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Editorial

Two themes dominate this issue – the global nuclear security imperative (and the need to do more than just talk about it) and the struggles to make headway on apparently beneficial common international approaches and solutions when working within the political arena. On the first, we have certainly appreciated hearing much very positive and high-level opinion bruited abroad in the last months – and we have seen some modest but important practical initiatives taken to address corners of the problem. Reading on, you will see that this debate, along with watching a year of developments in Russia, has prompted us at Arius to enter the arena with some suggestions of our own for specific actions that could be taken now - actions that would go beyond discussions in committee rooms.

On the second theme, our main offering is to be found in the Topical Article, which rehearses in some detail the disappointing tale of the progress of the Waste Directive through the complexities of EU policy-making and its gradual dilution – resulting in part from the reluctance of one EU Member State to tackle the waste issue directly. The problems of achieving common solutions, even within one country, are aptly illustrated by the news from Australia, where the federal government has given up trying to find a national repository and resorted to telling the States to sort it out by themselves – surely not an optimum solution for anyone other than the politicians.

*Neil Chapman
Baden*

Arius Internal News

ONDRAF withdraws from Arius

As presaged at the Piestany Assembly in February, ONDRAF-NIRAS decided to withdraw from Arius at the end of July, citing internal financial problems as the reason for not being able to participate further. In their formal letter of resignation, Jean Paul Mignon noted their continued support for the concept via their

participation in SAPIERR and wished Arius well in its further work. Although this is a setback for Arius at a time when our membership is otherwise growing, we are pleased to see that ONDRAF-NIRAS continues to support a dual-track approach, and note that this has also been supported at Government level in Belgium. Arius would like to thank ONDRAF-NIRAS for their positive support during the crucial initial build-up of our multinational effort.

SAPIERR reaches first major milestones

The first deliverables from the SAPIERR project, examining some of the boundary conditions for a possible European regional repository, are close to completion. A detailed review of the legal and political aspects has been co-ordinated by Christina Boutellier of Arius and preparation of a waste inventory overview (that will be used to integrate data from countries with a potential interest in a shared repository in Europe) has been co-ordinated by Vladan Stefula of DECOM, Slovakia. Final versions of these two reports are expected to be available on the SAPIERR website later this year.

Swiss media confuse Arius, SAPIERR and Russian waste proposals

In May, a radio news reporter belatedly picked up both the Arius and SAPIERR website information on Swiss participation in SAPIERR. He reported on this relatively objectively – but unfortunately linked it to a separate question he posed on whether any country had ever declared a willingness to import radioactive wastes. From the response to this (which included also reference to other instances such as earlier retention of reprocessing wastes by the UK), the reporter chose to mention only Russia. Since connections to Russia in this subject area are historically sensitive in Switzerland (following media disclosure of earlier bilateral discussions between Minatom and a nuclear utility), the garbled reporting on the main mid-day radio news was picked up by the print media and spread extensively. Arius sent corrections to the media pointing out that there were no ties between Russia and SAPIERR or Arius – but this response was, of course, not printed.

Assembly of Members, October, Hungary

The 3rd Extraordinary Assembly of Members will take place on Tuesday 12th October at Tengelic (near Paks) in Hungary. The meeting, which is expected to last just over half a day, is co-ordinated with the Regional Seminar on Waste Management, hosted by PURAM, which takes place over the following two days and which involved many Arius Members.

All Members are, of course, invited to attend the Assembly and we look forward to a good turn out. The main agenda items will be an update on SAPIERR progress and the forward Arius work programme for 2005.

The subsequent Regional Seminar hosted by PURAM represents a widening of the Czech-Slovak Seminar which has been held over the past years and which has included presentations from Arius in its recent meetings. The Seminar will focus on two topics:

- Conceptual design of a geological repository for HLW/SNF with emphasis on technical design and cost-estimation of the design (invited lecturer from Posiva)
- Strategy building for nuclear fuel cycle back-end options with emphasis on options for HLW/SNF management infrastructure, programme and planning in the medium and long term (invited lecturer from ENRESA).

Arius to propose new international initiative

At the upcoming World Nuclear Association meeting in September (see Conferences at the end of this Newsletter), Arius will present a paper calling for more definite action from the international community to help develop credible international disposal solutions for HLW and spent fuel. Although there is much topical discussion on the 'terrorism and security' issues associated with all parts of the nuclear fuel cycle, there are hardly any activities at present aimed at the waste issue – almost all current initiatives focus on the front-end (especially on control of highly enriched uranium from enrichment and from research reactors).

