

WNTI

WORLD NUCLEAR TRANSPORT INSTITUTE

Development and Worldwide Use of IAEA Transport Regulations

presentation paper

Lorne Green
Secretary General, WNTI

World Nuclear Fuel Cycle
March 30 – April 2, 2004, Madrid, Spain



Dedicated to the
**safe, efficient
and reliable**
transport of radioactive
materials

Introduction

Transport – such a simple sounding word, rather a plain sounding one perhaps. But in reality a deceptively complex word; one that embraces a wide world of meaning. Transport is both noun and verb; it is always an action word, one signifying movement. That movement can be by land, sea, air, or any combination thereof. Transport is local, regional, international, or all three. It is a word bound inseparably with its object and mode. There must always be an object of transport, a material, substance, a package; and there must be a mode, a conveyance – a train, truck, an airplane.

This plain word, transport, then, carries quite a lot on its shoulders – movement, territory, jurisdiction, mode, conveyance and package. There is a great deal attendant on transport, particularly and properly for the transport of dangerous goods. There are national, regional and international standards and regulations to govern transport safety, efficiency and reliability. There is packaging appropriate to the properties of the contents, the availability of conveyances; there is consignor, shipper and consignee, insurance and liability. And there is a necessary synergy among all of these, for no one transport factor has meaning without the others in combination. Transport is what makes the fuel cycle go round; disrupt the transport chain and inevitably the whole of the cycle is affected.

The regulator and the regulated

Transport safety standards and regulations have no intrinsic practical effect without taking into account those who are the object of such standards and regulations. Standards and regulations do not become operationally effective until they are implemented by the entities which are subject to them. Accordingly, there is a necessary synergy between the regulator and the regulated; the regulator whose task it is to make and enforce the rules for safe, efficient and reliable transport, and those whose job it is to transport within the rules. One has no full meaning without the other. Both, I suggest, the regulator and the transporter, can be more effective in achieving their purposes when they co-operate and communicate with each other in the interest of mutual understanding.

In the case of the international transport safety regulatory regime, it is the nuclear transport industry, such as represented by the World Nuclear Transport Institute (WNTI), which is the object of transport safety standards and regulations. As such, the nuclear transport industry is a principal stakeholder in the regime.

Regulatory compliance is a cornerstone of the nuclear transport industry. The international nature of the fuel cycle mandates transnational movement of radioactive materials on a regular basis; this means that a single shipment may fall under the jurisdiction of numerous local, regional and national regulatory schemes, as well as the overarching international system.

The transport safety regulatory regime

No sector of transport is regulated more stringently than the nuclear transport industry. The nuclear transport industry is subject to a comprehensive, inter-connected regime of international, modal and national regulations and standards. The International Atomic Energy Agency (IAEA) Transport Safety Regulations, the so-called TS-R-1, are at the heart of that international regulatory regime. Appropriate provisions of TS-R-1 are incorporated in the regulations and standards of the International Maritime Organization (IMO) for marine transport, the International Civil Aviation Organization (ICAO) for air transport, the ADR, RID and ADN for road, rail and inland waterways in Europe, and the regulatory regimes of the IAEA Member States themselves. The IAEA transport safety regulations are reviewed every two years

and amended or revised as appropriate to ensure they are up-to-date.

Industry is fully committed to meeting its requirements within the international transport safety regulatory regime. Transporters of radioactive materials have an outstanding safety record. Indeed, the transport of radioactive materials could be regarded as a model for the transport of other classes of dangerous goods. It was in 1961 that the international community, through the IAEA, established a set of standards that would lead to such an impressive record of safety. The underlying philosophy required safety to be ensured by the package holding the radioactive material, whatever mode of transport was used, in contrast to the transport of many other hazardous cargoes where the mode of transport – the ship, plane, rail wagon or truck – is the only or primary safety measure.

