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**NUCLEAR ENERGY AGENCY
STEERING COMMITTEE FOR NUCLEAR ENERGY**

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Minutes of the 116th Session of the Steering Committee for Nuclear Energy

**Held at OECD Headquarters, 2 rue André-Pascal, Paris 16th
on 17-18 April 2008**

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English - Or. English

116th SESSION
OF THE STEERING COMMITTEE FOR NUCLEAR ENERGY
17-18 April 2008

OPENING OF THE MEETING

The Chairman welcomed the Delegates and extended special greetings to those attending their first meeting of the Steering Committee.

1. ADOPTION OF THE AGENDA [NEA/NE/A(2008)1]

The Agenda was *adopted*.

2. APPROVAL OF THE MINUTES OF THE PREVIOUS SESSION HELD ON 18-19 OCTOBER 2007 [NEA/NE/M(2007)2]

The Minutes of the 115th session held on 18-19 October 2007 were *approved*.

3. REPORT BY THE DIRECTOR-GENERAL [Oral report]

Mr. Echávarri, NEA Director-General, informed the Steering Committee of the latest developments in the Agency's activities and related matters of interest. He was pleased to be addressing the Committee for the first time in the new OECD Conference Centre and thanked the member countries for their investment in the future work and efficiency of the Organisation. He referred *inter alia* to the OECD Council meeting at ministerial level on "Reform and the Economics of Climate Change", which would be taking place on 4-5 June and to which the NEA was contributing. He noted that he had the opportunity to chair the session on "The Contribution of Nuclear Power" at the "Key Elements in Breaking the Global Climate Change Deadlock" which had been organised on 31 March-1 April at OECD headquarters in advance of the ministerial meeting. He confirmed that the Steering Committee's statement on qualified human resources had been disseminated as agreed and had generated interest in and feedback from the public and private sectors.

Regarding relations with China, a draft memorandum of understanding on co-operation in the area of nuclear safety had been prepared in consultation with the Chinese authorities and, after the resolution of a few outstanding questions, it would be circulated among national authorities for endorsement by the NEA safety committees before submission to the Steering Committee for consideration. Exploratory discussions were also being held on possible wider co-operation according to a step-by-step approach. Mr. Echávarri referred to Chinese participation in the Generation IV International Forum (GIF) and the Multinational Design Evaluation Programme (MDEP) for which the NEA provided Technical Secretariat services, as well as the recent reorganisation of the Chinese government institutions in the environmental and energy sectors which could have some impact on discussions and contacts. The OECD supported enhanced engagement with China in general, as well as specifically on nuclear safety matters. He then referred to relations with the International Atomic Energy Agency (IAEA), noting in particular the annual co-ordination meeting between the IAEA and NEA secretariats, his presentation to the IAEA Board of Governors in March and separate meeting with the IAEA Director-General, his participation in two INSAG meetings and NEA observership in the Review Meeting of the Convention on Nuclear Safety. Regarding relations with the G8, he referred to the NEA's continuing participation in the meetings of the

G8 Nuclear Safety and Security Group and contribution to the preparation of the G8 Summit documentation.

Other topics covered by Mr. Echávarri's report included: NEA participation in the World Energy Congress (WEC), the European Nuclear Assembly (ENA) and the World Nuclear University (WNU); the 50th anniversary of the OECD/NEA Halden Reactor Project; progress made in the Generation IV International Forum (GIF) and two additional accessions (China and South Africa) to its Framework Agreement; and highlights from the NEA programme of work in the areas of nuclear safety and regulation, radioactive waste management and decommissioning, radiological protection, nuclear science, the Data Bank, legal affairs and nuclear development. He recalled that the annual Co-ordination meeting of the chairs of the standing technical committees had been held on the preceding day. An NEA senior staff retreat had also been organised at the beginning of the year to take stock of how nuclear energy was evolving and what might be the impact(s) on the Agency's strategies for the years to come. In concluding, he expressed his thanks to Mr. Tanaka, NEA Deputy Director for Safety and Regulation, who would be returning to Japan in July, and announced that Mr. Yoshimura, also of Japan, would be immediately taking up the functions of this post. Mr. Echávarri thanked the Government of Japan for providing important support to the Agency and its work. Further details concerning NEA ongoing activities were provided, as customary, in the written version of the report made available to Delegates.

The Delegate from Japan expressed his country's appreciation of the stepwise approach being pursued by the Director-General and the Steering Committee to reinforcing relations with China, especially in the area of nuclear safety, and looked forward to receiving further reports on progress made in developing a framework for co-operation.

The Delegate from Norway informed the Committee of the plans to celebrate the 50th anniversary of the Halden Reactor Project on 11 June 2008 in Oslo, Norway. He noted in particular that this was the longest-running OECD/NEA joint project and also the largest. He described the main research areas of the project (safety, fuel materials, control room design, human factors) and pointed out that 120 organisations from 17 countries were participating. The NEA nuclear safety and regulation committees were organising their June meetings in Oslo in conjunction with the event. The celebration would include a seminar on nuclear safety and international co-operation at which the NEA Director-General would be a keynote speaker. The Delegate thanked participants and the NEA for the strong support that had already been expressed for the project's next three-year mandate.