The nub of the Arius paper (*"Nuclear Fuel Cycle Centres - an Old and New Idea"*) is that there are two principal routes for developing shared repositories – the 'consortium' approach (as is being explored by SAPIERR) and the model whereby a country with good nuclear infrastructure offers its services as repository host, possibly along with other waste management services such as reprocessing. The Arius position is that this second option is only ever going to be credible if it is done with the full approval and participation of the major political powers concerned with global security, of the IAEA, of nations with advanced experience in repository technology and, of course, of the likely user nations.

The only country to advance itself in this context is Russia, as has been reported in several previous Newsletters. The Arius paper at the WNA will propose that an international initiative is launched to assist the Russian proposals by integrating the best global technical expertise in a specific repository project that must be more open and transparent than any of the Russian proposals to date.

Of course, any such project would need to involve the IAEA – possibly in a steering role. Indeed, this is an enterprise that seems an entirely appropriate activity for the Agency to busy itself with, given the terms of

its Charter. The Director General is increasingly highlighting the security problems of the fuel cycle in his public addresses and has recently launched a major new committee (the expert group on Multilateral Approaches to the Nuclear Fuel Cycle: see article elsewhere in this Newsletter) to consider all the issues involved, including waste.

For example, on 21st June 2004 at the Carnegie International Non-Proliferation Conference in Washington, Director General ElBaradei stated, in a paper entitled 'Nuclear Non-Proliferation: Global Security In A Rapidly Changing World':

"This approach should also be extended to the end of the nuclear fuel cycle, by developing multinational approaches to the management and disposal of spent nuclear fuel. More than 50 countries have spent nuclear fuel stored in temporary sites, awaiting disposal or reprocessing. Not all countries have the right geology to store waste underground and, for many countries with small nuclear programmes, the costs of such a facility would be prohibitive. I am encouraged that the Russian Federation is considering one such collective disposal initiative."

Our view at Arius is that, with a proposal that has as strong national government support as that from Russia, it is high time to take positive action on a specific project. Whilst there will be a continued and essential need to explore the general implications of multinational solutions over coming years, global security cannot wait until all the legal and political issues are fully resolved before it even begins to develop specific potential solutions. The two activities must run in parallel and the Russian project is a good place to start. This does not prejudice future options; there will ultimately be multiple multinational repositories and competition may be very healthy.

Arius has written to IAEA Director General ElBaradei on this matter, noting that such a project would need to have access to sufficient technical and financial resources. These could certainly be mobilised through IAEA Member States interested in using such a facility and from other, major States such as the USA that have a strong interest in reducing the risks of terrorism and proliferation. The comprehensive initiatives already being funded to reduce nuclear threats illustrate that sensible levels of support can be forthcoming. A Russian repository implementation project would require far less resources than these broader initiatives, in particular in its initial phases. When moving towards operation, which could be only in ten years or more, funding could come from future users of the facility.

Russia has been discussing their proposals with the IAEA Director General, who visited Foreign Minister Sergei Lavrov in June this year. Russia is to host a conference next year on disposing of spent nuclear fuel, but the date and venue are yet to be announced. Russia could be the first country to build a state-of-the-art geological repository for spent nuclear fuel and even be the first in the world to accept foreign spent fuel. After the meeting, Dr ElBaradei said that he was

encouraged that the Russian Federation was considering this collective disposal initiative

In our view, with all parties now having recognised the problem and with a potential solution now on the table, it seems feasible that the international community can move quickly towards exploring a realistic solution via a co-ordinated project.

International Nuclear Law

Following the Piestany meeting of the SAPIERR working group, reported on in our last issue, Wolfgang Dietze (University of Göttingen) wrote an article for the German language journal, ATW Atomwirtschaft – Atomtechnik, on the studies being carried out in the project. This was published as *“Auftakt des SAPIERR – Projekts über eine regionale Endlagerung radioaktiver Abfälle in der Europäischen Union”*.

Wolfgang Dietze, who is completing a dissertation on international disposal, also facilitated the presentation at the International Nuclear Law Association (Deutsche Landesgruppe) meeting next month in Celle, of a paper on legal issues by Christine Boutellier and Charles McCombie of Arius (see Upcoming Meetings).

International News

5th International Dubrovnik Conference

The ‘Nuclear Options in Countries with Small and Medium Electricity Grids’ conference was held in Dubrovnik from May 16th to 20th, the fifth meeting of this series. Arius was represented by Charles McCombie. A central feature of the meeting was a round table discussion chaired by Arnold Bonne of the IAEA. The other participants were Damir Subašić (APO, Croatia), Andrej Stritar (head of the Slovenian Regulatory Agency) Vladan Stefula (who was representing SAPIERR) and Miran Veselič (from ARAO, Slovenia).

