

## **U.S. Perspectives on the Joint Convention**

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### **ABSTRACT**

The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention) is an international convention, under the auspices of the International Atomic Energy Agency (IAEA). It is a companion to a suite of international conventions on nuclear safety and physical security, which serve to promote a global culture for the safe use of radioactive materials. Although the U.S. was the first nation to sign the Joint Convention on September 29, 1997, the ratification process was a challenging experience for the U.S., in the face of legislative priorities dominated by concerns for national security and threats from terrorism after September 11, 2001. Notwithstanding these prevailing circumstances, the U.S. ratified the Joint Convention in 2003, just prior to the First Review Meeting of the Contracting Parties, and participated fully therein.

For the United States, participation as a Contracting Party provides many benefits. These range from working with other Parties to harmonize international approaches to achieve strong and effective nuclear safety programs on a global scale, to stimulating initiatives to improve safety systems within our own domestic programs, to learning about technical innovations by other Parties that can be useful to U.S. licensees, utilities, and industry in managing safety and its associated costs in our waste management activities. The Joint Convention process also provides opportunities to identify future areas of bilateral and multilateral technical and regulatory cooperation with other Parties, as well as an opportunity for U.S. vendors and suppliers to broaden their market to include foreign clients for safety improvement equipment and services.

The Joint Convention is consistent with U.S. foreign policy considerations to support, as a priority, the strengthening of the worldwide safety culture in the use of nuclear energy. Because of its many benefits, we believe it is important to take a leadership role in promoting its

ratification in the global setting, as well as in more focused regions. At the First Review Meeting of the Contracting Parties, delegations agreed it was highly desirable to have more member states become Contracting Parties. To that end, the United States proposed initiating a Regional Conference Initiative outreach. To launch the Initiative, the U.S. provided Extra-Budgetary contributions to fund conferences, in Africa, the Americas and Southeast Asia. We also provided an expert for each of the conferences to assist in advancing the message to non-member States, in particular developing nations.

## **INTRODUCTION**

The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (Joint Convention) is an international convention, under the auspices of the International Atomic Energy Agency (IAEA). It is a companion to a suite of international conventions on nuclear safety and physical security, which serve to promote a global culture for the safe use of radioactive materials, in particular the Convention on Nuclear Safety (CNS).

The specific purpose of the Joint Convention is to achieve a thorough examination of national programs through a constructive exchange of peer views, so that Contracting Parties (nations having ratified) can learn from each other's solutions to common and individual safety problems. This process is viewed as a mechanism for contributing to improving worldwide safety.

There are two primary obligations imposed by the Joint Convention: 1) Parties are obligated to attend the Review Meeting of the Contracting Parties every three years, and 2) the preparation and submittal of a National Report every three years. The Joint Convention within its articles lays out the elements of each Contracting Party's National Report, which must include text that summarizes laws, regulations, types and amounts of waste, and practices in each country.

The Joint Convention in and of itself does not delineate standards the Parties must meet with respect to safe management of spent nuclear fuel and radioactive waste [1]. The Parties are however required to "take appropriate steps" to ensure the safety of spent fuel and radioactive waste management and to report on the Contracting Party's activities as described within the articles of the Joint Convention.

## **THE U.S. RATIFICATION PROCESS**

Ratification of the Joint Convention is consistent with U.S. foreign policy considerations to support safety as a top priority in the use of nuclear energy worldwide. In some nations the ratification process is relatively simple, however, in the United States, the ratification process is a very complex Constitutional process. It also was a challenging experience, in the face of legislative priorities dominated by concerns for national security and threats from terrorism after September 11, 2001. Although the U.S. was the first nation to sign the Joint Convention on September 29, 1997, these prevailing circumstances delayed the ratification until April 2003, just prior to the First Review Meeting of the Contracting Parties, which allowed the United States to participate fully therein.

The U.S. Constitution is the underlying foundation for the U.S. ratification process, which first requires the President to submit the Joint Convention to the U.S. Senate for its “advice & consent.” The Senate assigns the request to the Senate Foreign Relations Committee. The Committee schedules a public hearing, considers the testimony and merits of the convention, and if it reports favorably, the convention is sent to the full Senate. If the Senate votes favorably, a Senate Resolution of Ratification is sent to the President. The Department of State prepares the Instrument of Ratification, which is signed by both the President and the Secretary of State, before it is deposited in the IAEA.