The Delegate from Turkey informed the Committee of a new Law on Construction and Operation of Nuclear Power Plants and Energy Sales which had been adopted in Turkey on 21 November 2007. The law established criteria for building new plants as well as a number of bidding conditions and incentives, including that the NPP should come into commercial operation before 2020. **Ms. Schwartz**, Head of NEA Legal Affairs, indicated that those interested could read the full text in the latest edition of the NEA *Nuclear Law Bulletin*. She also noted with interest that the law required the company building the NPP(s) to allocate 1% of its turnover to R&D.

Mr. Tanaka expressed his gratitude to the members of the Steering Committee for the support they give to NEA work. He considered it an honour to have worked at an Agency with such a strong reputation for its efficiency and beneficial products for member countries, and a great pleasure to have worked with very highly qualified colleagues, whether members of the Secretariat or national experts. **The Chairman** noted that the NEA would not be the effective and efficient Agency that it was without the competence, intelligence and hard work of its staff members, and thanked Mr. Tanaka for all his efforts.

The Steering Committee:

- i) **noted with appreciation** the report by the Director-General, which was made available as a room document;
- ii) **noted** the information provided by the Delegate from Norway on the celebration of the 50th anniversary of the Halden Reactor Project on 11 June 2008 in Oslo, Norway, and by the Delegate from Turkey on the new Law on Construction and Operation of Nuclear Power Plants and Energy Sales which entered into force on 21 November 2007;
- iii) **thanked** Mr. Takanori Tanaka, NEA Deputy Director for Safety and Regulation, for his contribution to the work of the Agency and wished him success in his new responsibilities in Japan starting in July 2008.

PART I – PROGRAMME OF WORK AND BUDGET

4. **MAIN LINES OF THE NEA PROGRAMME OF WORK FOR 2009-2010** [NEA/NE(2008)3]
Status Report on the NEA Budget for 2007-2008 [NEA/NE(2008)3/ADD1]
Status of Activities of the NEA Standing Technical Committees – Annual Report
[NEA/NE(2008)3/ADD2]
Status Report on Current NEA Joint Projects [NEA/NE(2008)3/ADD3]
Status Report on Cost-free Experts at the NEA [Room document]
Status of Voluntary Contributions Provided to the NEA for 2007-2008 [Room document]

Ms. Dunn Lee, NEA Deputy Director-General, introduced this item of the agenda for which four official documents and two room documents had been prepared. She noted that this was the first presentation of the main lines of the 2009-2010 programme of work to the Steering Committee. It was grounded on the NEA Strategic Plan and included a clarification which recalled that Steering Committee approval was required for non-member participation in the programme of work as set out in NEA/NE(2005)3. Regarding the status report on the 2007-2008 budget, she informed the Delegates that in the fall of 2007, the OECD Council had decided to limit the overall salary increase to 1.7% instead of the original provision of 2.8%, while leaving the budget envelopes for both Chapters 33 and 34 unchanged. It was intended to use the difference between the original and final salary increase to eliminate some of the delays being applied before filling vacant posts, a practice which had been constraining hiring while the work of the Agency was increasing.

Regarding sales of publications, she pointed out that revenues were 18K euros below the estimate in 2007 and that the shortfall had been taken from the regular budget. She considered that this demonstrated the need for prudence when forecasting publications revenue and stressed the need to protect the integrity of the budget by reducing future estimates. In terms of overheads paid to the OECD, she informed the Committee that phased reductions were proceeding as planned, with the first of four reductions having been made in 2007. As regarded staffing, she noted that the Secretariat intended to fill the two project posts for the Thermochemical Database (TDB) project in May 2008, and to open one new post each in the Nuclear Development Division and in the Radiological Protection and Waste Management Division as soon as sufficient funds were available. Ms. Dunn Lee recalled that the latter two posts had been made possible by the reduction in overheads. It was also planned to replace a B2 and a B4 post in the Office Automation Unit with two B3 posts. In closing, she reported that consolidation of office space continued

and that the Agency had succeeded during this process to negotiate a lower rental price per square metre of both new and existing office space.

The Delegate from the United States drew attention to the current budgetary pressures in the United States and therefore encouraged the Secretariat to seek ways to maximise efficiency in the 2009-2010 programme of work. **The Delegate from Switzerland** provisionally accepted the documents and decisions proposed, but requested a one-week delay as he had not yet received replies from all his Swiss colleagues. **The Chairman** accepted the request, specifying that the Committee would be invited to take the decisions proposed in NEA/NE(2008)3 but that the Secretariat would not take action until one week had passed. Consultations would take place only if the Swiss Delegation encountered any difficulties with the document.

Referring to the footnote on page 4 of the document, **the Delegate from Austria** requested further details on the Secretariat's intentions concerning the NEA Strategic Plan given that its current validity ended in 2009. **Mr. Echávarri** explained that initial discussions on reviewing the Strategic Plan had begun at the senior staff retreat in January and at the Steering Committee Bureau meeting held on the preceding day. Based on those discussions, at the October 2008 meeting of the Steering Committee the Secretariat planned to formally request the Steering Committee members to extend the validity of the current Strategic Plan by one year, which would enable its future validity and timing to be aligned with the biennial programmes of work. The decision also made sense in terms of availability of human resources as the Agency had taken on a considerable extra workload to prepare the 50th anniversary and the publication of the *Nuclear Energy Outlook*. Details of the revision process for the Strategic Plan, including external participation, would be presented at the April 2009 meeting of the Steering Committee.