Arnold Bonne pointed out that a need had been expressed by many countries for cooperation in the disposal area, and that the Joint Convention text had explicitly left the door open for such cooperation. He described the work being done on regional repositories at the Agency and quoted from the IAEA report on the subject (to which Arius contributed directly and which is due to be published soon). His main recommendation was that the proponents of regional repositories should draw up “a roadmap” for progressing towards these facilities and have this endorsed by Member States. In discussions outside the meeting and also in this session, Arnold Bonne conceded that this was not something which should be done very quickly. The roadmap should keep the options of national and multinational disposal open for some long time into the future. It was also pointed out in the discussion that this pressure to produce a roadmap was another example of large international agencies trying to put small Member States under more pressure than their larger counterparts. Some of the large IAEA countries, such as the UK, Spain,

Germany and France do not themselves have a roadmap for future disposal.

Andrej Stritar showed an interesting set of European maps, which illustrated that his home city, Ljubljana, had actually been part of many different countries over the recent centuries. This emphasised how irrational it was to bind a high-level waste repository site to current political boundaries. Stritar went on to quote the position taken on regional repositories by many large countries, namely that the small ones should “just wait and wait” until the large countries had achieved their repository goals. He pointed out, however, that this request to wait was usually coupled directly with a declaration that the big country in question would never import waste. This is what led Stritar to propose the Ljubljana initiative (see next item in this Newsletter).

Vladan Stefula also illustrated how the borders around Czechoslovakia had changed in recent years. In addition, he showed the now well-known Arius “star map” of potential national repository requirements in Europe. As usual, this map created a big impression on the audience seeing it for the first time. Miran Veselič proposed that the cooperation of the small countries should extend beyond just repositories and include other areas of radioactive waste management. In particular, he pointed out how expensive the encapsulation part of a disposal system was and suggested that there was also scope for collaborating in that area. Damir Subašić of Croatia used the example of transfers of hazardous waste to show that this is a perfectly feasible and ethical activity if properly controlled. In the discussion following the panel presentations, further support was offered for regional repositories from Dave Wade from Argonne National Laboratory in the USA, who proposed regional fuel cycle centres for the front- and back-end of the nuclear fuel cycle. There was also support from Dimitrij Khrushchov from the Ukrainian Institute of Geological Sciences, who pointed out that these ideas had been suggested in the Ukraine some ten years ago. At the special panel session, there were no comments or criticisms against the concept of shared regional repositories. There was universal recognition in the central and eastern European countries of the logic of striving for shared repositories.

Ljubljana Initiative Group meet again in Dubrovnik

Parallel to the Dubrovnik Conference reported above, the Slovenian regulator Andrej Stritar organised the 2nd meeting of participants in the “Ljubljana Initiative” started last December, following a pre-discussion at the IAEA General Conference of 2003 between Government Representatives from Croatia, Hungary, the Czech Republic, Slovenia, Austria, Bulgaria and Slovakia. The Hungarian representative was unable to attend this second meeting. The chairman also invited Arius to participate as a member of the discussion group.

The original Ljubljana Initiative had grown out of an impromptu meeting of national regulatory authority representatives who met at the annual general

conference of the IAEA. In Ljubljana it had been agreed that each representative would go back to their national government and try to get support for pursuing the concept of regional repositories, restricted to the geographical region occupied by these countries. Each member of the group had been asked to report back at this current Dubrovnik meeting on developments in their country.

Stritar himself said that there had been no negative responses in Slovenia but that there was a lot of scepticism about the realism of the proposals. The ministers involved had nothing against the concept, when it was recognised as one of several options. The option had also been included in the Krško decommissioning plan prepared jointly with Croatia. Verena Puchhammer from the Austrian Ministry, who attended together with Günther Hillebrand, informed the group that Hillebrand's organisation would take over the role of her Ministry in the SAPIERR project. She also informed the group that her Ministry was in favour of the Initiative, but that Austria was definitely not to be the site of a shared repository. The Austrians did offer to collaborate by taking other parts of the nuclear fuel cycle or of the waste management activities into their country. Puchhammer suggested that the Ljubljana Initiative should be supported by government representatives and she pointed out that Austria had had little support when promoting the regional repository concept in the Brussels working group on the Waste Directive. All of the other attendees also reported that they had not encountered any opposition in their countries to pursuing the concept of regional repositories.

Andrej Stritar accepted the arguments of all present that his original idea of a "ticket" for entry to the group was not realistic. This ticket had been intended to be a declaration from each country that they were potentially a hosting country for a regional repository. The argument put by Arius that the question of hosting a shared repository should not be treated in the first phase of any project was supported by all the members of the group. The analogy was made to national programmes, which also do not nominate a specific site at the very beginning of their efforts. Time is needed for clarifying the conditions to be met by a site and for trust to be built up in the implementing organisation.

