

The Industry Commitment to Global Transport Safety Standards

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Introduction

No transport, no fuel cycle. No transport, no time urgent radiological medical applications.

Stop transport and eventually the whole thing grinds to a halt, at great cost to society. Transport is not a side issue – it is integral to the whole process of matching product to markets. Make transport more difficult, through denials or delays of shipments by carriers for example, or refused entry to ports or terminals, then the timelines for delivery and the cost structure of transport are affected adversely.

Many things can affect the willingness of carriers to accept radioactive (Class 7) consignments – maybe the operators are unsure about insurance implications. Perhaps they worry about the perception of other customers whose goods they want to carry. Maybe they think special handling procedures, or reporting requirements, are too complicated, or too onerous. Perhaps they are put off by problems with ports or terminals which themselves are not prepared to accept Class 7 cargoes. In short, the carriage of Class 7 goods may simply not look like it's worth the bother.

The Regulator and the Regulated

The radioactive material transport sector operates within a highly stringent regulatory regime with regulations at all levels, from international to national to modal. No sector of the transport industry is more highly regulated and incidentally, no sector of the transport industry has a better safety record. This is due in part to the tight regulatory regime; but credit is due also to the professionalism of those in the industry who work within the regulations.

The fact is, the regulations don't mean anything, in practical terms, until they are implemented by the companies who do the packing, handling and transport. Industry

depends on stability for safe and efficient operations. A stable regulatory framework provides predictability, it allows familiarity. The bottom line of transport safety regulation is, of course, safety. But safety is not a factor only of the wording of regulatory provisions. A stable regulatory regime; one that is well understood, universally implemented and commonly interpreted, enhances safety. In many areas affecting transport safety the engineering is well-known and established. For example, there really is no requirement to alter tried and tested package designs every two years.

Stability for Safety

The foundation for the transport safety regulatory regime are the transport safety standards of the International Atomic Energy Agency (IAEA). Those standards are reviewed every two years. This does not imply that the standards should change substantially every two years. The process of regulation review has itself been under review for some time at the IAEA. The World Nuclear Transport Institute (WNTI), on behalf of its industry members, has advanced the view that the principle should be – change if necessary, but not necessarily change. And yet, in the last review cycle some 200 proposals for change to the IAEA regulations were submitted. This, notwithstanding the fact that the regulations had just gone through a previous two year process of review and amendment. And in the current round, still there were over 100 proposals put on the IAEA table. The well known saying comes to mind – “if it isn't broken, then don't fix it”. We would like to see a more rigorous filtering process, with change proposals subject to a detailed cost-benefit analysis. The criterion should be, whether the proposed change truly represents a substantial enhancement in safety. It is encouraging to note that at an IAEA meeting on transport

Conference paper

safety last autumn, a streamlined regulation review process was recommended. Under this new arrangement, there would be a genuine review of the existing regulatory regime first, on the basis of which it then would be determined whether any changes should be considered. The net effect is that we can look forward to stability in the existing regulatory regime for the next few years at least.

Existing documents, such as the IAEA transport safety standards, known as TS-R-1, appear cumbersome and even daunting to some. It should be possible to make them more user-friendly. Nor is it unreasonable to expect that comprehensive guidance documents, which support implementation of the regulations, should be made available at the same time as the Regulations.

The IAEA transport safety regulations provide an international framework for Class 7 transport safety, but the regulatory regime within which industry operates goes well beyond. The IAEA regulations find their way into the regulations of modal organisations such as those of the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO). They are taken up in regional regimes such as the European provisions for road, rail and inland waterway safety. And overarching all are the United Nations Model Regulations for the transport of dangerous goods of all classes. There is a growing recognition that more effort should be devoted to ensuring harmonisation among all these instruments in the interest of clarity, agreed interpretation of provisions, and agreed implementation dates.

Industry's Responsibility to be Positive

There is a necessary synergy between the regulator and the regulated – the regulator whose job it is to make and to enforce the rules, and those whose job it is to transport within the rules. Harmonisation issues, which can impede efficient and timely implementation of regulations, can occur at any stage of the process. And so, the regulator and the transporter can be more effective in achieving their purposes when they co-operate.

Industry has its share of complaints; so too do the regulators. It's easy to define the problems; not so easy always to come up with the solutions. Industry for example has no trouble cataloguing problems related to a lack of harmonised regulations, to different implementation schedules, or to differing interpretations of the requirements from one jurisdiction to another. But stating the problems by itself gets no-one anywhere.

It is industry that experiences the harmonisation problems on a daily basis; more than the national competent authorities; it is industry that operates within and between different jurisdictions. And so it is industry which must cope with the varying application and interpretation of regulations worldwide.

To take a practical example, the independent reviews of package designs, and re-validation of approved packages,

carried out by the various national competent authorities, can complicate international shipments. National authorities carry out independent reviews of the criticality safety of packages containing fissile materials, as is their responsibility to do, but the underlying assumptions which are used in their calculations can differ. And thus, the outcome is that the requirements for implementation are not uniform. A single design may require preparation of multiple criticality analyses to obtain base approval and foreign validations. This process can be time consuming and resource rich.

So, it is for industry to share experiences and information where it can, in the interest of developing consolidated industry positions. Industry knows what the problems are; it follows that industry should have some ideas on how to improve the situation. Can industry develop guidelines to ensure more structured, systematic and consistent approaches to satisfy the requirements of safety cases? Certainly, if industry does have some ideas, it stands a better chance to change things when it works together, shares information and strives to find common ground.

