NUCLEAR TRANSPORT
– SOME REGULATORY ISSUES

Jim Nolan
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Attachment A: Jim Nolan CV
1. Preliminary

[1.1] This part of the Council’s submissions deals with the legal dimensions of some of the issues raised in the Committee’s Terms of Reference. It is convenient to repeat those Terms of Reference here:

“The joint select committee be appointed to consider and report upon proposals by the Commonwealth Government to transport nuclear waste through and potentially store nuclear waste within New South Wales, with specific reference to the following matters.

(a) logistical arrangements associated with the proposals, including sourcing, transport and storage of waste;
(b) health and safety risks associated with the transportation and storage of nuclear waste in New South Wales;
(c) extent of possible resource implications associated with the transportation and storage of nuclear waste within New South Wales; and
(d) any other relevant matter.”

[1.2] The most striking thing about the legal issues surrounding the transport and storage of nuclear waste is the relative lack of readily accessible information concerning the legal framework within which these activities will occur. The other notable feature is the fact that the predominant responsibility remains with the Commonwealth – notwithstanding that the States and Territories retain legislative responsibility for many of the activities involved in transportation. This will be addressed below.

[1.3] These concerns are not idle. Notwithstanding what appears to be a generally good safety record in the transport of radioactive materials - combined with the fact that it may be expected that such materials as will be transported within Australia will be low level and intermediate level wastes - there can be no doubt that since the events of 11 September 2001 security concerns associated with nuclear transportation have added a new dimension to the context in which the transportation will occur. These concerns will need to be factored into any additional regulatory measures which are necessary to supplement the existing regulatory regime.

[1.4] It is submitted that it is extremely difficult for ordinary citizens wishing to acquaint themselves with the existing regulatory framework governing the transportation of nuclear waste to have to consult with, at a minimum, three separate documents (and, arguably, many more) before a proper appreciation of the regulatory scheme can be obtained.

[1.5] Different, but perhaps more significant difficulties may be experienced by NSW government agencies because of the legal and regulatory uncertainties which surround the transport of nuclear waste materials. It is pointed out below that this lack of clarity and the uncertain relationship between state and federal law will almost inevitably result in jurisdictional disputes - the last thing needed where an issue as controversial as exposure to radioactive waste is at stake. These are real and tangible concerns since, in the final analysis, accidents usually mean costs and legal responsibility determines where these costs fall.
2. National Regulation

[2.1] The primary regulatory authority of radioactive materials within Australia is the Australian Radiation Protection and Nuclear Safety Agency ['ARPANSA']. ARPANSA is established under the Australian Radiation Protection and Nuclear Safety Act 1998 ['the ARPANSA Act'] which describes its functions as follows:-

The principal objective of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is to protect the health and safety of people, and protect the environment, from the harmful effects of radiation. To meet this objective, a regulatory framework has been developed which reflects best international practice in radiation and nuclear regulation and is consistent with the requirements for radiation protection and safety of the Australian State and Territory regulatory authorities. The legislative requirements set out in the Australian Radiation Protection and Nuclear Safety Act 1998 and Regulations form the top tier in the hierarchy of regulatory documents.

[2.2] Within ARPANSA is a body known as the Radiation Health and Safety Advisory Council which has responsibility (inter alia) for promulgating Codes of Practice. The Council includes representatives of the States and is responsible for the promulgation of the relevant codes of practice which are issued under the ARPANSA Act.

[2.3] In 2001 ARPANSA issued a regulatory impact statement for a proposed code of practice for the safe transport of radioactive material. The impact statement was followed by the promulgation of a Code of Practice known as the Safe Transport of Radioactive Material Radiation Protection Series No. 2 ARPANSA 2001 ['the Code'].

[2.4] The ARPANSA Act provides that any proposed code of practice is to be furnished to the appropriate State and Territory ministers and, if the Commonwealth minister decides, public comment is also invited. The Governor General then approves the code of practice so developed and the codes appear to have the same status as subordinate legislation of the Commonwealth. Just as subordinate legislation may be disallowed by either of the Houses of Parliament, so too, the codes of practice are tabled in the Houses in the same way that Regulations are tabled.

[2.5] The Commonwealth also has a separate power to make a regulation which negatives the effect of a State law in relation to Commonwealth places within the State. The Governor General is empowered to make orders regarding the health or safety of persons or the environment when these are likely to be harmed by a situation resulting from a nuclear activity that exists in a State or Territory and where the laws of the Commonwealth or State or Territory are deficient with respect to the protection of persons or the environment likely to be effected by that situation.

[2.6] The most important feature of the Code is its adoption of the International Atomic Energy Agency Regulation for the Safe Transport of Radioactive Material (1996 Edition) (as revised in 2000). There are some specific modifications and clarifications to the IAEA Regs contained in s.2 of the code. Section 2 also requires particular nominated paragraphs of the International Regulations to be complied with by consignors [s2.8]. Similarly, particular paragraphs of the IAEA Regs are required to be complied with by carriers [s2.9]. Certain authorities are delegated as "competent authorities" for the purposes of the code of practice and transport arrangements [s2.10]. The IAEA
Regulations deal in some considerable detail with the the transport of nuclear waste, including requirements describing the kind of packaging required in particular cases and also with controls over contamination and for leaking packages.

