THE GOVERNMENT OF THE REPUBLIC OF LITHUANIA

ORDER

No. 367p, dated May 17, 1993

Vilnius

Regarding establishment of the Nuclear and Radiation Safety Advisory Committee

Based on international experience in using atomic energy and recommendations by IAEA it is decreed that:

1. The Nuclear and Radiation Safety Advisory Committee shall be established, and J. Vilemas, Director of the Lithuanian Energy Institute, the State Advisor on atomic energy issues, shall be appointed its Chairman.

2. The Chairman of the Nuclear and Radiation Safety Advisory Committee shall be charged with submitting within a month to the Government of the Lithuanian Republic proposals regarding the formation of the said Committee. Experts with experience in the area of nuclear and radiation safety from the Republic of Lithuania, the Russian Federation, Finland, Sweden, Ukraine, the Federal Republic of Germany and other countries are to be involved in the Committee's activities. The Chairman shall also submit the Committee's working program approved in the prescribed manner with the State Nuclear Power Safety Inspectorate and the Ministry of Energy.

Prime Minister Adolfas Šleževičius

- The Ignalina NPP is operating two reactors of RBMK-1500 type.
- The first Unit was commissioned in December 1983, the second in August 1987.
- Ignalina NPP produces some 80 per cent of electricity generated all over Lithuania.
- In the National Energy Strategy adopted in 1999 the decision was taken to decommission Unit 1 at INPP by 2005.
- In the National Energy Strategy adopted in 2002 the decision was taken to decommission Unit 2 at INPP in 2009.
THE STATUTE
of the Nuclear and Radiation Safety Advisory Committee of the Republic of Lithuania

1. The Nuclear and Radiation Safety Advisory Committee of the Republic of Lithuania, hereinafter referred to as the Committee, is a body advising the Government of the Republic of Lithuania on nuclear power safety issues.

2. The key objectives of the Committee are:
   2.1. To assist the Government of the Republic of Lithuania and to advise the Ministry of Economy and the State Nuclear Power Inspectorate on the principal issues of Ignalina NPP safety;
   2.2. To monitor and analyze the implementation of safety improvement recommendations at the Ignalina NPP, and to consult all the institutions involved in implementation of the recommendations;
   2.3. To advise the Government of the Republic of Lithuania on principal nuclear power issues, including design, construction, reconstruction and potential dismantling;
   2.4. To encourage exchange of information on the issues of nuclear power safety between Lithuania and other countries.

3. The Committee shall consist of eleven members. The membership shall be on a voluntary basis and shall not be paid for.

4. The composition of the Committee shall be approved by the Government of the Republic of Lithuania. Experts from foreign countries can also be members of the Committee. The Chairman and Secretary shall be citizens of the Republic of Lithuania.

5. The Committee meetings shall be held at least three times a year. If need be, representatives of concerned institutions will be invited to participate at the meetings.

6. The Committee decisions shall be considered valid if at least 2/3 of the members take part at the meeting. The Committee's conclusions and recommendations shall be adopted by general consensus.

7. Members of the Government of the Republic of Lithuania, the Ministry of Economy, the State Nuclear Power Inspectorate, the Ignalina Nuclear Power Plant and every member of the Committee shall be able to propose issues to be discussed.

8. The Committee shall submit conclusions and recommendations that, if necessary, shall be discussed by the Government of the Republic of Lithuania and other state governing bodies. The Committee shall inform the public about the decisions taken.

9. If necessary, the Committee may set up ad hoc working teams.

10. Economic and technical services to the Committee shall be rendered by the institution whose head or other official is appointed the Committee's Chairman.
A brief overview of the Lithuanian Nuclear Safety Advisory Committee activities

Lithuania declared its independence in March of 1990, but the Ignalina Nuclear Power Plant remained factually under the jurisdiction of the Soviet Union until the political upheavals of August 1991. After the formal collapse of the Soviet Union, Ignalina finally came under the authority of the Republic of Lithuania. The country inherited from the former Soviet Union one of the most powerful and newest nuclear power plant with two RBMK-1500 reactors but all technical support organisations remained in other countries, mainly in Russia. Thus one of the most important problems was to establish a national regulatory regime and to create the necessary nuclear infrastructure able to serve for Ignalina NPP. The Government of the Republic of Lithuania realized that to implement this task international support was needed. Therefore the Lithuanian Nuclear Safety Advisory Committee (LNSAC) was established in May 1993.

The main task of the newly established Committee was to advise the Lithuanian government both on industrial and regulatory matters of nuclear safety. Initially, one of the most important tasks was to exert pressure on the Government so that it allocates sufficient funds from the national budget for setting up a national regulatory body, VATESI, and for safety enhancement measures and projects at INPP so that Lithuania

José A. Gómez
European Commission

Regarding the Lithuanian Nuclear Safety Advisory Committee. My opinion is very positive. This Committee contributes to enhancing nuclear safety in Lithuania by providing competent Lithuanian authorities with objective and independent advice on important nuclear safety issues. The Committee constitutes a good example of transparency and co-operation between Lithuanian and foreign organisations dealing with nuclear safety.
should not rely on foreign aid only. From time to time the problem of salary payments at INPP also had to be raised with the Government. During the first years the Committee was also engaged as an independent point of contact for EBRD for the follow-up of all projects at INPP that the bank funded. The members of the Lithuanian Nuclear Safety Advisory Committee at the meetings discussed the most important safety problems of nuclear energy in Lithuania, such as the issues of nuclear liability, development of nuclear law, separation and clarification of safety responsibilities, safety implications of the economic reliability of the Ignalina NPP, creation of Technical Support Organizations, the main findings and recommendations of the "In-Depth Safety Assessment of the Ignalina NPP", VATESI plans for licensing of the Ignalina NPP, Ignalina NPP management structure and safety culture, progress with implementation of the Safety Improvement Programs (SIP-2), development of the Diverse Shutdown System for Unit 2 of Ignalina NPP, gas gap closure safety implication problem and other safety-important issues. Some examples of LNSAC activities are presented below.

Diverse shutdown system

As a condition of the Grant Agreement between the Lithuanian Government and EBRD (1994), a Safety Analysis Report (SAR) and its independent review (RSR) were carried out to assist in the preparations for licensing Ignalina Unit 1. In the SAR the accidents resulting from failure to scram (ATWS) were studied, and an engineering assessment of the existing control and protection system (CPS) was carried out. As a result of this work it was concluded that insufficient protection was provided against ATWS in view of the severe and rapid consequences that could arise. The existing CPS had a number of shortcomings, e.g. lack of separation between control and protection functions, and vulnerability to common cause failures. Both SAR and RSR strongly recommended that a fully independent diverse shutdown system (DSS) be installed. The conclusion by a panel of international nuclear safety experts (referred as the Ignalina Safety Panel or ISP) fully supported this recommendation, placing the issue among the most important ones for the safety of Ignalina. They recommended the system be installed without delay, and wrote that they considered that a timescale of up to 4 years (from their time of reporting - early 1997) could be considered too long. The Ignalina NPP accepted the recommendations and with the funding provided by the EC they are implementing the DSS at INPP Unit 2. VATESI has the responsibility of review, approval and licensing of the DSS.

