



From Front End to Back End: Establishing Safe Transport Links

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In recent years the business of transporting nuclear materials has become increasingly challenging due to a number of factors which place this sector of the nuclear industry under a worldwide spotlight. A variety of political pressures are being exerted on transport regulations from countries that previously had no or little interest in nuclear transport. Strategies adopted by opposition lobbies are also key factors which influence and characterise the possibilities for the current transport market.

Consequently, the nuclear industry relies on transport specialists such as BNFL and Transnucléaire. Such companies are recognised for excellent service and professionalism, the quality of equipment and the rigour of their procedures. They also possess the communications infrastructure to provide robust solutions which meet the stringent national and international regulatory demands, and which support their business requirements to perform transports in a completely safe and efficient manner.

At a time when regulations are becoming ever more stringent, the requirement for the presentation of consistent information to the regulatory authorities is becoming essential for success. Only by doing this can the key players in the transportation industry hope to influence the key decision makers to legislate a sound, fit-for-purpose policy regarding nuclear transportation.

International co-operation in the carrying out of all types of nuclear transportation is becoming more widespread. BNFL and Transnucléaire are entering a new period of “Entente Cordiale” focused

on safety, regulatory and communication issues, which can only aid the nuclear transportation industry in moving forward. This development will be of great benefit for the nuclear industry as a whole and also of benefit to all customers.

This paper focuses on some of the areas of international co-operation promoted by both BNFL and Transnucléaire, the two leading transporters worldwide, to ensure that transportation of nuclear materials can be carried out in the safest possible manner.

An International Business

Transport is a vital element of and for the nuclear industry. Furthermore it is clear that the growth of nuclear transportation will increase as the whole nuclear industry expands. BNFL and Transnucléaire’s transport expertise covers all the stages of the nuclear fuel cycle, beginning with the front end stages of uranium mining, conversion, uranium enrichment, fuel fabrication and transportation of the fresh fuel to the reactors, continuing with by the back end of the cycle, i.e. spent fuel, products of reprocessing and new mixed oxide (MOX) fuel. Both BNFL and Transnucléaire fully support this market in offering a wide portfolio of integrated transport solutions to potential customers.

Transportation is thus a key strategic component of the nuclear fuel cycle industry, contributing to the production of one of the most vital commodities of the modern world, electricity, in a safe, routine and cost-effective manner.

The quantities of materials transported annually by this industry are very low. Over 10 million radioactive material packages are transported all around the world each year, of which only 5% relate to nuclear fuel cycle materials. The remainder consists of radioisotope transports, generally used for medical purposes. However, when compared to the transport of traditional freight, the volume of radioactive cargo transports worldwide is minimal.

Despite this small volume, the nuclear transportation industry faces real challenges in carrying out this lawful business. The main transporters worldwide, including BNFL Transport on behalf of BNFL and Transnucléaire on behalf of the COGEMA Group, have developed a policy of transparency, clarity and openness, in order to inform the authorities as well as the public. It is felt that this is done not only in the interest of the transporters and their customers, but also in the interest of the nuclear industry as a whole. We use this approach in all dealings which affect our business.

Skills and Technologies to Ensure Safety

Safe operations remain, and must continue to remain, a key distinguishing feature of the nuclear transportation industry. The public's legitimate fear about the potential for a nuclear incident must never be realised. It is the work of the nuclear transport industry to both ensure and promote, in a concerted and co-ordinated manner, the message that "These transports are safe in our hands".

Both BNFL and Transnucléaire employ highly-skilled specialists who are respected on a world level by peers and regulators for their knowledge and skills. Many of our staff perform a key role of providing comprehensive technical data to international bodies, such as the International Atomic Energy Agency (IAEA), International Maritime Organisation (IMO), etc. It is this multi-faceted nature of the transport organisations that makes BNFL and Transnucléaire world leaders in the field.

Not only do both companies have a highly skilled staff base, whose knowledge and experience is second to none, but the asset base is of the highest order in terms of safety. All assets, including in particular ships and flasks, are designed and manufactured to the highest safety standards and comply fully with all national and international regulations. In the case of flasks, these undergo rigorous design and testing checks prior to being introduced into service. As far as ships are

concerned, Pacific Nuclear Transport Ltd (PNTL), a subsidiary of BNFL, operates a fleet of five dedicated nuclear transport ships, specially designed for this type of cargo. Transnucléaire's two ships are also specifically designed to the highest relevant safety standard for their cargoes.