Regarding Activity 7.1 on Climate Change and Nuclear Energy Build Rates, **the Delegate from Austria** requested that the consideration of CO₂ emissions from the nuclear fuel cycle include such aspects of the back-end of the fuel cycle as decommissioning activities and waste management and disposal so as to be on a methodological par with analyses of other energy sources. **Ms. Dunn Lee** assured him that she would inform the Nuclear Development Committee of this request. Regarding Activity 9.3 on Risk Assessment, **the Delegate from Austria** recommended that a harmonised approach or standard methodology be developed for probabilistic safety assessments (PSA) if this was not already the case. **Mr. Reig**, Head of the NEA Nuclear Safety Division, explained that an agreed methodology already existed and that the recommended approach had already been discussed and agreed by the NEA Working Group on Risk Assessment (WGRISK). However, differences could be noted in the ways countries applied the agreed approach, including for external events for example. Such differences were being considered to some extent by the WGRISK and Mr. Reig agreed to convey the Delegate's recommendation to the Working Group to see if there were any additional ways in which the Group could address these concerns.

The Chairman invited the Delegates to take the decisions proposed in NEA/NE(2008)3.

The Steering Committee:

- i) **approved** the Main Lines of the Programme of Work (POW) for the Agency and its Data Bank for 2009-2010;
- ii) **approved** transmittal of the POW to the Secretary-General for eventual submission to the Council;
- iii) **noted** the budget situation with respect to the NEA, as outlined in Addendum 1;

- iv) *noted* the document containing the status reports of the chairs of the standing technical committees on the activities of their respective committees, as presented in Addendum 2;
- v) *noted* the document containing the reports on current NEA joint projects, as presented in Addendum 3.

PART II – MATTERS OF GENERAL INTEREST

5. OECD ENLARGEMENT AND ENHANCED ENGAGEMENT PROCESS [Oral report]

Mr. Echávarri recalled that it was important to monitor how NEA policies on outreach fitted into overall OECD policy. He noted that the current priorities for the NEA were the Russian Federation and China, as described in the NEA Strategic Plan, while adding that the new OECD dynamics would have implications in the future. He was pleased to introduce Ms. Thelma J. Askey, Deputy Secretary-General of the OECD, who had agreed to come to the meeting to provide further details to the Steering Committee on the OECD enlargement and enhanced engagement process.

Ms. Askey began by saying that she appreciated the opportunity to address the NEA Steering Committee and was seeking to do the same for other committees across the Organisation. She felt, however, that the NEA was particularly interesting because of its special status, and that there was much to be learnt on both sides about these important candidate countries. She recalled that five countries (Chile, Estonia, Israel, the Russian Federation and Slovenia) had been invited to begin the accession process to the OECD, and that five others (Brazil, China, India, Indonesia and South Africa) had been selected to be part of an enhanced engagement process with a view towards membership at an undefined moment in the future. The countries would, of course, have to meet OECD criteria and converge with its key principles, and potential areas of convergence and mutual benefit were an expected part of the process.

Regarding membership enlargement, she expected that all the candidate countries except the Russian Federation would likely complete the accession process within two to three years. There were already many areas of convergence for these four countries and their policies and laws closely conformed to OECD principles and legal instruments. As there were fewer areas of convergence for the Russian Federation, the process was expected to take slightly longer. In November 2007, the OECD Council approved the accession road maps which established a common mechanism for all candidate countries. Since then, the Secretariat had begun actively working with the candidates. She added that most committees had established questionnaires for these countries in order to be able to make their recommendations to the Council regarding accession. The Council would then examine each case in light of these recommendations and the core values of the Organisation.

Enhanced engagement involved another process which included *inter alia* discussions at the political level to ascertain priorities and interests, and to develop a partnership approach to creating relationships with greater impact and mutual benefit. She noted that the NEA was already engaged on several fronts. She further noted that consideration was being given within the Secretariat on how to create a cohesive approach in terms of activities in which these countries would become involved. Another aspect concerned implications for relations with other international organisations. The Council would be addressing all aspects at its forthcoming meeting at ministerial level to which all ten countries had been invited.

Regarding the NEA, she expected that the Agency would be looking into whether a degree of stepped-up activities was warranted with these countries, from both sides' perspectives, and to see how a closer relationship could be established given the NEA's own criteria and rules. She looked forward to the

Agency expressing its interests and the ways in which these interests might be fulfilled. She also welcomed for co-ordination purposes further information on relations already established and progress recently made.

The Delegate from Austria commented on the somewhat particular nature of nuclear energy matters and the status of countries in terms of having nuclear weapons or not, and adhering to the Treaty on the Non-Proliferation of Nuclear Weapons. He considered that these were important distinctions to make when discussing the co-operation and accession process given that the Organisation was determined to foster the peaceful use of nuclear energy.

The Steering Committee *noted with appreciation* the report by Ms. Thelma J. Askey, Deputy Secretary-General of the OECD, on the OECD enlargement and enhanced engagement process.