Development and implementation of the second shutdown system require several years. Thus, compensatory measures, which have the potential to reduce the overall risk, have been recommended to be implemented at Ignalina NPP until a DSS is in place. In accordance with this Ignalina Safety Panel recommendation Ignalina NPP developed and introduced an Additional Shutdown System (Russian abbreviation DAZ) at Unit 1 in 1998 and Unit 2 in 1999.

The main drawback of the DAZ system is that control and shutdown functions are not separated. At the NSAC meetings importance of DSS installation was discussed several times. At the meeting in October 2002 it was emphasised that "The urgency of installing a DSS in Unit 2 has been under discussion since the completion of the original SAR for Unit 1 in 1996-1997, and has now reached the point where its early installation is of prime importance, not least because the credibility of the INPP and VATESI has been called into question due to the long delay. This is in addition to the primary reason (the time-at-risk reason) that is the major safety rationale". However, at the meeting held on January 31, 2003, the Committee was pleased to be able to report that this DSS project is on schedule and all of the activities are going along well.

Gas gap safety issue

One of the most important issues for the Committee was the problem of the gas gap closure between graphite and pressure tubes, which
Experience shows that over the years of Lithuania's independence the staff of the Ignalina Nuclear Power Plant and the institutions associated with nuclear power have dealt exceedingly well with new challenges, works and problems that Lithuania faced after becoming fully responsible for operation and safety of INPP. I believe that the success can be put down to the policy of openness and skilled support on the part of foreign partners.

The Lithuanian Nuclear Safety Advisory Committee is and will be a forum for independent assessment of nuclear safety. Foreign and Lithuanian experts on its staff make use of their experience in assessing the safety situation at INPP, the efficiency of proposed upgrades and modifications, and suitability of the operational systems and organisational structures. Representatives of the State Nuclear Power Safety Inspectorate are regularly invited to participate at the Committee meetings. They deliver several reports on different issues related to safety, debate, and express their views and proposals. The Committee's conclusions and recommendations are always well-founded.

I can sum up the benefits from the participation in the Committee's activities in three words: experience, confidence, and assistance. It is always useful to hear suggestions, to offer independent assessment and eventually to make decisions when you know the opinion of such a competent forum as the Lithuanian Nuclear Safety Advisory Committee.

Cooperation with the SC of the Licensing Assistance Project

To assist VATESI, an international collaborative effort known as the Licensing Assistance Project (LAP) was established in 1997. The LAP Steering Committee met several times a year and is a major factor in assuring that the many different foreign assistance projects to help VATESI are well coordinated. Besides this key coordination function, the LAP Steering Committee advises VATESI on a number of technical and managerial issues. At the 14th meeting held on December 12, 1998, the Lithuanian Nuclear Safety Advisory Committee called attention to how important the LAP effort has been over the past year in helping VATESI, and decided to coordinate LNSAC and LAP activities. Since then LAP SC meetings are held on the eve of LNSAC meetings. LAP experts mainly concentrate on technical discussions and provide well-established background for LNSAC decisions.
Mankind will have to turn back to nuclear energy

In 1998, on the occasion of the 16th February – the 80th Anniversary of the Reestablishment of the State of Lithuania, J. Vilemas was decorated with the Order of Gediminas, the Grand Duke of Lithuania.

Jurgis Vilemas

On the Committee's activities and experience gained with time

On May 17, 1993, the Nuclear and Radiation Safety Advisory Committee was set up by a resolution of the Lithuanian government. It was to consult the Government and the then Ministry of Energy and the Ministry of Environment on the most important issues of nuclear safety and radiation protection. A decision was taken to invite to the Committee high-level professionals from several West European states operating nuclear power stations and participating in different support to Lithuania programs in the field of running the Ignalina NPP. The Committee is the brainchild of Jan Nistad, who was in charge of Sweden's support to Lithuania on INPP safety issues at that time. It was agreed that a single representative should be invited from the United Kingdom, Finland, Sweden, and Germany, as well as Ukraine as the country that at the time was operating a nuclear power station with reactors similar to those at Ignalina. The attempts to invite a representative of Russia ended in failure. It was agreed with the Lithuanian Government that Lithuania will be represented by at least three persons, including the chairman, the secretary and a specialist (or specialists).

All the foreign countries mentioned above delegated very experienced experts in nuclear safety, therefore the activity of the Committee has been very efficient from the very beginning. To Lithuanian representatives, including myself as the Committee's chairman, it has been a very significant school of comprehensive experience. As it turned out somewhat later, there were virtually no issues related to radiation protection that might need the support of our Committee. Therefore on July 4, 1997, a decision was made to reorganize the Committee and to limit its activities to INPP safety issues, as well as to complement its staff with representatives of France, the USA, and Japan. The final structure of the Committee was thus defined (11 members, including 3 representatives of Lithuania). The list of the represented countries remains unchanged today.

On the work of Lithuanian and foreign nuclear safety experts of the Committee in solving the most important issues of Lithuania's nuclear power

Lithuania has been lucky in that it has such advisory committee, as it has on its staff experts from countries the safety of whose NPPs and safety culture in particular present a model that we must emulate. From the very beginning our foreign colleagues have not been passive observers. Instead, they tried to comprehend our problems and to sincerely help and advise us. Everyone was eager to upgrade safety at the Ignalina NPP as soon as possible, and to change the attitude of the staff towards safety issues inherited from the past. The teaching skills, tolerance, and the ability to analyze even the most intricate issues and to try and convince the opponent rather than thrust one's own opinion on him played a very important role. The minutes of the Committee meetings that are always drafted by M. Hayns and R. Budnitz is another aspect important to us Lithuanian representatives. Although rather heated debates took place at certain meetings during which a lot of sharp criticism was expressed on INPP safety issues, the minutes were always drafted in a benevolent, balanced manner, with proposals and instructions set forth. I believe this Western culture of official communication helped us to maintain good, really business-like relations between the Committee on the one hand, and the Ignalina NPP, the State Nuclear Power Safety Inspectorate (VATESI), and government institutions on the other. Naturally, the minutes of the Committee meetings and the decisions and instructions listed there had a character of recommendations. Nevertheless, nearly all of them have been implemented, or they have been taken into consideration, albeit sometimes with a delay.

The Committee's activity was known and ap-
preciated not only in Lithuania. Embassies of countries one way or another related to nuclear power and assistance to the Ignalina NPP, all kinds of international institutions have continuously expressed interest in it. Although the Committee has 11 members, as many as 20 or sometimes 30 invited participants would take part at the meetings that were held 3-4 times a year. In addition to representatives of INPP and VATESI, heads of concerned departments of the Ministry of Economy (formerly the Ministry of Energy), representatives of the European Bank for Reconstruction and Development, the European Commission, and sometimes those of the US Energy Department and a number of other concerned institutions, including educational establishments, are invited to participate in the discussions.

Given that the foreign members of the Committee informed the governments that delegated them about the issues discussed at the meetings and the progress made in upgrading safety at the Ignalina NPP, it can be maintained that the Committee's activities have greatly contributed to fair reporting of the existing situation and Lithuania's achievements. The progress has really been impressive, therefore I think that today many countries have a considerably more favorable opinion of safety at the Ignalina NPP than in 1991. Although this has not helped us to convince the EU member states that INPP is sufficiently safe and can be operated for many years to come, at least we have succeeded in putting off the decommissioning deadline of both units for some 5 years in comparison to what had been demanded of us in the early 1990s. The decommissioning deadline for Unit 2 has also been set. However, further progress made in putting into practice all valuable recommendations regarding safety improvement, combined with successful operation of the Ignalina station, in the future may open the doors for new negotiations on Unit 2 decommissioning deadline, if political and economic situation is very favorable.