The IAEA Transport Safety Conference in July last year found that; “the current IAEA Transport Regulations provide safe packaging options for the entire spectrum of radioactive material”¹ and that “by following the requirements of the IAEA Transport Regulations, the designer of a package strives not only to meet the requirements of the regulatory tests, but also to produce a package that is safe under all conceivable conditions”² There are two principal reasons for this outstanding safety record. It is due primarily to well-founded regulations developed by such key intergovernmental organisations as the IAEA, with the essential contributions of the Member States who participate actively in the regulation review and implementation processes, and their reflection in the international transport safety regime of modal, regional and national regulations. It is due also to the professionalism of those in the industry. Industry has co-operated in the full implementation of this regime.

The industry role

There is a clear determination on the part of the nuclear transport industry, and the key international organisations, to dialogue, and the World Nuclear Transport Institute provides industry a dedicated vehicle for taking part in this dialogue. The transport issues are many and complex. They deserve and require substantial, dedicated attention that a unique worldwide transport institute can devote to them. The very fact that companies are able and prepared to collaborate in this practical way to develop specific transport industry consolidated positions in itself sends a powerful message of industry’s commitment to safe transport. The World Nuclear Transport Institute values greatly the opportunities made available to it within the International Atomic Energy Agency, the international modal organisations, and by national competent authorities, to dialogue in the common interest of safe, efficient and reliable transport. WNTI has devoted considerable resources and worked hard to build influence with such organisations in the transport industry interest.

Valuable experience has been gained in working with the new IAEA transport safety requirements and many users are now focused on addressing nuances, especially with regard to the interpretation of TS-R-1 provisions. Industry involvement through the WNTI with the IAEA, its relevant committees and its Safety of Transport of Radioactive Materials Unit, allows for a better understanding of the regulatory framework, and ensures that the industry view is taken fully into account. This kind of dedicated industry engagement works to inform the regulatory decision-making process as TS-R-1 is reviewed periodically.

The WNTI has observer status in the IAEA and as such attends meetings of the Transport Safety Standards Committee (TRANSSC), the Agency’s principal body, to recommend on transport safety standards and its related working groups. This provides an important opportunity for industry to be educated, and also, importantly, for industry to register its views in the process of regulation review and implementation.

WNTI provides experts to assist in the technical work of IAEA Technical Consultant Services meetings set up to develop positions in support of the work of the TRANSSC. For example, we put forward a Scientific Expert to work on the important Co-ordinated Research Project on surface contamination. Similarly, the WNTI has consultative status in the IMO, and registers industry positions there in the appropriate committees and working groups. WNTI also has consultative status in the United Nations Sub-Committee of Experts on the Transport of Dangerous Goods. The World Nuclear Transport Institute engagement, in very practical ways, and with specialist expertise, in the key meetings where implementation and review of regulations are discussed is important to ensuring an effective safety regime.

How then do we operate? In the interest of developing and advancing consolidated industry positions, companies collaborate within the World Nuclear Transport Institute to share information and ideas. For example, the TS-R-1 Industry Working Group addresses the whole range of regulation implementation and review issues. It is here that industry positions on proposed changes to TS-R-1 regulations are developed. The HEXT Industry Working Group more particularly addresses packaging issues related to UF₆ packaging. Much practical work is being done. To illustrate, the WNTI undertook a major study of industry experience with radiation dose exposure rates for transport workers to ensure that the radiation protection programme requirements of the IAEA transport safety regulations are well understood, and appropriately implemented within the transport industry. Companies within the WNTI have collaborated to ensure that latest test criteria for UF₆ packages are implemented cost-effectively. The WNTI develops positions, on the basis of technical analysis, and submits comments on proposed changes to the IAEA Transport Safety Regulations. Recently we have undertaken a major study on the adequacy of existing package test criteria. All this work is designed to support the work of the IAEA in ensuring safe, efficient and reliable transport. We consider this kind of regulator and operator collaboration a very important part of the process.

It is important that issues of this kind be understood and approached from an international point of view. The experiences, policies and approaches taken on transport in one country or region, inevitably play into the situation of other countries and regions. And there is a wealth of experience internationally in the wide range of transport issues, from public acceptance to package test criteria that should be taken into account. It is not necessary, and not even always desirable that there be a purely national approach to every issue, while of course taking into account the particularities of the national situation.