6. 50th ANNIVERSARY OF THE OECD NUCLEAR ENERGY AGENCY (NEA) [Oral report]

Mr. Echávarri informed the Committee members that the anniversary celebrations would take place in these new conference facilities. There would be three events: a high-level session, a reception and a VIP dinner. The OECD Secretary-General would be attending the celebration himself and had sent invitations to a number of ministers. Mr. Echávarri hoped that many countries would participate. He asked Committee members to help support ministerial level participation in their countries. Dr. ElBaradei, IAEA Director-General had confirmed his participation and would also be addressing the OECD Council on the morning of 16 October. Two publications were being prepared in conjunction with the event: a commemorative brochure on the history of the Agency and a first-ever *Nuclear Energy Outlook*. This Outlook, as many other Outlooks prepared across the Organisation, would present a variety of data and policy scenarios regarding nuclear energy use up to 2050. He thanked those member countries who had provided voluntary contributions to help in the preparation of this Outlook, which lay outside the programme of work. The official launch of the Outlook would take place on 16 October and media coverage was planned. He looked forward to the participation of all Steering Committee members and other important delegates from the member countries, which would substantially contribute to the event's success.

The Delegate from Austria was pleased to confirm that Austria would make a voluntary contribution to the *Nuclear Energy Outlook*; a letter of confirmation would follow in due course. **The Delegate from France** announced that the French authorities would contribute 40K euros to the publication and expressed his country's strong support for this important piece of work, which he was confident would be of high quality.

The Delegate from Canada requested further information regarding the review process for the Outlook. **Mr. Echávarri** replied that the Outlook was being prepared under the responsibility of the Secretariat, as for other OECD Outlooks. Each NEA division would contact bureau or committee members as required for eventual questions of clarification and the drafting process would be transparent, but it was not the intention to send the manuscript to the standing technical committees for approval. He noted that the publication would be produced in English, French and Japanese, and that the Secretariat was open to other suggestions if countries were interested in translating it.

The Delegate from Norway enquired whether the intention was to develop over time a predictive capability similar to that of the *World Energy Outlook* and to cover various important aspects, such as technology, economic competitiveness and the development of competing energy sources. **Mr. Echávarri** replied that some scenarios would be presented relying in part on other reliable sources, such as the International Energy Agency (IEA), for certain data. The book did not make predictions about the future, but rather projections of possibilities. The book also covered a number of important topics for nuclear energy use, including nuclear safety, radioactive waste management, non-proliferation and the fuel cycle.

The Steering Committee *noted* the progress report of the NEA Secretariat regarding the preparations and the programme for the special events organised on the occasion of the NEA's 50th anniversary.

PART III – SPECIFIC PROGRAMME AREAS

Nuclear development

7. STATUS REPORT BY THE CHAIR OF THE COMMITTEE FOR TECHNICAL AND ECONOMIC STUDIES ON NUCLEAR ENERGY DEVELOPMENT AND THE FUEL CYCLE (NDC) [Oral report]

Ms. Guindon, Chair of the Committee for Technical and Economic Studies on Nuclear Energy Development and the Fuel Cycle (NDC), presented the NDC's recent achievements and future plans. She began by noting that many of the underlying fundamentals of the nuclear energy sector remained much the same as in 2005, when the work of the NDC was last presented to the Steering Committee. Nuclear energy could provide base-load electricity while helping to mitigate climate change, and a growing number of countries appeared to be regaining interest in this energy source. However, electricity demand also continued to grow while the nuclear share of supply still remained at about 23%. She also noted that the absence of new plant construction for long periods and reduced R&D funding limited the pool of skilled personnel. Ms. Guindon then described the overall work strategies and types of activities adopted by the NDC which sought to provide policy makers with objective data and analyses on which to base their policy choices. Many NDC achievements since 2005 were cited and particular reference was made to the NDC study on *Risks and Benefits of Nuclear Energy* and its findings. She provided an overview of ongoing work addressing the economics and data of nuclear development as well as strategies and policy analysis for nuclear development. In closing, she noted that NDC work in 2009-2010 would focus on assessing nuclear energy in the context of sustainable development and climate change issues, the competitiveness of nuclear energy, how to maintain the option's viability, natural resources and technologies.

The Delegate from Switzerland noted that many interesting studies were being produced by the NDC, but that they were not always reaching the directors and ministers responsible for nuclear energy decision making in the member countries. He suggested that the opportunity be taken during the 50th anniversary celebrations to draw their attention to these studies.

The Delegate from the United States considered that knowledge management was an important concern worldwide and asked whether the NDC was addressing this issue, including public education aspects and improving public confidence in nuclear energy. **Ms. Guindon** replied that a thorough study had been undertaken by the NDC several years ago and pursuant to that study, an activity on education, training and knowledge management had been included in the 2009 programme of work. The first study had addressed public education, including primary school curricula, but it was not planned to address this particular issue in the new study. **Mr. Gordelier**, Head of the NEA Nuclear Development Division, confirmed that both the 2000 and 2005 studies had addressed the issue of public education. He was pleased to learn in the annual co-ordination meeting of the standing technical committees held on the previous day that many committees were interested in this subject, and he confirmed that the new activity would be carried out in co-operation with other sectors of the Agency. **Ms. Dunn Lee** added that following the statement by the Steering Committee on qualified human resources in October, positive responses had been received, reinforcing the notion that this was still a very relevant topic today. She encouraged all NEA committees to think about how education and training could be enhanced in order to prepare the future of

nuclear power. She further noted that NEA joint projects were an effective means for pooling resources for advanced research at a time when many governments were facing budgetary constraints.