## **PREPARATION OF THE U.S. NATIONAL REPORTS**

Given the importance to the United States of the Joint Convention, U.S. Federal agencies resolved to achieve the end goals of ratification and full U.S. participation in the First Review Meeting of the Contracting Parties by means of a two-faceted strategy. One effort was to promote the ratification of the Joint Convention by obtaining support from the industry, the Agreement States and other stakeholders. The second effort, in parallel, was to assemble the information and documentation to produce the U.S. National Report, an obligation required by the Joint Convention.

At the onset, coordination between the Department of Energy, the Nuclear Regulatory Commission, the Environmental Protection Agency, and the Department of State was seen as a key component to success. To that end, an Interagency Executive Steering Committee (JC/ESC) was established, along with an Interagency Working Group (JC/IWG), and a U.S. Point-of-Contact. As a result, the U.S. was able to achieve its objectives, the building of consensus among stakeholders and preparation of the necessary documents and testimony for Senate review and to fully complete our first National Report for transmittal to the IAEA in April 2003, when the United States ratified the convention.

The coordination process did not stop with the U.S. First National Report and participation in the First Review Meeting of the Contracting Parties. A second timetable was immediately established to begin the updating and preparation of the U.S. Second National Report and to plan for participation in the Second Review Meeting of the Contracting Parties in May 2006.

Only publicly available information is included in the National Report, drawing on available U.S. Federal and State governmental sources, published databases and technical reports. Both the U.S. First and Second National Reports are available at URL: <http://www-ns.iaea.org/conventions/waste-jointconvention.htm>.

## **U.S. LEADERSHIP AND PROMOTION OF THE JOINT CONVENTION**

Currently there are 39 Contracting Parties, the most recent of which are Russia, Estonia, Uruguay, Iceland and EURATOM,<sup>1</sup> all of whom are expected to participate in Country Group reviews. Nevertheless, there still are many IAEA States, both developed and developing nations,

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<sup>1</sup> Under the EURATOM Treaty, the European Commission acquired the status of a supranational regulatory authority among its Member States in three areas: radiation protection, supply of nuclear fissile materials and nuclear safeguards.

not yet Parties who can benefit from participation in the Joint Convention in support of worldwide nuclear safety.

Consistent with U.S. foreign policy, we believe it is important to take a leadership role in the Joint Convention Review Meeting of the Contracting Parties and in promoting ratification of the Joint Convention in the global setting, as well as in more focused regions. In the Second Review Meeting of the Contracting Parties in May 2006, the United States was elected to serve as one of two Vice Presidents (DOE) and as the Vice Chair of a Country Group (NRC). The U.S. was also elected to serve as President (DOE) of the Joint Convention Organizational Meeting in December 2005.

At the First Review Meeting of the Contracting Parties, delegations agreed it was highly desirable to have more member states become Contracting Parties. To promote ratification of the Joint Convention, the United States proposed initiating a Regional Conference Initiative outreach. To launch the Initiative, the U.S. provided \$170,000 in Extra-Budgetary contributions (e.g. \$140,000 for African Conference) to fund conferences, in Africa, the Americas and Southeast Asia. In addition, drawing on U.S. ratification and participation experience, we sent an expert for each of the conferences to assist in advancing the message to non-member States, in particular developing nations. We also produced a CD Guide and Tutorial on the ratification process and national report writing to distribute at each Regional Conference.

With worldwide nuclear safety a top foreign policy priority, the United States continues to welcome future promotional opportunities and opportunities for bilateral and multilateral technical and regulatory cooperation with those nations who are not yet Parties.

## **BENEFITS TO THE UNITED STATES**

In general terms, participation in the Joint Convention process provides a benefit from harmonizing international approaches and in influencing the development of nuclear safety programs in developing countries which strengthens the nuclear safety environment worldwide. Through this process, the U.S. can more efficiently identify possible areas for additional bilateral and multilateral technical and regulatory cooperation, in areas of mutual interest. Moreover, the United States' experience in mature programs for dealing with radioactive waste and spent nuclear fuel safety also opens up opportunities for U.S. trade in safety related products and services.

In more specific terms, participating in the Joint Convention process provides many benefits to our programs and activities. First, is the opportunity to review the national spent fuel and radioactive waste management safety programs of other Contracting Parties and to benefit from their experience in situations similar to our own. One example is the observation that life cycle cost efficiencies can be achieved by spending resources up front to deactivate facilities and remove nuclear safety hazards, while experienced personnel are still available. Although, the U.S. has a wealth of experience in decommissioning, and from the lessons learned that have been incorporated into the overall regulatory and guidance infrastructure, we are always looking for ways to enhance our programs.