In order to ensure that both companies are at the leading edge of ensuring transport, both BNFL and Transnucléaire maintain constant dialogue with the relevant safety authorities. Representation is assured on the relevant safety committees and both organisations sustain an exchange of information that assists in providing a co-ordinated approach towards the development of safety regulations which govern this industry.

It must be realised that transport of radioactive materials is a worldwide business, and even a minor incident in a certain part of the world might jeopardise the activity of another part of the industry in a totally different part of the world. Any operator should consider itself as responsible towards the rest of the industry for making sure that transports are carried out without incident.

Safety Culture and Management of Transports

Safety culture is technically defined as the shared values, practices and goals promoted by an organisation to achieve safe operation with a low rate of problem occurrence. It is the foundation upon which a business structures and builds its operations. It defines and creates the company culture and shapes the working environment in order to achieve long term successful business operations.

What does all this really mean? For the British and French, establishing a strong safety culture means focused discussion, defining the key activities, and then implementing them correctly and in a timely manner. The key defining factor of a safety culture though is to promote sound, experience-based assets and procedures and the safety culture must permeate all parts of the transport structure.

To take an analogy: all of us desire to have a safe comfortable home, and safety culture is similar to the foundation of that home. The integrity of that home depends on two factors. One is how sound the existing structure is (organisations and programmes) and the other is how sound the foundation is. However, soundness of the foundation alone does not determine the integrity of the home. The same is true that safety culture alone does not determine the safety performance of an organisation.

In carrying out transports of radioactive materials, BNFL and Transnucléaire have two clear objectives: security and safety. By satisfying those two objectives, the two organisations can ensure that the transportation business is carried out both safely and professionally within the safety culture.

Security is a responsibility that is taken very seriously by both organisations in making sure that the cargo cannot and is not diverted by employing fit-for-purpose equipment, a high degree of security-based procedures and skilled, competent personnel. As for safety we must make sure that we maintain at all times full control over any risk of irradiation and criticality presented by the material being transported to the extent that there is absolutely no detrimental effect on both the public and the environment. Such control includes provisions for full and appropriate emergency response arrangements.

By maintaining this commitment to both these objectives at all times, and by carrying out all transports in a safe and efficient manner, BNFL and Transnucléaire can develop trust and acceptance from both regulators and the general public.

The Regulations

It is worth noting that transport of international nuclear materials began in 1961 after the International Atomic Energy Agency (IAEA) first developed a philosophy and a set of guidelines governing nuclear materials transport. Since this time the regulations and guidelines of the IAEA have been constantly reviewed to their current status. Today, all transport of nuclear materials is governed by the regulations of the IAEA Safety Series, which have been, in the case of both France and the UK, enacted into national legislation. Both BNFL and Transnucléaire, through their respective governments, support this organisation to ensure a coherent, co-ordinated workable set of regulations.

As transport of nuclear materials takes place in the public domain, the regulations by which this business is governed are strict. There are several reasons for this. On the one hand, it is to protect the material being transported from human errors and interventions. On the other hand, it is to protect the public and the environment from the contamination and radiation risks associated with the radioactive nature of the material. Safety regulations have been constantly improved, adopted and reinforced, to assure safety, quality and effectiveness in the industry. The industry has been working with the IAEA through various

working groups to promote the new IAEA Safety Series regulations which are to come into force in 2001. To ensure public and political support, it is vital that the industry takes a leading role in self-regulation and takes the matter of regulation as a key priority

An Open Communication Policy

Open communication is an accepted and normal part of the nuclear transportation industry. All nuclear transport companies, including BNFL and Transnucléaire, have realised that, with the global communications revolution, news is now reported instantly on a worldwide scale. The nuclear industry must be in the vanguard of providing information to target audiences, given that so many individuals now have access to a much larger volume of information. The anti-nuclear bodies for example all have internet sites and all have a large technical section concerning transport of nuclear materials portrayed as "The Facts". It is true to say that facts in this case may be stretching a point, but the target audience react well to this type of stimulus. BNFL and Transnucléaire both have web sites dedicated to the provision of a balanced and informative argument with the real data of transportation of nuclear materials.