The Representative from the IAEA noted that all IAEA documents were made available free of charge on its website and suggested that making knowledge management reports available online for free would help ensure wider dissemination of this material to a larger audience. **Mr. Dujardin**, NEA Deputy Director for Science and Development, explained that the Agency had a policy based on that of the Organisation as a whole whereby many reports were made available for free on the website but that some sales of publications were considered to be warranted for a number of reasons.

The Steering Committee *noted with appreciation* the report by Ms. Sylvana Guindon, Chair of the Committee for Technical and Economic Studies on Nuclear Energy Development and the Fuel Cycle (NDC) on the achievements of this standing technical committee and prospects for its programme.

8. NEA CO-OPERATION ON THE NUCLEAR ENERGY CHAPTER OF THE IEA'S 2008 EDITION OF *ENERGY TECHNOLOGY PERSPECTIVES* (ETP) [Oral report]

Mr. Gordelier presented highlights from the nuclear chapter of the IEA's 2008 edition of *Energy Technology Perspectives* (ETP), noting that this was the first time that the NEA had been requested to produce the first draft rather than to comment on drafts prepared by the IEA. He presented several graphs from the chapter which addressed the current status of nuclear generation, future technology options and alternative uses of nuclear power. Regarding the status of nuclear electricity generation, a number of countries, including several developing countries, were considering a future role for nuclear energy, particularly in light of its security of supply and near absence of CO₂ emissions. The historic build rate and world GDP growth suggested that it would be possible to design and construct nuclear power plants at a sufficient rate to meet current projections. Regarding costs, in many circumstances nuclear energy was competitive against coal and gas generation, and carbon pricing would further increase the competitiveness of nuclear generation. Based on current demand, conventional reserves of uranium, supplied by a diverse range of politically stable countries, were adequate for at least 270 years. Commercial development of fast breeder reactors would mean almost unlimited stocks. Numerous other details were also provided in the chapter, whose key message was that for those countries that chose to use it, nuclear power offered a considerable energy supply potential that was safe, reliable, economic and virtually CO₂-free.

The Delegates from Austria and Norway congratulated the Secretariat on this work. **The Delegate from Norway** considered that the ETP methodology was very interesting and relevant for nuclear power. He was particularly interested in the investigations into nuclear energy's capacity to help mitigate climate change. **The Delegate from Austria** referred to the estimated industrial capacity to build approximately 100 reactors per year, and asked how long the lead time might be to develop that capacity as well as the regulatory capacity such an expansion would demand. **The Chairman** highlighted the fact that currently, only one company had the capacity to do large forging, with a capacity of five reactor vessels per year, for example. **Mr. Gordelier** replied that both industrial and regulatory capacity were important, that expansion of capacity would depend on the firmness of demand for new build, but that one could expect it to take about ten years to return to significant industrial capacity.

The Delegate from Switzerland queried the readability and the clarity of the message of the graph comparing frequency-consequence curves for the number of fatalities associated with full energy chains. **Mr. Gordelier** agreed that the graph would be complicated for an average reader in the general public, but expected that it would be accessible to policy makers in the energy field. He nevertheless welcomed any suggestions on how to improve it.

The Delegate from the United States requested further elaboration regarding the 270-year supply of uranium, notably whether that estimate was based on the introduction of fast breeder reactors. **Mr. Gordelier** specified that this data had been taken from the NEA/IAEA “Red Book”, and that the figure of 270 years was based on the amount of uranium for which there was good geological confidence that it existed and on current consumption rates and profiles. He considered that it was also important to note that this figure obviously did not take account of new discoveries which could be made in the context of increased exploration being driven by the rise in the price of uranium. Uranium resources were not considered to constitute a constraint on the future use of nuclear energy.

The Steering Committee:

- i) **noted** the report by the Secretariat on the NEA’s preparation of the nuclear energy chapter of the 2008 edition of *Energy Technology Perspectives* (ETP), to be published shortly by the International Energy Agency (IEA);
- ii) **supported** NEA co-operation with the IEA in this context.

Legal affairs

9. CONVENTION ON SUPPLEMENTARY COMPENSATION FOR NUCLEAR DAMAGE (CSC) [Oral reports]

Two reports were made under this item of the agenda. The first was by Mr. Ben McRae, US Delegate to the Nuclear Law Committee, on the Convention on Supplementary Compensation for Nuclear Damage (CSC) and the second by Mr. Roland Dussart-Desart, Chair of the Nuclear Law Committee.

Mr. McRae, US Delegate to the Nuclear Law Committee, began by thanking the Director-General for this opportunity to speak about the CSC, which was a very important convention. He informed the committee that the United States would be ratifying the CSC in the coming weeks. He described the context which had led to the establishment of the CSC, and how important an issue liability had become in carrying out international projects. The NEA Nuclear Law Committee had worked very hard to help devise a convention that would enable parties to the Paris and Vienna conventions, as well as countries with particular national legislation such as the United States and Japan, to come under one international liability framework. More specifically, the CSC was developed to create a framework for allocating responsibility for compensating for nuclear damage resulting from a nuclear incident and for assuring, in the unlikely event of such an incident, the prompt availability of meaningful compensation with a minimum of litigation and other burdens. Two tiers of compensation were foreseen: the first to be provided by the operator and if required, the installation state, amounting to 300 million special drawing rights (SDRs), and the second to be provided by the parties to the CSC, the amount of which would be determined by the number of nuclear power plants in those countries. The CSC would also allow a CSC party to establish a third tier of compensation in excess of the first two. Mr. McRae then provided further details as to why the CSC was attractive to both nuclear electricity generating and non-generating states. He stressed the importance of prompt ratification of the CSC by as many countries as possible, including all NEA member countries. He offered to provide further details regarding the CSC to any of the Delegates who wished.