On positive changes in Lithuania's nuclear power and the issues that demand more attention

The progress made in upgrading nuclear safety at the Ignalina NPP is the most significant achievement.

For various reasons almost throughout the past decade Lithuania could not use the economic potential of the Ignalina nuclear facility to the full. However, it looks as if it is going to run at full capacity until the expected date of decommissioning. It is necessary to use on time and in an efficient manner the financial support from the EU intended for preparation for shutting the Ignalina NPP down. This goes not only for the Ignalina power facility but for the energy sector of Lithuania as a whole.

We could have hardly achieved such good results in enhancing safety at the Ignalina NPP if we had not created VATESI, a competent institution supervising nuclear safety. The birth, growth and maturing of the Inspectorate is the fruit of continuous patient support of Western countries, and the Swedish government in particular. The support is ongoing and I hope it will continue for a long time.

The successful work of VATESI and the Ignalina NPP is also due to Lithuania's scientific institutions that have started addressing specific issues related to nuclear safety. Lithuanian scientists today can solve most of the analytical, simulation and other tasks associated with nuclear safety. This has been achieved through immense aid offered by the best scientific centers of Western countries whose most skilled and experienced specialists have been taking part in support programs. The potential of Lithuanian science that in the past...
gained a good deal of experience in the field of fundamental sciences, such as thermal physics, hydrodynamics, and mathematics, thus has been effectively directed for solving specific engineering and scientific problems of nuclear safety. Unfortunately, our bureaucrats at the Ministry of Education and Science do not appreciate that.

On the prospects of nuclear power in Lithuania

Development of nuclear power, due to economic and political reasons, is presently in a deep crisis, especially in Europe and even more so in the European Union. So far there is no real revival of nuclear energy, which would be attested to by wide-scale construction of new nuclear power stations. On the contrary: increasingly often we hear about governments' decisions to shut down their countries' nuclear facilities. This situation is due to numerous factors that are unlikely to disappear soon. Finland's decision or Russia's, Bulgaria's, Romania's and Slovakia's desire to finish construction of nuclear power facilities that began as early as 1970s, does not basically change the overall picture. The situation is somewhat better in Eastern Asia, but the future is not certain there either. However, I am convinced that later on, beyond 2020, the situation is going to change. The time will inevitably come when mankind will have to turn back to nuclear energy and make use of the enormous energy concentrated in uranium. It should be borne in mind that this type of power generation is not accompanied by emission to the environment of substances that affect climate changes, the bugbear of modern environmentalists and politicians.

A comprehensive economic analysis conducted by experts from different countries shows that constructing a new nuclear power station in Lithuania in 2010 economically would be the least acceptable alternative. There are much better decisions helping to balance all the energy economy. However, this is a topic of a separate, much wider discussion. In my opinion, two alternatives are realistic, that is, extending operation of Unit 2 for at least 10 years, or doing without nuclear power for some time.

In conclusion I would like to emphasize that the activities of the Nuclear Safety Advisory Committee render an invaluable support to Lithuania in that they bolster all-round competence necessary for safe and reliable operation of the Ignalina NPP. They also show the world that it has taken us a relatively short time to acquire the competence, although many had serious doubts about it.

I am grateful to all my colleagues from the Committee for the good will shown while sharing their experience and know-how, for advice and friendly attitude. I believe our efforts will enhance confidence in Lithuania's ability to run the Ignalina NPP in a responsible and reliable manner for a long time in the future.

Acting as advisors to the Lithuanian government

By tradition, the LAP meetings and the NSAC meetings are held "back-to-back". This is a very practical and efficient way of using the knowledge and experience from the international experts: in a LAP meeting they take on the role of advisors to VATESI, in the NSAC they take on – with the basis from the discussions in the LAP meeting – the broader role of advisors to the Lithuanian government.

What are the most memorable things (the issues discussed, the debates held, the decisions taken, etc.)?

During my 2.5 years as the LAP chairman, the most memorable (and because of that the most difficult) issue was the discussions of the very much delayed implementation of the Diverse Shutdown System. Because of good preparations from the
experts, we were able to give a unanimous ad-
vice to VATESI, including the necessity to imple-
ment the DSS even in perspective of the closure
decision. Before my time in LAP, when I worked
at and had the perspective from the EBRD, the
most memorable thing was the advice (again
unanimous) and subsequent decision by VATESI
not to give a formal license to Ignalina because
of unresolved safety issues.

What do you think of the Ignalina NPP's ef-
forts in ensuring nuclear safety?

I am very proud to have given a contribution
– first from the EBRD and then from SIP – to the
safety upgrades of Ignalina. This plant is now
recognised by all experts to be the safest RBMK in
the world. The Ignalina commitment to and
implementation of nuclear safety should be re-
garded as an example of how safety upgrades
could be done. The challenge for Ignalina is now
– like my own country Sweden – is a small coun-
try and in order to be efficient we have to co-
operate.

What are the issues that demand more atten-
tion?

The issue that demands most attention now
without any doubt is to ensure a high level of
safety culture at INPP until the last seconds of
operation. (Will key experts stay? Will safety up-
grades and maintenance continue?)

Then comes decommissioning. Even though
there are no signs of decommissioning decisions
in Russia, this decision will ultimately come. The
decommissioning of INPP should be a model both
from technical and economic point of view in the
same way as the safety analyses and safety up-
grades of INPP have been used as a model for
RBMK safety.

To me the most important thing for the suc-
cess of the nuclear power sector in Lithuania af-
ter the independence is the very good co-op-
eration – still recognising each other's different
roles – between the three "nuclear centers of
excellency": the INPP, LEI and VATESI. Lithuania

After the meeting of the Nuclear Safety Advisory
Committee of Lithuania
held in Vilnius on 30
In the photo: (left to
right) P. Česna (the
Ministry of Economy), E.
Bubelis, Uspuras, P.
Weber, R. Budnitz, N.
Steinberg, J. Vilemas, A.
Takeda, A. Brazauskas,
the Prime Minister of the
Republic of Lithuania, L.
G. Larsson, M. Chouha,
M. Hayns, J. Laaksonen,
and S. Kutas.

On the meeting held in Dubingiai, on 13 June, 2001.

What positive changes in Lithuania's nuclear
power sector could you mention?

to maintain the high standard of safety commit-
tment all through the remaining lifetime.

What positive changes in Lithuania's nuclear
power sector could you mention?
On the Committee's activities - the members who have been on its staff from the very first days until today

The Committee has been a most useful forum

You have been working with the Lithuanian Nuclear Safety Advisory Committee since it was established. What do you think of the 10 years of the Committee's activities? What are the most memorable things (the issues discussed, the debates held, the decisions taken, etc.)?

For me the Committee has been a most useful forum where I have received firsthand information on the nuclear safety developments in Lithuania. Based on this knowledge I have been able to explain the Lithuanian situation to our politicians, our foreign ministry officials, EBRD Nuclear Safety Account officials, and my colleagues within the ED. This has certainly helped to relieve many unfounded concerns felt by outsiders on the "Chernobyl type" plant in Lithuania.