Another specific benefit from the review of the national spent fuel and radioactive waste management safety programs of other Contracting Parties is the opportunity to learn about their advances and innovations in radioactive waste disposal and spent fuel management. Technical

innovations by other countries can be useful to U.S. industry, licensees and utilities in managing safety and its associated costs in our waste management activities. For example, it is important to assess how other nations deal with international commerce in the light of recycled metals and other products, which may have some residual radioactivity.

Through preparation of the National Report, the review process also allows us to measure and compare our progress from one meeting to the next, to continue to ensure the safety of spent fuel and radioactive waste management in the United States. Part of the U.S.'s past experience led to some lessons learned and helped modify our own programs. For example, the NRC has a performance-based inspection program, consisting of in-process inspections, which are more efficient than a one-time confirmatory survey. It is a more effective way of implementing the provisions of the Joint Convention and provides a self-evaluation example of how the United States improved its program.

## **EVOLVING AREAS IN THE U.S. NATIONAL PROGRAM**

The U.S. has a number of evolving areas in its national program that are consistent with the themes and obligations of the Joint Convention. From a safety and a regulatory perspective, these range from moving to more risk-informed, performance-based regulations, improved management and tracking of radioactive sources, progress in the clean-up of legacy sites, and to improved public outreach.

As is the case for many other countries, the NRC has been investigating options in the area of control of the disposition of slightly contaminated materials, which is often referred to as “clearance” in the international arena. The NRC has a method in place for release of solid materials, but does not yet have a national standard in place for dealing with this.

Improved management of disused sources has received a great deal of attention in the U.S. The U.S. strongly urged the adoption of the IAEA Code of Conduct which provides for enhanced control of radioactive material. NRC, in coordination with DOE and other Federal agencies is implementing a national tracking system for certain radioactive materials used for academic, medical and industrial purposes (National Source Tracking System). These 2 steps align well with the considerations in the Joint Convention with regard to disused sealed sources [2].

Additional information can be accessed at the NRC's website at URL:

<http://www.nrc.gov/materials/miau/ssd/sealed-toolkit.html>

Another area of U.S. progress has been the cleanup of “legacy” sites. One of the most recent accomplishments is the cleanup of the former U.S. government weapons manufacturing site at Rocky Flats in Colorado. It is now being used as a wildlife refuge. The U.S. has also decommissioned commercial nuclear power plants in Oregon and Maine. Onsite dry-cask storage of spent fuel remains under NRC license at these facilities.

The NRC has also improved public outreach, participation, and communication in its regulatory activities. The U.S. has been a strong proponent for involving the public in its waste and spent fuel management decisions. In the international sector, the U.S. is a participant in the Nuclear Energy Agency's Forum on Stakeholder Confidence.

## **KEY PERSPECTIVES ON OTHER NATIONAL REPORTS**

Two key observations stemming from our review of other Contracting Parties' National Reports and National Presentations at the First Review Meeting of the Contracting Parties are:

A number of countries have not factored decommissioning planning in their authorization protocols. Some feel that for a single national storage facility, it is unnecessary, because it is a permanent facility.

Internal domestic dialog has lead many countries to delay progress for permanent disposal, while they wait to see how others fare in their own programs to develop permanent disposal capabilities.

The decommissioning issue can actually be a valuable early strategy to better facilitate the decontamination and dismantling of facilities at the end of their lifetimes. It is especially critical in light of possible accidents that may occur; this could result in the need to decommission and close what might be considered the nation's only centralized storage facility.

## **NATIONAL REPORT INSIGHTS AND CONTRACTING PARTY RECOMMENDATIONS**

Some of the Contracting Parties have acknowledged the advantages of considering, and building in decommissioning requirements into the design of a nuclear facility. Moreover, early decommissioning benefits from the experience of keeping operational employees to aid corporate knowledge availability. A decommissioning component should be established with qualified staff, adequate financial resources, and recordkeeping.

It was recognized that there is a need to ensure that adequate records were kept by the operators, of inventories and activities, throughout the operating period of the facility. Old records are often inadequate or inaccurate; recordkeeping is crucial.

In some cases, the non-radiological risks are as important as the radiological ones; e.g., organics and solvents. An environmental analysis that addresses all the significant detriments provides a more sound decision basis. There was discussion on how to manage mixed wastes, i.e. radioactive and other hazardous materials. During the Closing Plenary of the First Review Meeting of the Contracting Parties, it was suggested that this would be a suitable area for additional guidance.

