WNTI

World Nuclear Transport Institute

User Friendly Instruments for Enhancing Communications

conference paper

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Abstract

Radioactive materials are widely used in everyday life, but the transport of such materials receives more public attention than the transport of other classes of hazardous materials. To improve this situation, the nuclear transport industry and other stakeholders in the safe, efficient and reliable transport of radioactive materials need to develop and maintain the way they effectively communicate messages to the public. Industry and regulators can communicate a clear picture of the issues involved in transporting radioactive materials using the wide range of resources that are available. These include technical and communications staff, audio-visual aids, internet sites, print material, facility tours, and publications geared specifically to communicating with the public. It is necessary for industry and competent authorities to train technical staff in effective communications with the public, train communications professionals about the technical issues involved so that they can better present the issues, make effective use of all means of communicating messages (videos, web sites, written material and facility tours), ensure that all published documents are written in straight-forward language easy for the public to understand, and ensure that the explanation of risks includes comparisons with other activities to help the public visualise the situation.

1. Introduction

The use of radioactive materials (RAM), and their transport, are vital components to many aspects of our everyday lives. Radioactive materials are used in medical diagnostic equipment and radiopharmaceuticals, as the key component in many smoke detectors, in the exploration for oil and natural gas, to date historical artifacts, in research applications in metallurgy, genetics, biotechnology and engineering, and in nuclear power plants to produce electricity.

The transport of RAM attracts an inordinate amount of attention compared to other classes of hazardous materials, due partly to a perception by some decision makers, some in the media, and general public that the risks associated with RAM transport are somehow greater than those for other classes of hazardous materials. Groups opposed to the use of nuclear power to produce electricity further exaggerate this skewed perception of relative risk. Radioactive materials have been transported safely for decades, but industry cannot rely solely on this exemplary safety record to provide assurance to the public. It is also necessary for industry, national competent authorities, experts and governmental organisations to make a concerted effort to enhance communications with the public so that limited regulatory resources can be applied to those activities that carry the greatest safety significance.

2. Communicating the benefits of radioactive materials

The perception that the risks of transporting RAM are greater than those for other classes of hazardous materials is a complex issue for the industry, RAM users and national competent authorities to address. It is important to explain the benefits of RAM and the reason why this transport is necessary, so that the public will better appreciate the importance of these materials being transported.

The use of RAM is a vital aspect of our daily lives. Important applications of radioactive material range from medical diagnostics to the production of clean, efficient electricity.

In order to realize the benefits of these applications, transportation becomes the vital link between the producers of RAM and the ultimate benefactors – the consumer.

For example, the various transport steps involving nuclear fuel cycle materials – from uranium mining to processing facilities, to transport of fuel to nuclear power plants, and to transport of used nuclear fuel for storage or disposal – are all necessary in the production of electricity from nuclear energy. Nuclear energy supplies approximately 16% of the world's electricity without emitting green house gases or controllable pollutants such as sulfur dioxide and nitrous oxide. While much of the opposition to transporting RAM is aimed at these nuclear fuel cycle materials, these are just a minor fraction of total radioactive material packages shipped on an annual basis. Transport of RAM associated with nuclear power plant operation represent a fraction of the 10 million packages of RAM shipped each year internationally. The bulk of the shipments are radiopharmaceuticals and RAM for industrial uses.

3. Communications training

Public opinion research in the USA indicates that the majority of Americans view nuclear scientists and engineers as an "excellent or good" source of information on nuclear energy issues.[1] Similar conclusions were made in public opinion research by Environment Canada which found that scientists were the most trusted spokespeople. Environment Canada has embarked on a training programme to "foster communications skills for scientists and also develop better links between communicating scientists and departmental communications staff". [2]

Technical staff can serve as very credible sources of information, particularly when communicating complex issues. It is important to give technical staff training in effective communications to enhance their ability to reach the widest audiences. Training could include basic communications skills to assist technical staff in describing technical matters in terms easily understood by the public, instead of using technical jargon. More intensive training can include training in preparation for interviews with electronic and print media, debate training where individuals may need to counter opposing views, and so on.

Communications professionals usually are the first to field questions from the media and a broad knowledge of these issues is important. Thus, it is equally important to train communications professionals to help them better understand complex technical issues, such as package testing requirements, risk assessment, regulatory framework, and so on.

4. Communications resources

In addition to using human resources to best advantage, there is a wide range of other resources including audio-visual aids such as videos, internet web sites, print material, facility tours, and publications geared specifically to communicating with the public.

5. Using video to convey a key message

Audio-visual media such as videos can be valuable in describing complex topics. An excellent example is a video developed by the Nuclear Energy Institute (NEI) entitled, "An American Success Story: The Safe Shipment of Used Nuclear Fuel". This video uses computer generated graphics to demonstrate the multiple layers of transport package construction, film footage of actual container tests performed at the US Department of Energy's (DOE) Sandia National Laboratories (SNL), and interviews with experts on transport safety. It provides a highly effective means of communicating a complex subject – used nuclear fuel transportation safety – in a manner easily understood by any audience.