I feel that the Committee has also given some useful guidance to the Lithuanian decision makers and the nuclear community. Having participation from all leading nuclear countries in the world, and from some neighbouring countries has ensured that the Committee represents wide experience from the nuclear safety field.

It is difficult to highlight a single memorable thing from the Committee discussions but the work as a whole has been very rewarding.

What do you think of the Ignalina NPP's efforts in ensuring nuclear safety?

The contribution of the plant staff in safety upgrade has been the core of success, as it should be. The top management of the Ignalina NPP has a good attitude that would give even better results if the foreign pressure to close down INPP does not undermine the staff motivation.

What is your opinion of the activities of the Lithuanian Technical Support Organisations?

I very much admire the progress made by the Lithuanian TSOs, and in particular the progress of knowhow within the LEI. I really do hope that LEI staff would find continued meaningful tasks on nuclear safety even in case the INPP closes down as now planned, and no new NPP projects could be started soon. Perhaps young Lithuanian experts could in the future support the NPPs and regulators in those countries that are rapidly losing their competent people to retirement.

What is your opinion of Lithuania's activities in upgrading nuclear safety at the Ignalina Nuclear Power Plant, developing the nuclear safety regulating system, etc.?

The work to upgrade safety of Ignalina NPP has been quite successful. It seems that the plant operations and nuclear safety issues are today quite well under control. Progress could have been faster in some issues, but the difficulty of dealing with the original plant design organisations has been a continuously disturbing factor and has caused delays and unpleasant surprises. Also it seems to be difficult to change the culture to a more dynamic direction. The old way of thinking and working is deep-rooted, and in spite of good intentions it takes time to learn new ways of doing things.

The regulating system started from scratch and there was very little Lithuanian expertise in nuclear safety ten years ago. In that respect the situation was more difficult than in any other country of Central and Eastern Europe. The progress made has been remarkable, and the role of VATESI is now a most important element in further promotion of nuclear safety.

What positive changes in Lithuania's nuclear power sector could you mention? What are the
issues that demand more attention? How do you imagine the future of nuclear energy in Lithuania?

As I already indicated, the rapid learning from hands-on experience in Ignalina safety upgrading projects is a really positive change. Also the spreading of nuclear knowledge to universities through expert tasks is important.

Meeting in Kaunas on 11-12 September, 1997.

More attention could be given on project management skills: especially on how the projects are planned and started, and how the costs can be kept at a reasonable level.

The Lithuanian nuclear future depends on the possible will and drive to start a new NPP project. It seems that taking into account all preparatory steps that are needed to start a new NPP construction, it is not possible to have a new plant on line before the planned closure date of Ignalina 2. If a new project went ahead soon, it might be possible to find a compromise on operating Ignalina 2 until a new plant can take over the base load production.

I would like to note that in joining the EU the Lithuanian situation is quite unique, and the consequences of this may not have been fully understood on the EU side. While the Commission insists also some other plants to be permanently closed down, in no other country this means complete stop of nuclear power production. In other countries the regulators and operators can be quite easily motivated to continue their strong efforts for ensuring safe nuclear power produc-
The views of the Committee were taken into account at the highest levels

What do you think of the 10 years of the Committee’s activities? What are the most memorable things (the issues discussed, the debates held, the decisions taken, etc.)?

It is very hard to isolate specific issues from the very many which the Committee have dealt with over the years. Clearly there were many difficult problems in the very early years. This was due to the then rather weak position of VATESI, and the approach by the INPP senior management to any “advice” given to them about their plant. Some of the technical issues coming out of the SAR report prepared under the auspices of the European bank were difficult, and indeed have taken a very long time to fix. The second shutdown system is still causing some concern, although a practical and realistic project is now under way. Also, the difficulties surrounding the possibility of fuel can-graphite gap closure were very high priority a few years ago, and even with the great deal of work which has been done, there remains some doubt over the condition of Unit 1 in this context. However it does seem that concerns over Unit 2 have been resolved. Overall, the most important and memorable discussion was over the early closure of Unit 1. The decision to close the plant was probably the most important one during this time. It is important to note that it was not this Committee’s decision, but the advice to the government from the group, we believe had some impact on it.

Other particularly memorable moments were the various meetings with Prime Ministers and Presidents over the years. These always gave the group some confidence that their views were taken into account at the highest levels, and therefore that the continued activity of the group was justified.

What is your opinion of Lithuania’s activities in upgrading nuclear safety at the Ignalina Nuclear Power Plant, developing the nuclear safety regulating system, etc.?

There have been remarkable changes over the 10 years of the group’s activity. VATESI, whilst still quite small, has improved beyond recognition, due to a large extent to the leadership of Mr Kutas. They have learned how and when to ask for specialist advice and have been instrumental in developing an internal Technical Safety Organisation capability in Lithuania. The Lithuanian Energy Institute has played an important supporting role in this. Whilst there is always room for improvement, I believe that VATESI is now able to take a position alongside other nuclear regulatory bodies in Europe.

The SIP at INPP has been maintained so that its achievements are quite remarkable when compared to the situation inherited from the Soviet days. Much of this has been achieved with assistance from the West, particularly the Swedish International Programme (and perhaps we should mention here the work of Jan Nistad especially in this) and others have also contributed to both the INPP and VATESI developments. In more recent years it has been gratifying to see that the INPP have been increasingly willing, and able, to make contributions to this programme from their own budget.

What do you think of the Ignalina NPP’s efforts in ensuring nuclear safety?

The SIP is mentioned above, but at least as important have been the efforts made by the senior management of the plant to develop an appropriate safety culture at all levels. Again, there has been a great deal of assistance from Sweden in this, but a key requirement has been the acceptance of the plant management that this is a very high priority activity. The difficulty in achieving this change, when compared to the old Soviet style system should not be underestimated. A good example of this is the setting up of an independent safety committee for the plant (under the chairmanship of Mr Uspuras from LEI).
What positive changes in Lithuania's nuclear power sector could you mention? What are the issues that demand more attention? How do you imagine the future of nuclear energy in Lithuania?

The Committee has been primarily concerned with all aspects of the safe operation of the plant, the sale of its electricity, so that it can undertake important safety upgrades, and in particular to prepare Unit 1, and eventually Unit 2 for closure and decommissioning. There is still a very strong need to consider the social and economic impact of plant closure on the Visaginas region. Also it is vital that the motivation of the INPP staff, at all levels, is maintained whilst the plant remains in operation.

If the positive support from the Government and people of Lithuania can be maintained then I see no reason why the country should not be the site for new and advanced designs of nuclear plant, even when embedded in the European Union. This is some way off, but early planning is essential if there is to be continuity of nuclear generation in the country.

I think the key issue has been the feeling of the foreign members that it has been a worthwhile effort over the years. There have been times (even recently) when it seemed to be a real uphill struggle to achieve the changes thought necessary. Even so we have all continued to come and to do our best. Much of this must be due to the leadership shown by Jurgis Vilemas and the respect in which he is held by all members.
There is still time for deciding the fate of Unit 2

You have been working with the Lithuanian Nuclear Safety Advisory Committee since it was established. What do you think of the 10 years of the Committee's activities? What are the most memorable things (the issues discussed, the debates held, the decisions taken, etc.)?