Mr. Dussart-Desart then gave a presentation on the lead-up to US ratification of the CSC and future perspectives for the convention. He outlined the history of the negotiations that led to the creation of the CSC, comparing the CSC and the Brussels Supplementary Convention, their contribution formulae and the safeguards they provided. He noted that the CSC and the Joint Protocol Relating to the Application of

the Vienna Convention and the Paris Convention (JP) both created a link between the Paris and Vienna Conventions, but some considered that the JP might lead to disparities in the levels of compensation disbursed. He highlighted the fact that the CSC ensured that the levels of compensation to be made following a nuclear accident had been considerably increased from what they would be under the JP. In addition, he underlined the major advantage of the CSC in that it allowed the United States to become a part of the international nuclear liability regime. Five states representing 400 000 “units” of installed nuclear capacity (or roughly 400 000 MW_{th} of installed capacity as defined in the convention) would need to ratify the CSC before its entry into force. He examined the possible reasons why only four had ratified to date, citing *inter alia* the multiplicity of instruments available, the manner of allocating compensation and an unwieldy conventional procedure. He nevertheless felt that US ratification constituted a giant step forward towards bringing the CSC, an instrument of global calling, into force.

Mr. McRae commended Mr. Dussart-Desart on his explanations and recalled that significant efforts had been made by NEA member countries for over 15 years to update this liability system. He acquiesced that there was no perfect solution and that certain hypotheses could be imagined where the system might not work. He believed, however, that the CSC covered the possible scenarios better than other conventions.

Mr. Echávarri thanked both speakers for their presentations. He considered that the CSC would be beneficial for industry, but also for governments and members of the public in ensuring that a full range of liability issues were well covered. **The Chairman** wondered whether it would be interesting to organise a policy debate on this subject, addressing in particular the reason why certain countries had decided to adhere or not to adhere. **Mr. Echávarri** favoured the preparation of a publication for policy makers comparing the different elements of the international third party liability regimes.

The Steering Committee *noted with appreciation* the reports by Mr. Ben McRae, US Delegate to the Nuclear Law Committee, on the Convention on Supplementary Compensation for Nuclear Damage (CSC) and Mr. Roland Dussart-Desart, Chair of the Nuclear Law Committee, about the implications of this new Convention on the international nuclear liability regimes.

Nuclear safety

10. MULTINATIONAL DESIGN EVALUATION PROGRAMME (MDEP) [NEA/NE(2008)4]

Mr. Reig, Head of the NEA Nuclear Safety Division, provided an update on the Multinational Design Evaluation Programme (MDEP). He recalled the goals of the MDEP as well as the scope of the pilot project. At its March 2008 meeting the MDEP Policy Group concluded that significant benefits would be gained for all members by continuing with this multilateral effort; formalising interactions and co-operative arrangements for specific reactor designs; and combining the various stages of the MDEP into a single programme. The Policy Group approved the MDEP programme of work and defined ten activities for its working groups. The Policy Group also invited the NEA to act as Technical Secretariat. The NEA would develop and maintain the IT activities needed for MDEP work. The required NEA resources would be funded through voluntary contributions provided by MDEP member countries. Further details concerning the programme and the proposed decision by the Steering Committee could be found in NEA/NE/2008(4).

The Delegate from Japan highly appreciated the contribution of the NEA Secretariat to the programme, which his country believed would enhance nuclear safety in the future. He encouraged the NEA Secretariat to make the necessary arrangements to ensure proper liaison between MDEP activities and those of the NEA. **The Delegate from the United States** commended the progress in the MDEP programme and looked forward to continuing interactions in this field.

The Delegate from Germany asked for clarification regarding the task of the Multinational Vendor Inspection Working Group as well as further details concerning the reliance on inspection information provided by the manufacturing country. **Mr. Reig** replied that, as regarded component manufacturing oversight, the objective was to avoid a duplication of work among regulators, initially among MDEP regulators, but ultimately beyond MDEP membership as well. **The Representative from the IAEA** queried whether under the MDEP programme information received from the vendor could be released more widely. **Mr. Reig** explained that the regulators had an agreement with the vendors for access to the information, but that the NEA itself did not. The role of the NEA was to circulate that information among MDEP members. **The Chairman** invited the Steering Committee to take the decision cited in NEA/NE/2008(4).

The Steering Committee:

- i) **noted** the proposed role of the NEA to provide technical secretariat services for the Multinational Design Evaluation Programme (MDEP) while **also noting** that NEA involvement would be entirely funded by voluntary contributions or contributions in kind from the MDEP members;
- ii) **acknowledged** that such an NEA role was consistent with the NEA mission and with the information previously provided to the Steering Committee;
- iii) **took note** of the mechanism outlined in the document NEA/NE(2008)4 for the provision of such secretarial services at the request of MDEP members;
- iv) **requested** the Director-General to keep the Steering Committee regularly informed of these activities.