It was agreed that it would be valuable to have a regulatory group, but that the promotional work must be done by a parallel implementing group. The idea agreed was that the regulators should meet once per year (most likely within the scope of the IAEA General Conference that all attend) and that at this annual meeting, they should review the work which had been done in their countries on the concept of regional disposal. Meanwhile, the implementers from these countries would try to move ahead. The problem which arose here, was to decide what the implementers could do that would not be a duplication of work being done either at Arius or in the SAPIERR project. The final concept was that one should try to extract from the work being done in SAPIERR and Arius (both of which have participants from organisations that are members of the Initiative Group) those aspects which are most relevant for this

contiguous group of geographically close countries.

New IAEA Expert Group on Multilateral Approaches to the Fuel cycle

An Expert Group to consider ways to tighten international controls on the nuclear fuel cycle has been established by the IAEA as part of efforts to prevent the spread of nuclear weapons. The Group's focus is on proliferation-sensitive parts of the nuclear fuel cycle - the production of new fuel, the processing of weapon-usable material, and spent fuel management. The Expert Group will identify issues and possible multilateral approaches to strengthening controls over the relevant activities in the front and back ends of the fuel cycle. Some of the options the Expert Group will explore are:

- Limiting the use of weapons-usable nuclear material (plutonium and high enriched uranium) in civilian nuclear programs, by permitting it only under multilateral control
- Multinational approaches to managing and disposal of spent fuel and radioactive wastes.

The Group comprises 23 experts drawn from as many countries, who are participating in their personal capacity. It is chaired by Mr. Bruno Pellaud of Switzerland, who is a former Deputy Director General and Head of the Department of Safeguards at the IAEA.

The need to develop a more "proliferation resistant" fuel cycle through the use of multilateral approaches is not a new issue. Over the past five decades, concerns have been raised about the adequacy of international safeguards to detect and deter the misuse of nationally controlled nuclear fuel cycle facilities. Recent events have highlighted the possibility that a State engaged in declared enrichment and reprocessing activities for peaceful purposes, could potentially misuse the nuclear materials, technology or know-how for the development of a nuclear-weapon programme.

The Expert Group will meet four times over the next six months, before submitting its findings to the IAEA Director General by March 2005. A meeting on multinational approaches to waste disposal is planned for January 2005 and it is hoped that Arius can participate in this.

A series of useful, in depth articles on the background to internationalisation of and national views on the nuclear fuel cycle can be found on the dedicated IAEA website:

http://www.iaea.org/NewsCenter/Focus/FuelCycle/idx_ex.shtml

US-Russia agreement on research reactor fuel recovery

In May, the USA and Russia signed an agreement to recover fresh and spent HEU fuel of Russian origin from research reactors around the world. The USA

will help to fund the project and Russia will provide the necessary equipment and expertise. Twenty reactors in seventeen countries are being targeted and the fuel will be returned to Russia, with the first countries involved being Belarus, Poland, Romania, Ukraine and Uzbekistan. This provides a good example of the safety, security and economic advantages to be gained by multinational disposal projects. It will hopefully lead to further acknowledgement of the fact that the same advantages can be obtained by global approaches to disposal of commercial power reactor fuels.

Australia: NIMBY blocks repository cooperation

A few years ago, the Australian Government reacted strongly against studies suggesting that the stable Australian continent could be an ideal siting possibility for a shared international repository. While taking a firm position that every nation should find its own disposal solution, the Government simultaneously put to its own people arguments that a sensible national solution involved one State in the Federation acting as host for a repository for all of Australia's LLW. Ironically, the advantages in safety, security and economics that were put forward to the States within Australia directly paralleled the arguments that the Government had rejected at national level. Now, a recent decision announced by the Prime Minister makes it clear that the State Governments have, instead, adopted the very same not-in-my-backyard (NIMBY) position that was taken by the national politicians with respect to international repositories.

After losing a legal dispute with South Australia about the site for a national LLW repository in that State, which the Government had nominated as first choice, a new national search was proposed. This caused such a storm of protest that the Australian government has bowed to state-level political pressures and abandoned its plans. Each State has been told to set up its own repository, to international standards. This failure in cooperation appears to conclude twelve years of intensive effort to locate and licence a single national facility. This is a triumph of political expediency over common sense, science and economics. Australia produces only about 45 cubic metres of low and intermediate-level wastes per year, compared with a world total of about 150,000 cubic metres per year which ends up in some 70 repositories!