[2.7] The powers of ARPANSA to inspect and regulate, and the powers of the Radiation Health and Safety Advisory Council to prescribe codes and standards add up to a significant potential capacity to regulate the transport of nuclear waste materials. While addressed in general terms in the IAEA Regulations, the degree of prescription required to implement the IAEA regulations in practice appear to be yet to be formulated.

[2.8] The deficiencies in the statutory regime have been highlighted by no less significant body than the (then newly appointed) Radiation Health and Safety Advisory Council which referred to following advice to the CEO of ARPANSA in December 2002:

“The main issues confronting Australia in relation to transport of radioactive material, including radioactive waste, are that with so many jurisdictions and competent authorities, uniformity and cross-jurisdictional issues arise in the implementation of the Transport Code within different regulatory frameworks. The recommendation includes issues identified by an earlier meeting of Transport Competent Authorities, on which there has been little progress”. [Council Advice on Radioactive Waste 11 December 2002.]

[2.9] In his response to the Radiation Health and Safety Advisory Council’s request, the CEO of ARPANSA agrees with its recommendation and pointed out that now that the Code has been adopted in most jurisdictions, the issues identified by the Council need discussion and resolution by the Transport Competent Authorities Working Group ['TCAWG'] - a body referred to under the Code. It appears that at least at the date of the response (December 2002) the TCAWG had not met for a considerable time, and it was proposed to refer these issues to its convenor.

[2.10] It is significant that the Advisory Council identified potential problems arising from the need for regulatory uniformity and raised the alert about potential ‘cross-jurisdictional issues’ which will inevitably arise in the implementation of the Transport Code within different regulatory frameworks.

[2.11] Even accepting that these implementation issues can be addressed in a satisfactory manner, it should also be noted that the Code says very little about the issues of legal liability and responsibility which attach to the various handlers of radioactive material. Nor, for example, does it require the Commonwealth, as the ultimate authority responsible for ARPANSA and ANSTO, to provide an indemnity to those who suffer from any environmental calamity which might flow from the release of radioactive material for any reason. These issues are taken up in more detail below.

[2.12] While a co-operative scheme si to be preferred, it should be noted that ARPANSA has significant power over Commonwealth contractors and has the power, *inter alia*, to regulate, inspect and control a ‘Commonwealth contractor’ (as defined in the ARPANSA Act’) engaged in the transport of controlled material, that is to say, nuclear waste material. ARPANSA can regulate to a very a significant degree, the circumstances in which nuclear waste transportation can take place. The scope of that regulation is also addressed below.
[2.13] In conclusion, in this section, it should also be noted that the final regulatory say is the preserve of the Commonwealth through the ARPANSA Act. Section 83 of the ARPANSA Act allows ARPANSA to pre-empt the operation of state laws:-

**PART - 8 - Miscellaneous 83 Operation of State and Territory laws**

*If a law of a State or Territory, or one or more provisions of such a law, is prescribed by the regulations, that law or provision does not apply in relation to the following:*

(a) an activity of a controlled person in relation to a controlled apparatus or a controlled material;
(b) an activity of a controlled person in relation to a controlled facility.

3. **NSW Regulation**

[3.1] NSW law deals with the specific issue of radioactive material as well as more generally with hazardous materials and occupational health and safety. Potential transport accidents involving nuclear wastes may be dealt with under the *Emergency and Rescue Management Act 1989 (NSW)* ['ERM Act']. The ERM Act requires the development of a range of plans generally known as ‘DISPLANS’ which are developed to address potential emergencies. These plans are designed to produce an appropriate response according to the scale of the emergency. The plan takes into account the ‘escalation’ of an incident to move assistance from local to district to state level. All responsible agencies are required to have internal instructions and or standing or operating procedures to make resources available when required.

[3.2] The relevant NSW legislation which delas specifically with radioactive substances is the *Radiation Control Act 1990* ['Radiation Control Act'] which has itself been recently amended. The *Radiation Control Act* obliges NSW to harmonise its regulatory regime with the Federal Code of Practice and relevantly makes the carriage of radioactive substances an offence unless such carriage is undertaken in accordance with the requirements of the *Code of Practice for the Safe Transport of Radioactive Material*, issued by ARPANSA: see *Radiation Control Regulation 1993*, section 23.

[3.3] As the Advisory Committee has pointed out however, the precise issues which remain the subject of NSW law remain problematical and may give rise to ‘jurisdictional’ and similar disputes – a state of affairs which is far from satisfactory in circumstances involving the handling of nuclear waste.