The following are key strategies that BNFL and Transnucléaire have followed in promoting their communication policy:

- The concern about the safety of hazardous materials transportation in general has increased during the last two decades; the public requires transparency and its expectations and concerns are legitimate. The key message that nuclear transporters must give is that our safety record in this industry is second to none. This is a message that is well received by various audiences.
- The media play an increasing role in forming public perception and opinion. Again, this is perfectly understandable when one considers that the public knowledge on this matter is extremely limited. The industry has thus to anticipate and explain very quickly any special situations which may arise during transport.
- Communication systems are such that any event can be known worldwide very quickly. This is the result of the modern communications boom. For instance, over the past few years, particular shipments have taken place with a high degree of media interest. Most anti-nuclear arguments focus on the safety aspects of these transports. The duty of the transport industry

is to demonstrate that such nuclear operations are safely and professionally carried out on a routine basis.

- BNFL and Transnucléaire are active participants in conferences, both at an organisational level and ideas level (i.e. presenting papers). At this particular forum, new developments and common strategies can and are debated freely between all competitors.
- Both companies actively encourage visitors to their sites. In fact, the Visitors' Centre at Sellafield is one of the most popular tourist attractions in the local area, with over 120 000 visitors annually. Similarly, the La Hague facility of the COGEMA Group has an impressive number of visits annually. By encouraging "Joe Public" or "Jean Durand" to visit our sites, we are encouraging people to make up their own mind on the facts. Simple first hand experience of a situation is, we find, one of the best ways to gain trust and acceptance of our business.
- Both organisations have a wide range of product and service literature which are freely available, not only to customers, but also on request to anyone. We also have fully-functional communications departments, staffed by experts who are able to deal with daily enquiries from the public, media, government, anti-nuclear campaigners, etc.

A successful part of our common communications strategy was "Project Evidence", which took place in 1997, where BNFL, COGEMA and Transnucléaire invited a target audience of academics, scientific experts and journalists from Latin America, Australasia, Central America, South Africa and the USA on a tour of nuclear facilities in France and the United Kingdom. The purpose of this tour was to show our capabilities and expertise to these key opinion formers and to stress the role that safety and professionalism plays in this area. This audience responded very well to this type of message, which has succeeded in allaying some concerns that countries may have had regarding nuclear transportation.

Co-ordinated Approach to Information Sharing

BNFL and Transnucléaire are represented on many international working groups and committees. One such group is the Uranium Institute Transport Working Group. Since its creation, the UI's Transport Working Group has gathered people from different nuclear transport companies, nuclear fuel cycle companies and utilities, including BNFL, ConvergDyn, Electricité de France, New York

Nuclear, COGEMA/Transnucléaire and Tokyo Electric Power. Members of the Working Group are either in charge of daily transport operations or involved in strategic planning, communication or regulatory issues.

Members of the Working Group have the objective of improving the common knowledge of the group. In addition, the Working Group's variety of companies makes clear that transportation of nuclear materials is a significant business carried out by professional companies worldwide, the smooth operation of which is of utmost importance to the whole nuclear industry.

Public Opinion, Media and Politicians

Over the last two decades, there has been a strong political movement towards "environmentally friendly" governments and politicians, notably in Germany and the Netherlands. The nuclear transportation industry must be in a position to communicate with these key audiences to ensure that its business can continue to be carried out safely and efficiently, and therefore operates a policy of open information towards this particular political audience.

It is also important at this stage to note the increasing role that the media play in forming public opinion and perception. The nuclear transport industry must be able to explain its case to the key media opinion formers before the public can be convinced. Project Evidence, described above, is a prime example of this strategy.

Public opinion and politicians are two primary targets for opponents of the nuclear industry when it comes to nuclear transport issues. Their tactics are quite simple. By portraying nuclear transport as a dangerous activity either via the media or directly through their own campaign literature, they try to stimulate both public opinion and the politicians. Put bluntly, they hope that by nurturing the public's natural fear of radiation, pressure will be brought to bear on decision makers to further legislate restrictive regulations when the time comes for political debate.

