant documents available to the public.

As a result of NECU's analysis, the following conclusions were made:

• The report, disclosed for public scrutiny, contains only summary information and analysis on the findings of 14 safety factors, ie factual information in this document is mostly missing. **Reports on the evaluation results for each safety factor were not made public**.

• NAEC Energoatom in their report analysed the unit's safety deviations from the requirements of technical standards as of January 1, 2012. **However, the state of the unit does not meet the requirements of newly released regulations and currently applied technical and regulatory standards**.

In February 2009, an International Atomic Energy Agency (IAEA) mission assessed the design safety of SUNPP unit-1. According to the mission's results, a list of safety measures was prepared and their implementation scheduled. These measures were included into the Complex (Consolidated) Safety Upgrade Program for Ukrainian NPPs (KsPPB).

As of 14.10.2013, the implementation of 54 measures under KsPPB had not been completed.

Out of measures that were named by SNRIU as obligatory for consideration of the unit's lifetime extension, 38 measures have not been completed (as of October 10th), and for 13 of these neither the status of implementation nor the expected implementation timings were specified in the report. However, the majority of these are crucial for ensuring safety in case of emergency situations. Severe accidents guidelines are not developed, as well as still not done measures on increasing reliability of power supply and provisions for long-term residual heat removal from active zone, as well as from cooling ponds for spent nuclear fuels.

One of the major concerns raised was the fact that the number of allowed cycles of 'Planned cool down' to the 'cold state' at South Ukrainian NPP unit 1 had been already exceeded (91 versus 90 allowed). During planned 'cool downs' the reactor material experiences maximum stress and 'ageing' occurs. In emergency cases, emergency cool down takes place which accelerates ageing processes and decreases the operational life of the reactor. Thus when the limit for 'cool downs' is reached (when there are many planned or emergency cool downs) cracks in the core reactor can appear. The reactor core is one of the few pieces of nuclear equipment that cannot be replaced.

The number of factual cycles "Separated hydrotest for density at the primary circuit" has also exceeded expected figures, and now 98 out of 100 allowed cycles has already taken place. To further justify the possibility for the unit's operation under such circumstances, a number of assessments have been performed at the reactor by Nuclear Research Institute Rez (Czech Republic) and "Recourse-Audit" (Ukraine). However, according to national nuclear safety regulations, any deviations from the project should be identified, documented, verified and approved by the organisation who designed the reactor, in this case "Hydropress" and the manufacturer of the reactor core. The main constructor for VVER-1000 units was not involved in the lifetime extension programme development and implementation, although this is required by the national nuclear safety regulations.

A number of deviations from international standards have been identified. At

SUNPP-1 reassessment of the content of the ageing management programme to comply with "NS-G-2.12 Ageing Management for Nuclear Power Plants" was not performed.

Our recommendations to SNRIU were in line with the recommendations of the expert analysis:

1. The decision on the possibility of the lifetime extension of SUNPP-1 should be postponed until completion of all the measures from Complex (Consolidated) Safety Upgrade Programme, specified in tables 1 and 3 and until the issue with allowed cycles of «Planned cool downs" and "Separated hydrotest for density at the primary circuit" is properly addressed.
2. A feasibility study and the unit's decommissioning project for SUNPP-1 should be developed as soon as possible to comply with the requirements of the national safety regulations and due to the fact that currently there is no spent nuclear fuel and rad wastes, deposits and the timing for their design and construction is rather long.

In spite of the safety shortcomings described above, on November 28, 2013, the Board of SNRIU concluded that the possibility of the unit's safe operation for another 10 years, until December 2, 2023, was justifiable[1].

With this decision the SNRIU has significantly diminished its leverage on the nuclear units' operator to ensure all KsPPB measures are fully implemented (from the experience with lifetime extension of Rivne NPP Units 1) and cast doubt on its competence and power to guarantee nuclear safety.

Recommendation to the EU

The EU, as Ukraine's key partner in the nuclear safety area, should take steps to prevent such a loose approach to nuclear safety by the responsible Ukrainian authorities as this could have implications for nuclear safety across the whole continent. Through policy dialogue and financial leverage, the EU should require Ukrainian counterparts to adhere fully to nuclear safety regulations, to ensure lifetime extensions for expired units are not considered before all safety assessments are properly done and safety upgrades fully implemented, and to ensure that decommissioning plans start to be prepared.

1 http://www.snrc.gov.ua/nuclear/uk/publish/article/234340

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