BNFL, COGEMA and the Japanese Overseas Reprocessing Committee (ORC) have developed several videos ("Safe Passage","More for Less", "Transporting Nuclear Materials by Sea – Safety in Depth") to explain all the details on the transport concept for mixed oxide fuel (MOX) and vitrified high-level radioactive waste (HLW), including descriptions of the material transported and the energy context associated with the transports.

6. The wide reach of the world wide web

The internet has put a great deal of information at the public's fingertips and should be employed by industry and regulators to communicate on RAM transport issues. Regulatory agency web sites can be used to post regulations governing RAM transport, provide regulations for public comment, distribute technical documents and fact sheets, and communicate the results of risk studies. Industry can use web sites to post fact sheets providing information on transport package design and safety features, safety records and emergency response planning, and provide links to other web sites. Several internet sites that are useful references on this subject are discussed below.

SNL runs a web site developed for the US DOE National Transportation Program (www.sandia.gov/tp/SAFERAM/RAM_HOME1.HTM). This site provides public information on radioactive material packages including examples of some of the "severe testing" performed on Type B packages, photos taken during and after tests, and video clips of various thermal and impact tests.

WNTI was established to promote sound and objective principles for ensuring that radioactive material is transported safely, efficiently and reliably within a secure international framework. Its website (www.wnti.co.uk) covers all aspects of RAM transport and is intended to help those with no knowledge of the industry gain a better understanding of terminology and regulatory aspects.

The UK National Radiological Protection Board's internet site (www.nrpb.org/understand/index.htm) has a section on "Understanding Radiation" including a module on RAM transport which provides background information on the uses of RAM, transport package types, transport regulation, and links to other internet sites. It is easy to navigate and written in simple language providing a useful source of information.

The French National Competent Authority (ASN) operates a website providing comprehensive information on nuclear safety in France (www.asn.gouv.fr/actualite/evenements/index.asp "transport de matières nucléaires"). In the field of transport of radioactive material, reports of transport inspections as well as reports of incident and accident (using the INES scale as a media tool to communicate on the severity of the incident) are available. The website also presents press releases, information files on selected items and annual reports.

7. Facility tours – seeing is believing

Another powerful resource available to industry is providing tours of key facilities to decision makers, the media and the public so they can have a first-hand view of how facilities operate and the regulatory and safety culture of the industry. This includes tours of nuclear power plants, fuel cycle facilities, manufacturing facilities that use or produce RAM, transportation vehicles and shipping vessels, and transportation package fabrication facilities. Many of these facilities have visitors centres and trained communications professionals to provide another source of credible information. Tours of nuclear facilities showing the various types of operations have been used effectively around the world.

COGEMA has employed an interesting supplement to facility tours by installing cameras at its La Hague facility for real-time broadcast over the internet including placement of cameras in various locations at the La Hague facility, in the Valognes rail terminal and in the Port of Cherbourg (www.cogemalahague.com). While the live broadcasts have been suspended for security purposes, the use of cameras and video tape on internet sites to show transport related operations can provide another tool for communicating with the public and is one that other companies could consider as a supplement to facility tours.

8. Use of simple language in written material

In order to communicate successfully, it is important for industry and competent authorities to communicate in simple language avoiding industry jargon and acronyms, and summarise technical information so it is easily understood. Technical analyses on transportation risk assessment generally are written in very technical language. Summarising the results of these studies in simple language is an important step in communicating the results.

Information brochures developed by BNFL, COGEMA, and ORC for shipments of MOX and vitrified residues from Europe to Japan provide a good example of information material covering all aspects of RAM transport. The materials are written in simple language, have been prepared in several languages and cover a range of topics including package design and safety requirements, design of the purpose-built Pacific Nuclear Transport Limited (PNTL) ships, security and physical protection, emergency response arrangements and exercises, and so on, and include colour photographs and diagrams of transport packages, transport operations and shipping vessels.

Since many in the public do not have a good understanding of radiation or radiation dose measurement, it is important to provide comparisons of radiation dose from RAM transport with natural background radiation doses, natural and man-made sources of radiation, and so on. The American Nuclear Society (ANS) has developed a worksheet allowing the public to "estimate" personal annual radiation dose, including values for common sources of natural and manmade radiation. It can be downloaded from the ANS internet site (www.ans.org/pi/raddosechart).

9. Summary

While anti-nuclear groups will continue to advance inaccurate information regarding RAM transport and try to raise the fears regarding transport risk, these efforts can be counter-balanced by the nuclear industry if it makes a concerted effort to listen to the concerns of the public and decision makers, provides factual, easily understood information, and corrects inaccurate information.

References

1 Bisconti Research, Inc. with Roper ASW. National telephone survey of 1,000 US adults were interviewed May 30 – June 1, 2002.

2 Environment Canada, *"Advances in Developing a Science Communications Curriculum"*, Poster presented at Conference on Communicating the Future: Best Practices in Communication of Science and Technology to the Public, March 6-8, 2002, sponsored by the US Department of Energy Office of Science and NIST.

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