Joint projects

11. THE IMPLEMENTATION OF A NEW PHASE OF THE OECD/NEA SORPTION PROJECT IN THE RADIOACTIVE WASTE MANAGEMENT AREA – SORPTION PROJECT PHASE III [NEA/NE(2008)5]

Mr. Riotte, Head of the NEA Radiological Protection and Radioactive Waste Management Division, described the implementation of the new phase III of the OECD/NEA Sorption Project. He noted that sorption was one of the most important processes to consider for providing safety of geological disposal in the very long term, and he described the relative importance of barriers over time. He then provided an overview of phase III of the Sorption Project, including its objectives, budget (430K euros), time frame (2008-2010) and participants. A total of 15 waste agencies, regulatory authorities and R&D institutions from 12 member countries were participating. He added that the project was strongly supported by the NEA Radioactive Waste Management Committee (RWMC) and its Integration Group for the Safety Case (IGSC). He recalled that NEA joint projects provide a well-functioning framework for sharing experience and for promoting scientific understanding. Further details concerning the programme and the proposed decision by the Steering Committee were available in NEA/NE/2008(5).

The Delegate from the United States indicated his country's support for phase III of the Sorption Project and its intention to use the guidance document that would be prepared. He added that there could be potential for other applications of the information provided by this project, for example to low-level waste disposal or technologies such as *in situ* leaching. **The Delegate from Australia** agreed and specified that broader applicability to such areas were considered by his country as one of the added benefits of the

project. Responding to a question from **the Delegate from Germany, Mr. Riotte** replied that issues surrounding climate change were addressed in the NEA programme of work, but not in the Sorption Project. **The Chairman** invited the Steering Committee to take the decision cited in NEA/NE/2008(5).

The Steering Committee *noted* the implementation of the third phase of the OECD/NEA Sorption Project in the radioactive waste management area among interested member countries, as provided under Article 5b) of the NEA Statute.

PART IV – PROCEDURE

12. DOCUMENTS APPROVED UNDER THE WRITTEN PROCEDURE

The Steering Committee *noted* the adoption under the written procedure of:

- i) “Programme of Conferences and Symposia for 2008-2012” [NEA/NE(2008)1/REV1] on 21 March 2008;
- ii) “Draft 2007 Annual Report on the Activities of the OECD Nuclear Energy Agency” [NEA/NE(2008)2] on 14 March 2008.

13. DATE OF THE NEXT MEETING

The Steering Committee noted that the next meeting was scheduled to take place on **16-17 October 2008**, with the 50th anniversary celebrations taking place in the afternoon and evening of 16 October, and that it was planned to hold the spring session on **28-29 April 2009**.

14. OTHER BUSINESS

The Chairman indicated that a policy debate would not be organised at the Steering Committee’s meeting in the fall, welcomed suggestions for the following policy debate in April 2009, but suggested that the decision on the topic to be addressed not be taken until October. **The Delegate from Austria** suggested that, if a policy debate was organised on nuclear liability, it would be interesting to also hear the opinion of countries not party to any conventions. **The Chairman** agreed.

The Delegate from Austria referred to the useful way meeting materials were made available for the NEA Committee on the Safety of Nuclear Installations (CSNI) and proposed that the Secretariat provide, if manageable, all supporting documents of the Steering Committee meetings on CD-ROM, in the Delegates’ Area of the NEA website, or via some other means of electronic communication. **Mr. Echávarri** replied that this should be feasible, subject to certain time constraints.

The Delegate from Austria also requested further elaboration regarding the interface between the Committee’s regular meeting and the 50th anniversary session so as to better plan ministers’ participation and other high-level attendance. **Mr. Echávarri** specified that the regular meeting would be held on the mornings of 16 and 17 October and that the 50th anniversary session would take place on the afternoon of 16 October. **The Delegate from Switzerland** asked whether a round-table discussion on nuclear energy would be organised during the session with ministers in attendance. **Mr. Echávarri** replied that the final

format of the session had not yet been decided and would depend upon the participation of ministers and high-level officials. In principle, the ministers would be invited to make a statement on national nuclear energy policies. Consideration was given to organising a round-table discussion as well as discussions among regulators, industry and research organisations, who were important partners for the future. He stressed the importance of strong participation at the ministerial level.

The Delegate from Japan informed the Committee members that his country would hold a workshop in June, in co-operation with the IAEA, in follow-up to the very large earthquake which took place near the Kashiwazaki-Kariwa nuclear power plant. He welcomed participation from as many NEA Delegates and their colleagues as possible.

The Steering Committee:

- i) *noted* that a policy debate would not be held in October 2008 given the events planned for the celebration of the NEA's 50th anniversary, and *agreed* to adopt at its October 2008 meeting a topic for the policy debate to be held in conjunction with its April 2009 meeting;
- ii) *noted* the suggestion by one Delegate that all material (official documents, rooms documents and power-point presentations) prepared for the Steering Committee meeting be provided to Delegates in electronic format, either on the NEA website or on CD-ROM.

POLICY DEBATE ON LIFE MANAGEMENT OF NUCLEAR POWER FACILITIES

Mr. Echávarri introduced the debate and recalled its objectives. He noted that countries sometimes had very different policies regarding the life extension of nuclear power plants. The issue had several aspects, including safety, economic, and political and social issues. Safety, however, always remained a priority and was continuously under review in all countries. Several governments had been noted as saying that life extension should benefit not only the utilities but also the consumers. He hoped that the policy debate would enable the Committee members to obtain an overview of what was being done in terms of plant life management around the world and current experience. He pointed out that the NEA was very active in this field and looked forward to receiving indications of where further work should be undertaken by the NEA for the benefit of policy makers in the member countries. Regulatory issues, safety of materials and the transfer of knowledge were among the topics of potential interest in the coming years.