Topical Article

The EC Waste Directive: a complex evolution

by Charles McCombie

In late 2002, the office of Commissioner Loyola de Palacio of the European Commission (EC) developed a draft Waste Directive to be implemented as EU legislation. The declared objective was to bring about progress towards safe, long term management of spent nuclear fuel and radioactive waste. This article

describes the complex processes involved in steering such measures through the EC. These have led to repeated versions of the Directive being produced with input from a wide range of stakeholders.

The emphasis of the proposed Directive was on high-level waste (HLW), including spent nuclear fuel (SNF) that is to be disposed of directly, but it covered all forms of radioactive waste. The most important points contained in the proposal were:

- Each Member State was required to establish a clearly defined programme covering all radioactive waste under its jurisdiction and covering all stages of management, including disposal
- Disposal in stable geological repositories (granite, salt, clay) was acknowledged to be considered to be the safest and most sustainable solution for the management of high-level and long-lived radioactive waste
- The programme should specify an approach to long-term management and disposal with a definite timetable for each step
- Authorisation for development of appropriate disposal site(s) was to be granted no later than 2008
 - For geological disposal of HLW and long-lived waste, authorisation could be conditional on a further period of detailed underground study
 - For short-lived low level waste, if disposed of separately from HLW and long-lived waste, authorisation for operation to be granted no later than 2013
 - For HLW and long-lived waste to be disposed of in a geological repository, authorisation for operation was to be granted no later than 2018
 - The programme could include shipments of radioactive waste or spent fuel to another Member State or third country if such shipments are fully in compliance with existing EU legislation, are covered by firm contracts, are under adequate safeguards if necessary, and only take place to States with appropriate facilities that meet accepted norms and standards of the Member State of origin.

Coupling of the Waste Directive into the "Nuclear Package"

The Waste Directive was coupled with a her proposed Directive on Nuclear Safety and with two further EC proposals to form a so-called "nuclear package" of proposed legislation. The coupling of the Waste Directive with the Safety Directive ultimately complicated the entire discussion, since the latter led to very controversial debates revolving around issues of national sovereignty in nuclear legislation that were only partly resolved by the Court of Justice ruling mentioned below. This article focuses only on the evolution of the Waste Directive, which was first

published as a draft by the European Commission on 6th November 2002.

Before the draft was put into a final form, it was reviewed internally. On 19th December 2002, the Committee established in terms of Article 31 of the Euratom Treaty, comprising national experts in radiation protection, issued its opinion on the nuclear package. The main points of this opinion were:

- the Committee welcomed the Directives as an important move towards enhancing radiation protection in the EU and endorsed the Commission's overall approach.
- some concern was expressed by the Committee that the Directives might limit the policy options of EU Member States (especially regarding radioactive waste and the possibility of using interim storage methods for longer than envisaged in the draft Directive on radioactive waste).
- the Committee declared itself not competent to judge the legal basis of the Directives, and therefore neither objected nor supported on legal grounds.

A European Court of Justice ruling of 10th December 2002, confirmed the Community's legislative powers with regard to the safety of nuclear facilities. This was a very important ruling that strongly affected the positions taken by Member States in the ensuing debates.

The proposals initiated an intensive debate at national and international levels, as EC officials attempted to progress them through the standard EU approval process. With emphasis on the Waste Directive, the positions taken by the principal parties involved, the continuing amendments to the proposal and the current, amended form of the non-binding recommendations ultimately produced are documented below.

Procedures for Euratom Directives

The procedures by which Directives are established are laid down in the Euratom Treaty itself. Typically, the Commission receives guidance from a group of experts established under Article 31 of the Treaty, which then gives rise to a Commission proposal for a Directive. This is submitted first to the Economic and Social Committee (EESC). Upon incorporation of all or part of the observations of this Committee, the proposal is published in the Official Journal and forwarded to Council and to the European Parliament.

The European Parliament (EP) then proposes amendments to the Commission proposal which are examined by the Commission and taken up as a whole or in part in a revised Commission proposal which is again submitted to the Council. The role of the EP is a consultative one. However, the Commission should take account of the EP views and modify its proposal in the light of the Parliament's

position. In the end, under the terms of the Euratom Treaty, it is the Council that decides and the Directive is ultimately adopted by a qualified majority at Council. Subsequently, the Directives need to be transposed into national legislation.

To help in its deliberations, the Council has three levels of Committees. The working level (e.g. the Atomic Questions Group AQG), the political level (COREPER – made up of Ambassadors from each of the Member States) and Ministerial level (made up of Ministers from the Member States). The working level debates Commission proposals (and the general topic if there are differences of views between members of the AQG) and the Ministers formally adopt the legislation (usually after agreement has been reached in COREPER). Normally, issues are discussed at Ministerial level only if COREPER cannot decide and political debate and decision needs to be taken at the highest level. Directives do not go to Council until there is the required majority in COREPER. Then they are usually adopted in the council without any further debate.