I believe the Committee has played an important role in developing a civilized pattern of nuclear safety in Lithuania. Importantly, the entire process ran as a consecutive evolution rather than a revolution. We have learnt to speak the same language. An acceptable format of communication between the Committee and the highest authorities of Lithuania got formed, which is of the utmost importance in searching for optimum decisions in the area of safe use of nuclear power. An understanding has been reached that a difference in technologies is not a cause for confrontation, but rather an opportunity for all the parties involved to learn more and gain more experience. The most memorable event was licensing Unit 1 at the Ignalina NPP. This is the first and, to my knowledge, the only example of comprehensive licensing process within the former Soviet Union. The second memorable aspect was the mutual understanding among the members of the Committee, and respect shown to our Lithuanian colleagues in spite of fairly heated debates that took place from time to time.

What is your opinion of Lithuania's activities in upgrading nuclear safety at the Ignalina Nuclear Power Plant, developing the nuclear safety regulating system, etc.?

It would make no sense to enumerate all the actions taken, as quite a lot has been done. Could we have done more? Probably yes. However, we are living in a real world, in a system of mutual relations that were inherited from the past. We have a different understanding of problems, and we must act considering the existing economic limitations. It should be noted that the first years were spent on looking for and developing a concerted approach to safety issues. The difference in cultures, including engineering culture, could lead to confrontation in the Committee. Nevertheless, we managed to find a common language and the form of cooperation in the interests of safety.

First of all, it should be noted that prior to regaining independence Lithuania had no system of nuclear regulation of its own and started creating it in the early 1990s. Needless to say, the practice of supervision activities characteristic of the Soviet system was used as the basis of the system. Nothing else could be expected. Firstly, concrete people determined the spirit of the system being created. These people did not have – they could not have – other experience than Soviet. Secondly, it would have made no sense to develop a license system of regulation, as there was no basis, namely, appropriate standard documents, package of licensing documents, and trained specialists, for it. The operating body was not ready for a license system of regulation, either. Today a fairly efficient system of regulation is in place combining both the experience in licensing transferred by Western partners, and the experience in state supervision that had been perfected for years in the USSR.

What do you think of the Ignalina NPP's efforts in ensuring nuclear safety?

A great deal of effort has been made and significant results have been achieved. Today one can maintain that at the Ignalina NPP safety culture has formed that enables to mobilize the resources and funds for addressing the issues that may affect safety most.

What is your opinion of the activities of the Lithuanian Technical Support Organizations?

I think Mr. Vilemas, Mr. Ušpuras and other Lithuanian colleagues can be congratulated on...
creating an efficient system of engineering support. Many countries should learn from Lithuania how technical support by specialists and organizations of different countries and international organizations can be funneled into development of enormous potential of national science and technology. This potential is a guarantee that not only today's but also future strategic problems of the power sector development in Lithuania will be successfully dealt with.

What positive changes in Lithuania's nuclear power sector could you mention? What are the issues that demand more attention? How do you imagine the future of nuclear energy in Lithuania?

I'll begin with the latter. I have no doubts that nuclear power in Lithuania will develop. A country that has already mastered nuclear technology should not take a step backwards, especially given that the unique environment of Lithuania requires the use of a clean technology for power generation. Nuclear technology is the cleanest of those applied today. I won't speak of wind and solar stations. It is not only specialists who understand that a wide-scale use of these two technologies in Lithuania is not more than a utopia. An important issue is the choice of the type of nuclear facility and its capacity. I am positive that Lithuanian specialists will make a correct choice. A lot of attention should be given to the economic aspects of the issue that are now seriously being considered at the Lithuanian Energy Institute.

Although an enormous amount of work has been put into improvement of safety of the reactors at the Ignalina NPP, the economic and political conditions made Lithuania take the decision to decommission Unit 1. There is still time for deciding the fate of Unit 2. I hope the decision will be well-founded. Admittedly, sooner or later Unit 2 will have to be replaced by a new source of electricity generation that would meet Lithuania's demand. I am convinced that the source will be nuclear. Specialists of Lithuania and the Committee must comprehend in detail the criteria of acceptability of a new nuclear power station, including those of safety. A second important issue is the staff policy. It is no secret that specialists taught and trained in the former Soviet Union form the basis of INPP staff. As time goes by, people are growing older and give up their jobs. The expected shutdown and decommissioning of the Ignalina NPP, the construction and operation of a new facility will require a new wave of specialists. The issue of staff training merits detailed discussion. There are some other not less important issues that need to be discussed.

The Committee members and experts from Lithuania and foreign countries after the meeting held in Nida on 7 May, 1999.
I believe in bright prospects of the world’s nuclear energy

You have been working with the Lithuanian Nuclear Safety Advisory Committee since it was established. What do you think of the 10 years of the Committee’s activities? What are the most memorable things (the issues discussed, the debates held, the decisions taken, etc.)?

The beginning was the most difficult part but it was also the most interesting, as I have always found it much more attractive to create things than to maintain a good image. There had not been a committee of this type in international nuclear power practice before. Leading nuclear safety experts from Western countries, namely, Germany, Sweden, Finland, France, and the United Kingdom started working with the Committee, later on to be joined by counterparts from the USA and Japan. N. Steinberg from Ukraine, and several representatives of Lithuania, have been on the Committee’s staff from the very beginning of its activities. It is no secret that the views on safety culture and the mentality of Lithuanians and Ukrainians, former citizens of the USSR, differed from those of Westerners. Nevertheless, we succeeded in working as a team and making an important contribution to upgrading safety at the Ignalina Nuclear Power Plant.

What is your opinion of Lithuania’s activities in upgrading nuclear safety at the Ignalina Nuclear Power Plant, developing the nuclear safety regulating system, etc.?

I have delivered reports on the safety level at the Ignalina NPP in numerous international events, including the IAEA forum of 1999 whose objective was to assess the safety level of East European nuclear power stations. It can be maintained that in terms of risk indicators the probability of the core damage at the Ignalina NPP is similar to that in Western reactors. Admittedly, the nuclear power facilities employing reactors of RBMK type do not have full containment. As a result, the probability of emission of large amounts of radioactive substances at these power stations is virtually the same as that of damage to the core. Although the probability of radioactive emissions at the Ignalina NPP is also very low, the absence of full containment is the main reason why the EU is keen on shutting it down. In my opinion, the most important thing is that Lithuania has proved that despite the decision to decommission the Ignalina NPP, efforts are being made to make it the safest power station with RBMK reactors, and has confirmed that it will continue safety upgrading operations until its final closure. This was the attitude towards safety enhancement at the Ignalina NPP that the Nuclear Safety Advisory Committee has been striving to impose, and we have succeeded in it. It is probably the most important result of the Committee’s activities.

What do you think of the Ignalina NPP’s efforts in ensuring nuclear safety?

One cannot overestimate the efforts of the management and staff of the Ignalina NPP in upgrading the safety level at the facility. They not only developed several safety improvement programs but implemented them too. Furthermore, all the studies aimed at assessing and enhancing the safety level at INPP, such as Barselina, SAR, SAR-2, DAZ and others were successfully completed because the staff of the station took an
active and enthusiastic part in these. What is your opinion of the activities of the Lithuanian Technical Support Organizations?