One of the areas suggested for improvement in the National Reports was to focus on practical implementation as opposed to reporting just the regulatory framework. In the First Review Meeting of the Contracting Parties, there seemed to be too great an emphasis on reporting the legal and regulatory system of codes and requirements, but there seemed to be less information addressing the practical aspects of waste management, such as inspection and enforcement, collecting and maintaining dose measurement records, and regulatory staffing levels. The 2<sup>nd</sup> U.S. National Report was revised to emphasize these topics from an implementation perspective [3]. For example, occupational dose histories are provided displaying exposures at low-level radioactive waste disposal facilities and independent spent fuel storage installations. Other types of practice-related information may include measurement and survey results; e.g., methods that

are used to survey embedded piping or protocols to detect minimum detectable concentrations of radionuclides.

Some sites will be very costly and complex; a graded approach should be used. If a country cannot “afford” full cleanup, interim cleanups or authorized restricted reservations may need to be considered. A legacy site may need to be included as part of a National cleanup program, if the operator is no longer in place or if cleanup funds prove inadequate.

## **FACTORS OF SPECIAL INTEREST**

### **Regional Repositories**

Contracting Parties noted it is important that the search for a multinational solution should not jeopardize any ongoing national programs. This conclusion is in keeping with the U.S. view, however in the United States, there are requirements established by U.S. law and policy regarding any scheme for international storage and disposal of spent fuel containing U.S.-origin nuclear materials.

### **IAEA Standards**

During the First Review Meeting of the Contracting Parties discussion of National Reports, several Contracting Parties acknowledged the value of IAEA Safety Standards documents in drafting their National Reports and that their quality had improved since the Convention was first drafted. The Meeting Summary reflected agreement by the Parties, if a Contracting Party wished to refer to the IAEA Standards in demonstrating how it implemented the obligations set forth in the Convention, there would be no objection. It also reflected agreement that referring to IAEA standards was only one of several possible approaches to assistance in preparing a National Report. Therefore, reference to IAEA documents would not become a recommended, preferred, or benchmark approach. The United States strongly supports this view that IAEA Standards should not be used as benchmarks for Joint Convention Articles.

### **Improving the Review Process**

In the First Review Meeting of the Contracting Parties a topic of interest that emerged was the need to provide a more efficient, effective, and accessible process for achieving the goals of the Joint Convention and, in particular, for peer review of national programs for spent fuel management and radioactive waste management. The United States recommended this topic be discussed at the Opened-Ended Group Session at the Second Review Meeting of the Contracting Parties to explore possible options.

## **JOINT CONVENTION CONCLUSIONS AND OBSERVATIONS**

The recognition by the international nuclear community of the importance of ensuring the safety of the management of spent fuel and the safety of the management of radioactive waste led to the Joint Convention. At the First Review Meeting of the Contracting Parties, thirty-three Parties reaffirmed that importance; clearly demonstrating a strong commitment to the objectives of the Convention and to implementing the objectives of the Articles. All Parties acknowledged that the

key to the success of national programs is to have a clear legal framework a strong and independent regulatory structure; competent licensees or operators; clear lines of responsibility and accountability; adequate financial provisions; and plans on how to manage spent fuel and radioactive waste to ensure continued safety into the future. All Parties further acknowledged consultation with interested stakeholders and the public on radioactive waste management strategies was not only a good practice to follow, but also essential for the development of a successful and sustainable policy.

For the United States, participation as a Contracting Party provides many benefits, both general and specific. These range from working with other Parties to harmonize international approaches to achieve strong and effective nuclear safety programs on a global scale, to stimulating initiatives to improve safety systems within our own domestic programs, to learning about technical innovations by other Parties that can be useful to U.S. licensees, utilities, and industry in managing safety and its associated costs in our waste management activities. The Joint Convention process for the United States also provides opportunities to identify future areas of bilateral and multilateral technical and regulatory cooperation with other Parties, as well as an opportunity for U.S. vendors and suppliers to broaden their market to include foreign clients for safety improvement equipment and services.

Consistent with U.S. foreign policy considerations to support safety as a top priority in the use of nuclear energy worldwide, we believe it is important to participate as a Contracting Party, to take a leadership role in the Review Meeting of the Contracting Parties, and in promoting ratification of the Joint Convention in the global setting, as well as in more focused regions. With worldwide nuclear safety a top foreign policy priority, the United States continues to welcome future promotional opportunities and opportunities for bilateral and multilateral technical and regulatory cooperation with those nations who are not yet Parties.

## REFERENCES

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