The Final Proposal of 30th January 2003

The original draft of the Waste Directive was accompanied by a Memorandum which very clearly reflected the positive views of the EC with respect to geological disposal. The text characterized geological disposal as the "best available" option and stated that "further delays in the development of repositories ... cannot be justified". It also stated that "long-term indefinite storage ... is not considered to represent a safe situation, and in the long run is unsustainable and passes on an unacceptable burden to future generations". The original draft text of the Directive itself, in its preamble, described geological disposal as "the most suitable method" and called for "a clearly defined programme for all stages of management including disposal".

The version of 30th January 2003 finally presented to the Commission retained the pro-disposal Memorandum but already softened the text by inserting a reservation that geological disposal is most suitable "on the basis of present knowledge" and by dropping the "including disposal" from the requirements on a clearly defined programme. These and subsequent moves in the same direction resulted largely from pressure from the UK, where a major public consultation exercise on preferred long-term solutions is in progress. Although many studies – including ones already carried out in the UK – have concluded that geological disposal is the only real long-term solution available today, the UK authorities did not wish to see their somewhat isolated position compromised by a Council endorsement for the geological option. Importantly, however, the tight deadlines for implementation were retained in Article 4. The inclusion of specific dates that were so obviously unrealistic (especially for HLW/SF) was intended as an EC tactic to put pressure on the Member States. In practice, the patent lack of reality in the timetable detracted from the credibility of the Commission.

Positions taken by Stakeholder Bodies

In the following sections, the resulting discussions and the positions taken by the following key stakeholder representatives are recorded:

- European Economic and Social Committee (EESC)
- European Parliament Industry, External Trade, Research and Energy Committee (ITRE)
- EU Club of Agencies
- EURELECTRIC
- FORATOM
- Environmental Groups (Greenpeace, Friends of the Earth)
- European Parliament (EP)

The Opinion of the EESC, a consultative assembly in which the various socio-economic organisations of the EU Member States are represented, was a key stage in the progress of the package, because the Commission is only able to adopt a proposal for submission to the Council (Ministers and heads of government) after it has obtained the opinion of the EESC. The EESC agreed with the Commission's view that the highly radioactive waste produced in each Member State should, if possible, be permanently stored in suitable geological formations, without excluding the possibility of a voluntary sharing of tasks with neighbouring Member States. However, it recommended that the timetable for authorisation of such final storage sites by the Member States should be made more flexible.

The European Parliament Industry, External Trade, Research and Energy Committee also recommended that there should be more flexibility in the time frame, that the general public should be involved in decision making processes, that other technologies than underground repositories should also be considered and that joint repositories within EU should not be excluded. It agreed that the programme proposed by a Member State may include shipments of nuclear waste to another Member State or third country. However, it is stressed that such shipments must be fully in compliance with existing EU legislation and international commitments. Moreover, it clearly stated that no Member State should ever be obliged to accept imports of radioactive waste from other Member States.

The EU Club of Agencies is composed of representatives of national waste management agencies. It welcomed the initiative and generally agreed with the objectives and intentions, timetables, but believed these should be compatible with the diversity of situations existing in European countries. It was proposed that the Directive should require deadlines for implementing permanent solutions in a two-stage process, beginning with proposals for

permanent solutions and definition of national decision-making and siting procedures in national legal systems. The group acknowledged that programmes may include shipments to another country, but stressed the need to make clear that countries can not be forced to accept radioactive waste from other countries, and that no exports can take place to countries without the capacity to manage radioactive waste safely. It was noted that some countries with small or no nuclear programmes and limited means could benefit from combining their resources to find a common site on a voluntary basis

The opinion of EURELECTRIC, the European union of the electricity industry, concerning waste disposal, was that the deadlines were far too optimistic and that there should be a more flexible timeframe. The possibility of voluntary co-operation between Member States in finding disposal solutions must be maintained, with particular regards to small and non-nuclear countries

FORATOM, the organisation representing the EU nuclear sector, welcomed the Commission's proposal for permanent solutions as the key for public confidence in the long-term future of nuclear energy in the EU. However, more flexibility was judged to be needed doubts were expressed about the common implementation deadline proposed by the Commission.

Greenpeace asserted that, while ostensibly designed to increase nuclear safety, the proposals were actually meant to revitalise the nuclear industry. Friends of the Earth also called for a suspension of the nuclear package, saying that it represented a co-ordinated effort to prepare the ground for the further development of atomic power in an enlarged EU.