When Lithuania regained its independence there were no TSOs and they had to be created. This was an awfully difficult and interesting task. The first step was the scientific analysis team of the Ignalina NPP safety that was set up at the Lithuanian Energy Institute on March 19, 1992. Initially, the group known as the Ignalina Safety Analysis Team had a staff of 9. Today we are often asked where the team has disappeared. It has not disappeared anywhere. Rather, it has grown into an independent laboratory that is now the largest at the Institute. Thirty-odd nuclear safety experts, including 6 habilitated doctors and 10 doctors, are currently working at the laboratory. In the beginning we dreamed of being capable to do everything that was needed in order to improve safety at the Ignalina NPP. Encouraged and assisted by our counterparts from Western countries, such as Germany, the USA, Sweden, the United Kingdom, etc., we have mastered the necessary state-of-the-art safety analysis codes (these were handed over to Lithuania free of charge), and have developed at INPP thermo-hydraulic, neutron dynamics, structural mechanics, probabilistic analysis and other models. Today in Lithuania we are in a position to conduct virtually all safety assessment studies of the Ignalina NPP. I would like to make use of this opportunity and to express our gratitude to Western partners from engineering safety centers for the know-how they have conveyed to us and sincere support. We are lucky in that we have been cooperating with real professionals of nuclear safety not only from Western countries but also from Russia, most importantly with those representing the Kurchatov Institute and NIKIET. Although we used to compete with Russian organizations for Ignalina NPP orders, we remain friends and have produced several safety studies jointly.

What positive changes in Lithuania's nuclear power sector could you mention? What are the issues that demand more attention? How do you imagine the future of nuclear energy in Lithuania?

I hope that in 2004 Lithuania will join the EU. Over the years of regained independence our mentality and understanding of safety culture have become somewhat more similar to those of Westerners. However, we should continue our efforts in this direction. After becoming a EU member Lithuania will be creating nuclear power future not only for itself but also for the entire Europe. I believe in bright prospects of the world's nuclear energy.

After Lithuania announced its independence, the necessary nuclear infrastructure was created in the country. Currently we have a functioning nuclear safety system. A good deal of upgrades have been made at the station employing RBMK reactors, and considerable experience has been gained. I think this experience will be useful to other countries, too. Conditions should be created for this experience to be used for enhancing nuclear safety level in the world, and first of all in other post-Soviet states. One of the ideas in the air is setting up an RBMK excellence center jointly with Western countries, Russia, and Ukraine. It should be done in the nearest future.
On the Committee's activities – Jan H. Nistad, its originator

The choice of "To have or not to have" should be made soon...

In 1998, on the occasion of the 16th February - the 80th Anniversary of the Reestablishment of the State of Lithuania, Jan H. Nistad was decorated with the Order of Gediminas, the Grand Duke of Lithuania.

Jan H. Nistad

When the Republic of Lithuania regained its independence it possessed two of the biggest nuclear reactors in the world. There was no regulatory experience other than what was taken over – in staff and procedures – from Gosatomnadzor of Russia. The Lithuanian government realised that it would need international support. Therefore a Nuclear Safety Advisory Committee was established, and members, Lithuanian and foreign, were appointed by the Government. The first meeting was held on October 13, 1993.

The task of the Committee was to give advice to the Lithuanian government about both industrial and regulatory matters. A second task for the new committee was to be a reference body for the European Bank for Reconstruction and Development – EBRD. The Bank was arranging a grant to Lithuania of 33 million ECU, funded mainly from the EU. Those funds should be used only for hardware safety improvements at INPP. The Committee assisted EBRD in setting priorities between different safety enhancement projects.

One of the most important tasks in the beginning was to put pressure on the Government to set aside sufficient funds from the national budget for building up a national regulatory body, VATESI, and for safety enhancement measures and projects at INPP so that Lithuania should not only rely on foreign aid. From time to time also the problem of salary payments at INPP had to be raised with the Government. During the first years the Committee was also engaged as an independent point of contact for EBRD for the follow-up of all projects at INPP that the bank funded.

One of the most important issues for the Committee was the problem of the Gap Closure between graphite and Zr tubes, which would be decisive for the timing of production ending of both units. No contact between the graphite columns and the Zr tubes was to be allowed. This was a conditionality for the 33 M ECU grant from EBRD. Measurement methods, techniques and equipment were developed for following and monitoring the situation. This matter is still ongoing, but the shutdown of the two units will probably not be limited by this, as Lithuania has applied for EU membership, and hopefully will become a member in 2004. The Ignalina units will as a requirement from EU anyhow be closed by 2005 and in 2009 respectively.

Another issue that has been very much discussed in the Committee is "How safe are the two INPP units?" For that reason PSA studies were started very early as a part of the Swedish bilateral programme. The results of PSA Level 1, 1+ and 2 studies were all presented to the Committee for assessment. All studies showed that INPP safety was higher than expected for a Chernobyl type RBMK reactor.

The shutdown capability at the INPP reactors and its independence of common cause failures has been another important issue for the Committee. It is claimed that this problem is now solved and one can hope that Unit 2 will have an upgraded DSS system in operation for some 3-4 years before closure.

What is then the situation today as concerns activities that the Committee was set to follow? The nuclear regulator VATESI has developed into a modern, "standard" Western regulator. Its future will follow the lines of other EU regulators and it will be a partner in the established regulator co-operation. The assistance from other countries will be reduced and finally disappear. Further upgrading of INPP must be continued so that both units can be run with the highest possible safety levels until shutdown. More efforts will have to be directed towards decommissioning. Lithuania will need expert and financial assistance because there has been an insufficient building up of both decommissioning expertise and funds in the country. Some international and national
funding is already available, but much more will be needed.

The emphasis on enhancing Safety Culture at INPP that started many years ago with Swedish bilateral support had a slow start. The Soviet Union-style Safety Culture that existed during the early years of Lithuanian independence had to be changed, which meant not only procedure and document development, but also even changes of peoples' attitudes and values. However, the situation has improved and the aim now must be continued improvement, otherwise the Safety Culture will deteriorate. In the present situation, with decided shutdown of both INPP units by 2005 and 2009 respectively, it is of paramount importance that the safety culture at the plant – and at VATESI – is monitored and measured. Much effort should be used for education in this area.

The future nuclear energy situation in Lithuania will depend on political decisions. The choice of "To have or not to have" should be made soon if it is to have any positive effect on the safety situation at INPP and on the future of the town of Visaginas!

If there is to be no new nuclear power plant in Lithuania it will be important to add on expertise in the decommissioning field both for INPP and VATESI, hopefully this can to some extent be done by re-educating the existing personnel.

Will NSAC be needed in the future? As long as there are nuclear activities going on at INPP, the answer is clearly that NSAC is needed. But the work of the Committee should slowly change from nuclear operation Safety to nuclear decommissioning Safety up to the year 2009. This will need additional type of experts, if the Committee shall continue to be a good advisor to the Lithuanian Government.

A view from across the ocean

An example of Lithuania's willingness to listen to and work with experts from around the world

Robert Budnitz

In my view, the Nuclear Safety Advisory Committee of Lithuania has had a very significant impact on overall nuclear safety at the Ignalina NPP during its first ten years. It has served as a very important example of Lithuania's willingness, indeed Lithuania's eagerness, to listen to and to work with experts from around the world.