The Chairman then introduced the four invited speakers, who gave the following presentations:

- **NII experience of regulating life time management**
Dr. Mike Weightman, HM Chief Inspector of Nuclear Installations, United Kingdom
- **NRC regulatory approach to lifetime management**
Mr. Luis A. Reyes, Executive Director for Operations, US Nuclear Regulatory Commission (NRC), United States
- **Strategy of the Japanese industry regarding life management of nuclear facilities**
Dr. Michio Ishikawa, President, Japan Nuclear Technology Institute, Japan

- **EDF's strategy regarding life management of nuclear facilities**
Mr. Bernard Dupraz, Senior Executive Vice-President for Generation, *Électricité de France*,
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[not available electronically]

The background note and the speakers' presentations were made available to NEA Delegates at www.nea.fr/documents/sc/; new Delegates could obtain passwords for this section of the website by writing to nea@nea.fr.

Overview of the debate

Policies regarding the life extension of nuclear power plants varied across NEA member countries. Some regulatory systems defined an initial design life, for example for 40 years, and granted an operating licence for that duration. The operator would then need to apply for an extension which, based on current practice, would usually amount to 20 years and be applied for 10 years in advance. In other countries, the operating licence was based on a system of periodic safety reviews (PSRs), typically taking place every 10 years. In such situations, lifetime extension represented less of a major milestone to achieve than a case of continued, safe operation of the plant according to a set of defined criteria. In both types of systems the operator was always obliged to be able to demonstrate the safety of the plant on a daily basis and could, for example, be required to make plant modifications in order to conform with existing or new regulatory standards adopted based on the latest information available. Environmental evaluations were often carried out in addition to safety evaluations. Independent regulatory control and enforcement was considered essential in order to ensure that the continuous operation of the plants was done in a proper way. Good maintenance was also key for ensuring long-term operation. Early detection of life management issues and their corrective measures was an advantage.

Qualified human resources were another important aspect for ensuring a facility's continued safe operation. The transfer of knowledge could present challenges in certain cases of plant life extension. In some countries, having suitably qualified and experienced staff was part of the licensing conditions. Additional staff training, if required, was usually determined by the operator. A context of increasing numbers of plant life extensions helped reassure students that they could enjoy a future career in the field, thereby bolstering the potential number of new experts in nuclear power facilities and regulatory institutions.

In most cases, extending the life of a nuclear power plant presented considerable economic advantages. Once capital costs had been amortised, operating costs were relatively low, in particular in comparison with gas-fired power plants. Only in some cases, for example when a very major part such as the reactor pressure vessel needed to be replaced, could an economic argument be made against extension. Twenty-year life extensions gave more visibility to investors than ten-year extensions. Another issue concerned the deciding factors when choosing between further life extensions and new build.

New technologies could make a contribution towards enhancing the lifetime of a plant as well as plant life management. Some of the greater impacts were in terms of understanding and improving the behaviour and ageing of materials. Feedback on current experience with ageing management could also be usefully considered when designing new plants. International efforts seeking to standardise codes and new designs were expected to contribute to making future designs simpler and safer.

In some countries, the public was consulted and invited to comment before granting a construction licence or the extension of an existing operating licence to a nuclear power plant. Public opinion, and in turn political positions, could therefore be an important factor to take into account.

There was wide consensus that life management and extension of nuclear power facilities was an important topic for countries operating nuclear power facilities as well as for those which did not, and that the NEA should therefore continue activities in this area. The NEA was already active in addressing regulatory questions, economic issues, the ageing of components and other technical aspects. The added value of the Agency's work in these areas was recognised as was the opportunity to share experience internationally.

At the end of the discussions, **Mr. Echávarri** summed up the debate and highlighted the main conclusions which have been reproduced below.

The Steering Committee:

- i) **thanked** the invited speakers for their presentations;
- ii) **noted** the different regulatory approaches in NEA member countries to defining the length of a facility's lifetime and its extension, while **also noting** the common prerequisite of always ensuring safety;
- iii) **noted** that environmental evaluations were often carried out in conjunction with safety evaluations when considering the extended operation of a facility;
- iv) **concurred** that extending the life of an existing electricity-generating asset presented in most cases considerable economic advantages;
- v) **noted** the importance of maintenance and life management programmes for enabling life extension, as well as knowledge management and the availability of qualified human resources for ensuring the facilities' continued safe operation;
- vi) **subscribed** to the notion that technological evolution and increased knowledge about the behaviour and ageing of materials could have an impact not only on the possibilities for lifetime extension, but also on the initial design life of the facilities;
- vii) **noted** that social and political considerations could play a significant role in some countries in the decision-making process concerning lifetime extension, in a similar fashion to that for building new facilities;
- viii) **agreed** that life management of nuclear power facilities was an important topic for member countries and that the NEA should continue its work in this area.

COMITÉ DE DIRECTION DE L'ÉNERGIE NUCLÉAIRE
STEERING COMMITTEE FOR NUCLEAR ENERGY

116ème session du Comité/116th session of the Committee

Paris, 17-18 April 2008

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LIFE MANAGEMENT OF NUCLEAR POWER FACILITIES

Friday, 18 April 2008

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