According to Title II, Chapter 3, Article 31 of the Euratom Treaty, the European Parliament (EP) has to be consulted before the Council of Ministers takes a final decision on proposals for Directives. For the Waste Directive, the deliberations and recommendations of the EP were those that most directly affected its subsequent development. The EP discussion and vote in plenary took place on 13th January 2004. The Parliament adopted the two reports submitted on the nuclear package, one on Waste and one on Nuclear Safety. Overall, the vote reflected the position that the preferred solution was an amended, much softened proposal which had been put forward on 14th October 2003 as described below. All the amendments advocating a non-legally binding alternative to the Directives were rejected.

In a non-binding resolution on the management of spent nuclear fuel and radioactive waste, the EP stressed that action must be taken soon to deal with HLW and SF in temporary storage. While MEPs welcomed the idea of setting deep geological disposals as an effective solution for high-level and long-lived radioactive waste, they disagreed with the Commission's proposal for a single timetable for all Member States. The EP therefore also suggested a two step approach towards the development of deep geological disposal sites.

Official Positions Taken by Member States and the Council of Ministers

Member States were divided over the Commission's proposals, whereby most disagreement was on the Nuclear Safety Directive. In the waste area, most objections were to the unrealistic timetables proposed. However, the UK, in particular, also objected to geological disposal being identified as the preferred long term solution for high-level radioactive wastes. During the initial debates on these issues, it was unclear to what extent the accession of the new Member States would change the political structure within the Council and what effect this will have on the prospects for an adoption of nuclear legislation. Accordingly, the original intention was to pass the Directives before the expansion of the EU. This proved impossible.

As explained above, the Council of Ministers is advised by the Atomic Questions Group (AQG) – comprising delegates from the EU Member States' Brussels-based embassies to the EU. The discussions on the nuclear package in the AQG resulted in a serious deadlock between the pro- and anti-Directive countries and led to the production of a series of drafts for the Directive.

A new version of the Waste Directive was drafted on 14th October 2003 by the General Secretariat to the Council. The most important amendment was that the timetables in Article 4 were softened. Fixed deadlines for siting and implementation were retained only for short-lived low and intermediate level wastes (2008 and 2013 respectively); for geological disposal 10 years was given as the maximum time from siting authorisation to repository operation. On 26th November 2003, the Committee of Permanent Representatives, COREPER, met to consider these compromise proposals. The outcome of this meeting was not very conclusive, as the Council decided not to put the nuclear package issue to vote and to continue the negotiations under the Irish Presidency which started on 1st January 2004

Following meetings of the AQG on 9th, 19th and 21st of January 2004, a further version of the waste Directive was proposed by the European Council on 30th January. The proposal gave a broader time scale (deadline: 2010) for authorisation of the development of disposal sites for low level waste. It did not provide a date for siting of high level waste and low and intermediate level long-lived waste. The date by which authorisation for operation of disposal facilities should be granted was moved to 2018, for the case of low level waste, and remained as 10 years *"after the date on which authorisation was granted for the development of the site"*, in the case of high level waste. Significantly, the dates were given as an *"indicative timetable"* and included in an annex which could be deleted at a later stage. Geological disposal was considered an *"appropriate solution for long-term management of long-lived radioactive waste"* – rather than *"the safest and most sustainable"*. At this stage, again due mainly to pressure from the UK, references to *"disposal systems"* were replaced by the wording *"appropriate solutions"* (without specifying what else

these might be). Radioactive waste could be exported into a Member State only if it has authorised this.

Following a further AQG meeting on 5th February 2004, the new European Council Presidency issued on 23rd March 2004 yet another revised version of the compromise proposals for the nuclear package. The European Council's compromise proposals were an attempt to end a deadlock between pro- and anti-Directive Member States in the Council and to take into account some of the views expressed by the European Parliament, which, acting in a consultative capacity, had voted on the package on 13th January 2004.

The most significant changes in the new European Council proposals again focused on the Safety Directive. In the Waste Directive, the annex with timetables was deleted and no reference to deadlines for the long-term management of radioactive waste appears in the current version of the Directive. A new article was also added. This article foresees the creation of a review Committee of Regulatory Authorities, composed of representatives of the regulatory bodies designated by each member state.

On 31st March, the new compromise proposals were again discussed in the Atomic Questions Group (AQG). A minority of Member States – Finland, Germany, Sweden and the UK – maintained their anti-Directive stance, which threatened to block the European Council's adoption of the legislation. These Member States supported a non-legally binding alternative to the nuclear safety Directive, which, significantly, did not have the backing of the European Parliament. Therefore, it was not judged likely that any final decisions on the package would be possible during the Irish Presidency of the European Council.