The Committee's most important contributions have been of two kinds:

First, the NSAC has provided a forum to enable all of the interested foreign governments and international agencies (including the EC and the EBRD) to stay well-informed about the progress of safety improvements at Ignalina. This has allowed these governments to remain comfortable with their continuing contributions to the safety-upgrading work.

Second, the NSAC has intervened on several occasions to help bring about stronger policies within the Lithuanian Government, so that the Ignalina safety-improvement program could continue, and also so that VATESI, the Lithuanian nuclear regulatory agency, could be allowed to continue to improve its effectiveness.

In these past ten years, a few key milestones are important. Among these milestones were the development of a strong VATESI agency after a difficult start-up period at the beginning; the completion of the SAR-1 safety-analysis study, which was the first comprehensive study of Ignalina safety; the use of the SAR-1 to formulate a sensible safety-improvement program, in a manner that the foreign partners had confidence in; the technical understanding of the safety implications of the gap-closure issue for Unit One; the development of the first comprehensive plan for the decommissioning of Unit One and the disposition of the spent fuel in a safe-storage facility; the difficulties in developing an effective diverse shutdown system for Unit Two; and the
A gradual evolution of a much stronger safety culture at Ignalina.

Much remains to be done to assure that the safety of the Ignalina station is maintained at an acceptable level and is improved over the years. Much also remains to be done to assure that VATESI continues as a strong independent regulatory agency, especially when the transition occurs (soon!) from regulating the two operating reactors at INPP to regulating their decommissioning. And finally, constant vigilance is needed to assure that the Lithuanian government provides an ongoing and supportive political environment and appropriate funding for safety.

I also wish to observe that the development of a capable and effective nuclear-safety-technology "technical support organization", the Lithuanian Energy Institute, is a remarkable achievement. Several other countries in the formerly socialist bloc have attempted to develop such an organization, but only a few have succeeded to build anything as effective as LEI. This represents a strong statement about the overall culture in Lithuania.

In closing, I wish to note that these represent my own views and do not necessarily represent the views of the United States government or the Lawrence Livermore National Laboratory.

A Japanese expert on the Committee's activities and changes that have taken place in Lithuania

The great success in upgrading the nuclear safety of the Ignalina NPP is obvious

What do you think of the 10 years of the Committee's activities? What are the most memorable things (the issues discussed, the debates held, the decisions taken, etc.)?

I joined the Committee on July 1997 just after decree No. 722 was issued for the partial change of decision No. 786. In this sense I was a latecomer to the Committee. At first I thought that the Committee was full of formality and ambiguity because the Committee seemed to be in a delicate political situation. It was, however, not long before I realized that I had been wrong. All the members of the Committee were very active in discussion and expressed their opinions frankly. I was convinced that the Committee could soon command the confidence and respect of the Western countries.

One of the most memorable things to me was the decision-making of accepting the pressure tube replacement for the gas-gap measurement. If we pull out a small number of highly irradiated pressure tubes and measure the outside diameter of the tubes, we could be more confident about our estimation of the time of the gas-gap closure. At that time, however, the EBRD virtually prohibited removal of pressure tubes even for the purpose of acquiring data because the pulling-out of pressure tubes was the same thing as the replacement of the tubes that...
meant the extension of the reactor life. In spite of such negative attitude maintained by the EBRD, the Committee thought that the Ignalina NPP should be allowed to pull out the pressure tubes for measurement. I believe that our decision on this issue proved to be appropriate.

What is your opinion of Lithuania's activities in upgrading nuclear safety at the Ignalina Nuclear Power Plant, developing the nuclear safety regulating system, etc.?

I appreciate the efforts made by Lithuania to implement various measures for safety improvement. Considering the post-independence situation of Lithuania, I have been very much impressed by the result. The success is basically due to the financial aid and the technical assistance provided by the West. However, I cannot miss the invisible effect of high quality human resources in Lithuania. At first I wondered how the intellectual and mental legacies of the former Soviet times influenced the behavior of the people. Of course, I found some bad habits apparently inherited from the former oppressive society, but I realized that the science education given by the former Soviet system was great and effective to challenge the new technology. I was also impressed by their flexibility in absorbing the new culture.

What do you think of the Ignalina NPP's efforts in ensuring nuclear safety?

The great success in upgrading the nuclear safety of the Ignalina NPP is obvious. In my view, the most important achievement is the human-related and organizational changes at the plant. Good discipline has been established and the atmosphere in the plant has changed. I also see in the Ignalina NPP quite a few good practices that have been recommended universally from the viewpoint of human-factor engineering. Hardware and regulatory systems are important but the last key to the safety is in operators' hands. In this respect their efforts should be highly appreciated.

What is your opinion of the activities of the Lithuanian Technical Support Organizations?

The technical support organizations are the basis of bearing a legitimate technical corps for the Lithuanian nuclear sector. In a sense, VATESI is the headquarters to wage a war for a great cause of the nuclear safety. Then, VATESI needs a strong army corps. So far a mixed corps has supported VATESI. The Licensing Assistance Project (LAP) has provided a strong foreign legion with the young Lithuanian technical groups. In this arrangement we can see successful international cooperation to foster Lithuania's own technical corps. The time has come to establish an independent technical support organization without foreign assistance. It is a vital question if VATESI has its own legitimate technical support organization.

What positive changes in Lithuania's nuclear power sector could you mention? What are the issues that demand more attention? How do you imagine the future of nuclear energy in Lithuania?

The managerial and organizational changes at the Ignalina NPP are worth mentioning at first. Though the Swedish efforts toward the achievement of the goal have been enormous, the positive amenability shown by the personnel should be appreciated. The change of the Ignalina NPP's legal position is also important. As an independent enterprise, the Ignalina NPP has taken the first step toward self-responsible management. From now on we should pay enough attention to unnecessary political interventions. When I came to this country for the first time in 1995, the relations between VATESI, the nuclear energy department in the Government, the Ignalina NPP, the Lithuanian Energy Institute and Kaunas Technological University did not look well harmo-
nized. In particular, the Ignalina NPP seemed to be a big foreign body in the Lithuanian nuclear sector. Now the relations are closer and cooperative. This change is an evidence of maturity of Lithuania's nuclear power sector.

There are three issues that I would like to keep watching. The first is the decommissioning of Unit 1. The second is the safe operation of the Ignalina NPP in a discouraging atmosphere of preparing for the decommissioning. The third is the relations between the Ignalina NPP and the new Lietuvos Energija. I believe that the latter is the most important for the future of the Lithuanian energy sector.

Concerning the nuclear energy in Lithuania I imagine a silver lining future. The permanent closure of Ignalina Unit 1 will be done as it is scheduled and the early stage of the decommissioning will be in progress without major troubles. The fate of Unit 2 is a little uncertain, but sooner or later it will be closed down and decommissioned. A new nuclear reactor may or may not be built. It will depend not only on Lithuania's choice of energy policy but also on the world energy situation in ten years.

Lithuania is going to join the EU soon. I do not know whether the Committee will exist afterwards. At least the nature of the Committee will change on that occasion. I do not think that I will be a member of a renewed committee.