The bottom line of transport safety regulation is, of course, safety. But safety is not a factor exclusively of the wording of the regulatory provisions. Safety also is assured to the extent that there is stability in the international transport safety regulatory regime. Safety is enhanced to the extent there is clarity within the regulations; to the extent there is consistency and uniformity across the international transport safety regulatory regime, and in the interpretation of regulations and their application around the world, and to the extent that they provide for efficient operation. While recognising the requirements of particular modal and national circumstances, consistent interpretation and application of international regulations is important to the safe, efficient and reliable international movement of radioactive materials.

The July 2003 IAEA Transport Safety Conference saw calls for greater standardisation, harmonisation, global application and simplification. And to achieve such improvements, it was recognised that further exchanges between industry and competent authorities collectively could go some way to increasing understanding. Industry, as

represented by the World Nuclear Transport Institute, for its part actively seeks opportunities to participate in such exchanges. It is our view that a fuller sharing among major stakeholders of experiences in operating within the international transport safety regulatory regime can only increase understanding, and potentially contribute to greater efficiencies for all concerned.

Implementation is the reverse side of the regulation coin; there is an intrinsic relationship between the two. Consistency and predictability assist in ensuring compliance, help to avoid confusion among all those involved in the transport chain, avoid any perception that differing applications of the regulations in different jurisdictions, while tailored appropriately to domestic circumstances, are somehow more or less stringent than others, and focus resources on safety considerations and compliance.

In recent years the IAEA has moved to an accelerated two-year cycle of regulation review. The assurance of consistency and predictability becomes more complex if regulation is subject to change so often. Practice has shown that a new two-year review cycle begins even before the previous cycle has been completed. Typically a review cycle has been launched with a call for proposed changes to latest regulations. It seems odd to me that a review should begin with a call for change. Perhaps it would be beneficial if a review could begin with just that, a review of the existing regime based on the experiences of operating within it by the major stakeholders – intergovernmental organisations, national competent authorities and industry. If changes or clarifications are recommended by such review, then proposals should follow. A review process that does not imply the necessity of change, or promote the notion of change, could contribute to a stable regulatory regime while remaining true to the requirements of safety, efficiency and reliability.

Summary

There is widespread recognition today that maintaining transport options in the interest of bringing the benefits of nuclear energy where they are wanted the world over requires open and sustained dialogue between the regulator and the regulated. It also requires close collaboration among all parties in the industry. Industry recognises that it must continually educate itself to ensure full compliance with the international transport safety regulatory regime. Equally, industry must take the opportunities afforded it to inform the regulators and others of the context in which industry performs its essential services, and to be engaged with well-developed, consolidated industry positions in the regulation review and implementation processes. Practical, efficient and safe transport regulation should take account of its impact on those who do the transporting. All benefit from a stable regulatory regime.

There is a powerful message to be told here – radioactive materials transport plays a vital role in bringing the peaceful uses of the atom to the benefit of society. The nuclear transport industry operates within a highly stringent international transport safety regulatory regime; a regime subject to regular review to ensure safety. The transport of radioactive materials has an outstanding safety record over several decades. The nuclear transport industry takes its responsibilities seriously. The industry has come together, through the World Nuclear Transport Institute, to collaborate in ensuring that it continues to meet its commitments to safety. The industry is seeking every opportunity to increase mutual understanding among the major stakeholders through dialogue and collaboration.

References

¹ IAEA International Conference on the Safe Transport of Radioactive Materials, 7-11 July 2003, Conference Findings, paragraph Ref. 2.1

² Ibid, paragraph Ref 3.2



WORLD NUCLEAR TRANSPORT INSTITUTE

7 Old Park Lane, London W1K 1QR
United Kingdom
Tel: +44 (0)20 7408 1944
Fax: +44 (0)20 7495 1964
Website: www.wnti.co.uk