It is worthwhile also noting that the anti-nuclear groups now occupy certain positions of privilege within the industry bodies, e.g. the International Maritime Organisation or the Oslo and Paris Convention (OSPAR). This position of power aids these groups in pursuing their policy of misinformation and half-truths, to which the response of the nuclear industry must be unequivocal. Delegates to these bodies should be briefed fully and fairly in the techniques and approach taken

by the nuclear transportation industry. We should not be averse to praising the industry's exemplary safety record and making delegates aware of the legitimate concerns we have regarding the impact of any new unjustified standards.

Anti-Nuclear Strategies

For some twenty or more years regular shipments of nuclear materials took place worldwide without incident or protest. Such shipments have always been a matter of public record, indeed papers describing these shipments have been presented in public arenas such as international conferences.

However, over recent years, society has changed and the demand of the public to have a positive influence on their own lives has grown considerably. At the same time, a myriad of pressure groups have been formed to campaign for issues on behalf of the public. Such pressure groups generally focus on one clear issue which potentially could change the way we all live in a small way. Many of these groups have a national and even international presence and actively recruit members to support their aims and lobby energetically at the political and media level.

With regard to the public, however, the strategy adopted by anti-nuclear opponents can be summarised as follows: take advantage of the public's limited knowledge regarding nuclear transport and disseminate false and so-called "scientific" information aimed at scaring the public, with the aim of making transportation of nuclear materials politically unacceptable to all parties involved by orchestrating political and public alarm, debate and outcry.

It must be made clear that the message given by one anti-nuclear group may be against a particular company, but the repercussions of this message can also be damaging to other market players. Therefore, the industry needs to work together in order to demonstrate a positive message to the global community and marketplace in which transportation takes place. It is clear that nuclear industry's first and foremost task to counter assertions of the anti-lobby is to demonstrate that nuclear energy brings a notably positive contribution to the world energy mix while reducing harmful environmental effects such as the emission of greenhouse gases.

Secondly, one must bear in mind that media campaigns against nuclear transports are conceived by people who promote their own agenda whilst remaining oblivious to the adverse consequences their actions could have on our daily lives (lessening

the share of nuclear power in the world energy mix will result in an increased reliance on fossil fuels, the main contributors to the greenhouse effect). Opponents to nuclear transports push for stricter regulations, not for any safety or ethical reasons, but simply in order to make transports more difficult and with the ultimate aim of paralysing the nuclear transport business and thus halting the production of electricity by nuclear energy.

This large scale agenda implies that the nuclear transportation community must not be isolated from the rest of the world nuclear members. The entire nuclear industry must be aware that it is essential to monitor the evolution of transport regulatory aspects. The industry must welcome any regulatory initiatives that will lead to actual improvements in safety, but must vehemently oppose regulations that will have a negative and pernicious impact. The industry must be aware that anti-nuclear groups use the tactic of focusing on technical issues by concentrating on safety standards, but their actual aim is economic, to reduce the competitiveness of nuclear power, which leads ultimately to their political aim of stopping the production of electricity by nuclear energy.

Third, nuclear industry members must be sensitive to the fact that anti-nuclear opponents have several favoured targets, including the general public, politicians and international agencies in charge of regulating and monitoring the nuclear sector. They use the same strategy in all cases by providing inaccurate statements to people who, for reasons such as being nationals of non-nuclear countries, perceive the real facts of nuclear transportation issues very differently from the countries who constantly deal with these issues. We must bear in mind that some of the anti-nuclear groups even play a role in determining the regulations to which we must adhere, through active participation in the fora which determine transport regulations.

Conclusion

As in any business sector, economic pressure is mounting on nuclear transportation service suppliers. What makes this business rather unique, however, is that safety and reliability are, and must remain, the predominant key features. The current market trends are likely to render these issues more significant than ever. In this framework, nuclear transportation companies must offer a broad and attractive series of flexible services in order to match clients' needs.

Transnucléaire and BNFL have developed a comprehensive transport organisation system, relying on well-understood and implemented procedures and capabilities which provide the appropriate level of safety and reliability. Today these systems allow both companies to respond to the ongoing changes at the front and back end of the nuclear fuel cycle for the benefit of

customers in a safe and reliable fashion, whilst also providing robust solutions to the demands of the stringent regulatory requirements. In addition, communication, transparency and co-ordination play a major role in ensuring that both BNFL and Transnucléaire maintain the trust and respect of the market, politicians and regulators.