I know that a big question in Lithuania is whether Lithuania will build a new nuclear power plant or not. If you do not do anything else except close down the Ignalina NPP, Lithuania is sooner or later going to be a small country that depends more and more on the Russian fossil fuels. It is worth demanding the reason why the former Soviet Union established such a big power center at Visaginas. The Ignalina NPP is located in the center of an energy-starved region spreading over the northeast of Europe. Now most countries in EU have matured into a society of high living standard, while the countries surrounding Lithuania are in a developing stage. Obviously they need more energy for their future economic growth. The difference is clear between the West and the East. Electricity demand in the West is almost saturated. Accordingly, small supplementary generating units like the wind-power are sometimes suitable for meeting the demand. On the contrary, the East needs big units to satisfy their huge potential appetite. In the northeast of Europe all the socioeconomic factors seem to be favorable to a new nuclear power plant. It is, however, difficult to find good investors for building a big nuclear power plant. We cannot expect quick returns from the money invested in new nuclear power plants. I hope that the global atmosphere will change in some ten years' time.
The changes that have been implemented in Lithuania over the last decade, aimed at upgrading the safety of Ignalina NPP, are exemplary from different points of view.

The starting point was the early establishment of a Nuclear Safety Authority (VATESI), immediately after regaining independence, in order to ensure full responsibility of nuclear safety control in the country. By this early act, the Government of Lithuania showed all the interest it had in the nuclear safety issue, and its resolute attachment to create appropriate conditions for monitoring this field.

The intense Safety Improvement Programmes carried out at INPP, and pursued at present with unflagging attention, represent without doubt a significant step towards upgraded safety level of operation of the units. The implementation of the Safety Culture programme on the site of Ignalina attests to the serious attention paid by the plant management to another important component of safety, the human factor: nuclear safety is not only a question of reliable systems and high quality equipment but also and above all the result of human attitude and responsible behaviour.

The excellent evolution performed by the Lithuanian Technical Support Organisations (TSOs), in particular the Lithuanian Energy Institute (LEI), forms the third side of the nuclear safety triangle (Regulator – Operator – TSOs). The recent production of the Safety Analysis Report for Unit 2 provides with this regard the best example and evidence of the remarkable progress achieved by the Lithuanian TSOs over the recent years.

Another point that deserves to be emphasised is the aptitude shown by all parties involved in nuclear safety to adapt to new challenges: the decision of the Lithuanian Government to shut down Unit 1 by December 2004, and the more recent decision related to the decommissioning, provided the occasion to note how efficiently the Plant, the Regulator and the TSOs are able to take up new challenges and organise the technical resources to face the new issues in a record time.

Nuclear safety is an unremitting activity. The Lithuanian colleagues show constant awareness and sensitivity to this point. A long way has been covered in the direction of enhanced nuclear safety but the road ahead is still long. The strong organisation (Regulator, Engineering Institutes, Operator) established now in Lithuania in the field of nuclear safety, the latest developments and the planned future activities provide good confidence in the conditions under which the Ignalina NPP is and will be managed and operated during the coming years.
An independent institution of Lithuanian and international experts

Under its chairman, Prof. Jurgis Vilemas, the Committee has discussed in detail during the recent past the following issues:

- Implementation of the measures of the Safety Improvement Programme 2 (SIP-2)
- Licensing of Ignalina Unit 1
- Installation of a diverse shutdown system at Ignalina Unit 2
- Measurements of the graphite stack / pressure tube gas gap at Ignalina Unit 1
- Production and review of the Safety Analysis Report for Ignalina Unit 2 (SAR-2)
- Progress in radioactive waste management
- Preparation of the decommissioning of Ignalina Unit 1
- Organisational and financial aspects of restructuring measures at INPP and VATESI.

Based on their international background and experience, the Committee has brought firm expert opinions related to the above issues to the attention of the Lithuanian Government. When deemed necessary, determined statements were sent by letter to the Prime Minister of the Republic of Lithuania.

In connection with the Licensing Assistance Project (LAP) which coordinates the Western assistance to Lithuania in developing the nuclear infrastructure, the Nuclear Safety Advisory Committee also wishes to facilitate the transition from assistance to cooperation in nuclear safety, given the fact that the Republic of Lithuania is on the threshold of the European Community.
THE GOVERNMENT OF THE REPUBLIC OF LITHUANIA

DECISION

Regarding resolution No. 722, dated July 4, 1997,
Concerning partial changes to resolution No. 786, dated October 21, 1992, On approval of the
Statute of the State Nuclear Power Safety Inspectorate and Establishment of Nuclear Safety
Advisory Committee of the Republic of Lithuania
No. 161, February 4, 2002

The Government of the Republic of Lithuania has decided:

Prime Minister
Algirdas Brazauskas

Minister of Economy
Petras Ėsna

Approved by
The Government of the Republic of Lithuania
by resolution No. 722, dated July 4, 1997

Nuclear Safety Advisory Committee of the Republic of Lithuania

J. Vilemas Director, Lithuanian Energy Institute (Committee Chairman)
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N. Steinberg Director General, Atomaudit Ltd., Ukraine-USA joint venture
A. Takeda Technical consultant, Nuclear Safety Research Association (NSRA), Japan
E. Ušpuras Head, Laboratory of Nuclear Installation Safety, Lithuanian Energy Institute
J. P. Weber Expert, GRS mbH - Nuclear Reactor Safety Company, Germany
**Facts and dates**

- In December 1983, the first Unit of the Ignalina NPP was commissioned, and the second in August 1987.
- On 18 October 1991, the State Nuclear Safety Inspectorate (VATESI) was established.
- In 1992, Lithuania became a member of the International Atomic Energy Agency (IAEA).
- On 17 May 1993, the Lithuanian Nuclear and Radiation Safety Advisory Committee was set up (since 4 July 1997 renamed the Lithuanian Nuclear Safety Advisory Committee).
- On 14 November 1996, the Seimas of the Republic of Lithuania passed the Law on Nuclear Energy.
- On 1 January 1997, the Radiation Protection Centre was established.
- In 1997, VATESI Licensing Assistance Project (LAP) started operating.
- On 12-23 April 1999, at the meeting of Nuclear Safety Convention participants that took place at the IAEA, the Lithuanian delegation gave its account of implementation of the Convention for the first time.
- On 29 July 1999, VATESI issued the operation licence for Unit 1 of the Ignalina NPP.
- In October 1999, the National Energy Strategy was adopted and the decision was taken to decommission Unit 1 at INPP by 2005.
- On 2 May 2000, the Seimas of the Republic of Lithuania passed the Law on Decommissioning Unit 1 of the Ignalina Nuclear Power Plant State Company.
- On 11 February 2000, VATESI issued the Ignalina NPP the licence for an interim spent nuclear fuel storage of dry type with CASTOR RBMK-1500 and CONSTOR RBMK-1500 containers.
- On 20-21 June, a Donors Conference of Western countries took place in Vilnius.
- On 12 July 2001, EC recommendations on issues of nuclear safety in the light of EU enlargement were received.
- On 15-26 April 2002, at the meeting of Nuclear Safety Convention participants that took place at the IAEA, the Lithuanian delegation gave its account of implementation of the Convention for the second time.
- In October 2002, the National Energy Strategy was adopted and the decision was taken to decommission Unit 2 at INPP in 2009.

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An interim spent nuclear fuel storage of dry type with CASTOR RBMK-1500 and CONSTOR RBMK-1500 containers.
Sincere thanks to Swedish International Project Nuclear Safety for financial support given for publishing the brochure.


In the CD you will find information about LNSAC members and activities including the minutes of all the Committee's meetings held in 1993-2003.


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