The Council Presidency brought the issue before the European Council's Committee of Permanent Representatives (COREPER) in May. However, the European Union ambassadors failed to make any progress on the nuclear safety and waste directives at their meeting in Brussels on 13th May. The representatives did not vote on the matter as the number of Member States opposing the directives remained high. A Commission proposal to split the two directives was also rejected. A proposal to give a mandate for the Commission to develop non-binding resolutions was then put forward. Despite the contrary view of the EP, all EU members except France and Spain were in favour of this.

The Atomic Questions Group was then requested to develop some *"Commission Conclusions"*, which were adopted by the Council before the conclusion of the Irish Presidency.

The Way Ahead

The "nuclear package" – the European Commission's first attempt to pass legislation in the field of nuclear safety and waste management – has now been under consideration for almost two years without concrete results. Despite this disappointing progress, the draft conclusions still affirm the commitment of EU Member

States to a high level of nuclear safety and to safe management of radioactive wastes. It is, however, regrettable that they are non-binding and also that some important issues, such as management of mining and milling wastes have been dropped from the text.

The current position is that there is a break in the process - not enough Member States are yet in support to get the qualified majority that is needed (so far there are 18 out of 25) The Council conclusions adopted under the Irish Presidency give something to show for its efforts and indicate a commitment to continue the work. They represent a political statement about the importance of nuclear safety and radioactive waste management and the issue is still on the table of the Council.

In fact, the Commission Services have prepared a revised text that could be adopted by the Commission so that discussions can restart in the Council. It is not unusual for the Commission to present two, three or even four texts before one is adopted. Thus the nuclear package is still a work in progress.

Lessons learned; conclusions

The history to date of the Waste Directive illustrates the problems of harmonizing nuclear legislation in a European Union composed of Member States with highly polarized views on nuclear issues. In retrospect, the Waste Directive may well have had an easier passage, had it not been coupled to the Nuclear Safety Directive and the issues concerning funding of decommissioning. Some national regulatory authorities and some financial institutions are very protective of their rights to establish independent rules and procedures in their own countries.

The principles associated with the Waste Directive are far less controversial than those in the Nuclear Safety case. The wish to move ahead with organization of safe long-term waste management is shared by virtually all Member States. However, there are significant differences of opinion on how and when this is feasible.

On the question of the geological disposal option for HLW and SF, only the UK has diverged from the consensus that this is the most suitable approach. This reflects the political climate in the UK during the current phase of reviewing options, rather than any technical body of opinion. The timetable issue is important. The EC tended to look only at what was feasible (and then judged this far too optimistically); many Member States are also interested in what is actually necessary. Some Member States are accumulating HLW/SF at such a low rate that early implementation of geological repository would make little sense, given that proper storage facilities can be operated safely for many decades. There is no technical urgency to construct deep repositories. This argument has in recent years been weakened by global concerns about security, since underground facilities may be less exposed to terrorist threats than surface stores.

Of course, economic aspects are also crucial – especially for small countries. Postponing implementation of a geological repository is financially attractive, given present discounting practices. The attraction of postponement is further enhanced if it delays the controversial task of nominating final disposal sites.

Throughout the evolution of the Waste Directive the EC has recognized the concerns of Member States with limited inventories, technical expertise and funding in that it has kept open the option of regional repositories or, using newer EC language, “common facilities”. To allay the fears of advanced Member States that they might unwillingly be designated as host for such a facility, the EC has introduced explicit text re-affirming the right of any country to refuse import of radioactive wastes for disposal. However, the non-binding proposal already adopted by the Council clearly reflects the acceptance of the concept of shared facilities and it may open the door to specific cooperation initiatives.

Upcoming Conferences

This section of the newsletter highlights upcoming conferences that are specifically relevant to Arius activities and objectives. Those at which Arius is attending or presenting papers are indicated.

September

2nd - 3rd International Nuclear Law Association, Deutsche Landesgruppe meeting, Celle, Germany
(Arius paper)

6th World Nuclear Association Waste Management and Decommissioning Working Group, London, UK
(Arius participation)

8th – 10th World Nuclear Association Annual Symposium, London, UK
(Arius paper)

February – March 2005

27th Feb to 3rd March: WM'05 31st Waste Management Symposium, Tucson, USA

September 2005

4th to 8th Tenth ASME ICEM International Conference On Environmental Remediation And Radioactive Waste Management, Glasgow, Scotland (Arius paper foreseen)

25th to 30th International High-level Radioactive Waste Management Conference, Las Vegas, Nevada (Arius paper foreseen)

24th and 25th Issues in Geological Disposal, Berkeley, USA.