And that is where the World Nuclear Transport Institute – or the WNTI as it is known – comes in. To continue with the criticality assessment example, companies within WNTI are working to develop industry views on whether some form of generic industry knowledge base on assessing criticality is possible. Good progress is being made. This is a good example where the various companies potentially can assist each other by sharing experiences, and drawing appropriate lessons to improve the situation. It should be possible to conduct this exploration while respecting company prerogatives to provide the specific justifications appropriate to their situation and also, to be sensitive to commercial interests.

To take another example, although there is a standard way of transporting uranium concentrates, the methods employed in using 55 gallon drums and ISO containers varies considerably. For example, the drums themselves are not standard and have different fastenings. The drums are situated and fastened in the ISO container in a variety of ways, and there is no universal standard for packaging the drum in the ISO container. Issues arise with regard to the packing material used to secure the drums, including its disposal. The stowage of ISO containers on vessels varies considerably. Assurances have to be given that empty containers are returned free of surface contamination in accord with IAEA transport safety standards.

Once again, the WNTI has established an industry-driven task force to allow industry to explore whether it is possible to work towards a more standardised approach. It ought not to be necessary to change significantly the way uranium concentrates currently are transported. However, it seems a journey worth making to see whether it might be possible, through information exchange, a sharing of experiences, and solid analysis, to agree methods using more standardised equipment, approved transporters and some standardisation on packaging.

Sustaining Shipping Options

Denials and delays of shipments is another area where it is all too easy to assemble a lengthy catalogue of problems; but not so easy to come up with the solutions. Impediments to the timely transport of radioactive materials is not only time-consuming, costly and inconvenient, it can in certain circumstances adversely impact safety. Safety and efficiency should not be undermined by a necessity to resort to complicated and roundabout routes, possibly requiring more frequent handling from one carrier, port or terminal to another. It is about time that the problems of denial and delay, long experienced by industry, have appeared on the international radar screen. It has made it on to the IAEA and the IMO agendas. WNTI is committed to do all it can to support the international efforts to address this important subject and has created an industry task force on sustaining shipping options to look at the problems of denial and delay from a solutions-oriented perspective. No one is so naïve or idealistic as to imagine that there is one pill big enough to cure all the ills of denial or delay – but just perhaps there is a variety of instruments that can alleviate or obviate some of the problems.

Within the industry we make frequent reference to the national Competent Authorities; by which we generally mean those authorities in national nuclear regulatory bodies whose job it is to ensure that transport safety regulations for Class 7 materials are implemented correctly. In reality there are many other authorities whose exercise of responsibilities can have a major impact on the transport of radioactive materials – customs officials for example, health officials, officials charged with security. Close communication and coordination among these various parts of government is important in the interest of clarity about requirements for all concerned, including importantly, for consignors and carriers. Might there be merit in a WNTI suggestion that there be one portal or entry point for industry into government, perhaps situated within the national regulatory authority, when issues affecting operations arise that cut across jurisdictions and responsibilities within the state?

Public Perceptions

It would be remiss not to mention public perceptions of transport; because public perceptions have an important impact on the acceptability of transport options, and on the ability of industry to deliver its materials in a cost-effective and timely manner. An ever more internationalised nuclear industry, with increased transports to more destinations, greater attention to the growing requirements for decommissioning, and the pursuit of long-term storage solutions, all in an age of heightened security concerns, and a very public debate on energy choices for the future, make the public more sensitive to the role of the nuclear industry and the transport of radioactive materials.

And it's not just a matter of perceptions of radioactive materials transport. An incident in any sector of the nuclear

industry can and does have an impact on all other sectors, so cautious is the public about the apparent mysteries and perceived risks of radioactive materials.

Industry has made giant strides and is doing a much better job today of communicating than it did in past decades. But communicating is a process rather than an end – it must continue without let-up; we must be innovative in conveying our messages of necessary and safe transport to contemporary society. Ours is a generation more environmentally aware than ever before, a generation more sensitive to the perils to our ecosystem. It is a generation also seemingly sceptical of all-knowing authority from above and, perhaps, a generation not over impressed by the technocrat. People talk in terms of values; they have attitudes. Intuition and feelings seem to count for as much as facts. So it is at this level that industry must reach out to its audiences. It must be prepared to acknowledge when and why things sometimes go wrong; it must be prepared to answer sometimes awkward questions of public concern. Science, engineering, must be situated in its political and social context if it is to be supported. Ultimately it is an issue of trust – how far can the public trust the industry to provide, reliable, objective and the fullest possible knowledge. Facts yes – but more is needed.

Summary

There is a widespread recognition today that maintaining transport options in the interest of bringing the benefits of radioactive materials where they are wanted the world over requires open and sustained dialogue between the regulator and the regulated. This is improving. It also requires close collaboration among all parties in the industry – this too is increasing. 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 in the regulation review and implementation processes. Practical, efficient and safe transport regulations should take full account of their impact on those who do the transporting. But industry does itself no favours if it is seen as only moaning or complaining; it should offer support, encouragement to the other stakeholders and work together to propose solutions where improvements are called for.

There is a powerful message to be told here – radioactive materials transport plays a vital role in bringing 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 and to take a positive and inclusive approach to the important issues before it.



WORLD NUCLEAR TRANSPORT INSTITUTE

Conference paper

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