[3.4] For completeness, reference is made to the other significant piece of legislation in New South Wales which deals with nuclear issues. This is the Uranium Mining and Nuclear Facilities (Prohibitions) Act 1986. This legislation specifically allows – perhaps making a virtue of necessity – for the operation of commonwealth law in this field [s8(3)]. It is difficult to see how this Act will have any relevant bearing upon the regulation of transport of radioactive material because of the exemption.
4. Regulation in Theory and Practice

[4.1] There is no doubt that the ARPANSA Act, the Code and the IAEA Regulations all combine to promote a level of regulatory reassurance for the Australian community. The effectiveness of a regulatory scheme however, requires the commitment of resources and practical measures which guarantee the implementation of the regulatory scheme. Not surprisingly, the issue of the transport of nuclear waste and the regulatory regime which governs it, has become contentious in the United States of America, especially since new large repositories of nuclear waste have been identified by the US Government in recent years. Since the advent of that decision and as full scale transportation to permanent disposal sites begins, an ever greater number of communities around the USA will be exposed potentially to nuclear waste than ever before.

[4.2] In a comprehensive article “TRU Co-operative Regulatory Federalism: Radioactive Waste Transportation Safety in the West” (2002) 22 The Journal of Land Resources and Environmental Law 41, Bernard P. Haggerty identifies significant gaps in the US regulatory framework. The article identifies not just gaps in the recording by the Atomic Energy Commission of accidents suffered by shipments of radioactive waste but, also, the low level of enforcement resources deployed by the US Federal Department of Transport which at one stage had only 9 inspectors assigned to radioactive materials transportation safety nationwide. It also highlights the lack of any centralised accident data base to record incidents concerning the transportation of nuclear waste.

[4.3] Haggerty points to US evidence which shows that trucks carrying “low level” waste shipments have accidents at the standard accident rate - estimated at one accident in every 150,000 miles travelled. During the period from 1971 to 1985 there were 1,034 accidents or incidents involving “low level” waste within the US of which 90 containers actually released radioactive materials. Even allowing that the containers of radioactive materials have been very substantially upgraded – see IAEA regs - since that time, this statistic is sufficient in itself to raise legitimate concerns about the appropriate levels of regulation and vigilance with respect to the transportation of this material.

[4.5] Haggerty cites a case in 1996 where a tractor trailer overturned on an icy road in Northern Nebraska while carrying two nuclear warheads to a decommissioning facility in Texas. Haggerty says:

“Nebraska officials criticised the Department of Energy for failing to follow protocols that required advanced notice about such shipments.

They also raised concerns about the transportation route which required the truck to travel in an area hours away from the nearest equipment capable of salvaging the truck from the ditch. Later a former DOE Official disclosed that the radio monitoring equipment had been removed by order of the DOE. Apparently in September 1996 one of the drivers claimed his daughter died from a rare brain tumour because of his exposure to radiation at work. In response the DOE had ordered the monitors be removed. Two months later when the truck carrying the warheads crashed the DOE had no way of knowing whether there had been a radiation leak.”
[4.6] Haggerty cites other similarly disturbing examples of lack of attention to safety standards. He says:

“In December of 1997 a truck experienced a leak while carrying metal boxes of moisture laden LLRW from a DOE cleanup site in Fernald, Ohio to a DOE disposal facility in Nevada. The leaking water was discovered by the truck driver while he was performing his own routine safety check at a truck stop in Kingman Arizona. This type of radioactive spill is considered complicated because it involves a transportation accident with a failure of shipping containment on a public access highway. Although the driver reported the leak in Kingman the DOE decided to allow several additional trucks carrying the same cargo to continue to their destination without performing in-transit inspections. When they arrived at the Nevada disposal facility days later leaks were found in containers on three additional trucks. Officials at the Ohio site did not learn that leaking containers had been discovered at the disposal facility in Nevada until 2 months later because officials in Nevada never notified them.”

Haggerty also refers to similar sorts of incidents which have been recounted in European countries.

[4.7] Important recommendations were made from various sources, including citizen and local government groups, in response to these incidents. These include that appropriate inspection personnel should be designated to have actual responsibility for equipment inspection and detection of equipment failure, that many more hazardous inspectors be trained and deployed and that appropriate pre-shipment safety and regulatory awareness testing of drivers be undertaken under government authority and not left to transport companies to administer. More severe penalties, auditing and inspection procedures were also recommended.
These examples serve to suggest that the mere adoption of protocols without comprehensive legal compliance mechanisms – and appropriate sanctions - are insufficient to guarantee compliance. Equally important is the clear demarcation and definition of the respective roles and functions of regulatory authorities. Most importantly, NSW emergency services agencies must have a clear picture of their respective roles and responsibilities and how these relate to the federal regulatory agencies. Equally urgently, ordinary citizens should have a clear idea of the remedies available to them and the authority responsible for providing those remedies. Neither is clear at present and both require clarity and certainty.

5. Directions for Regulation in Australia

The concerns raised by the Advisory Council referred to above underscore the fact that much more is required than the ARPANSA Act and the promulgation of the Code – important as both these are as a first step. Significant areas remain to be addressed by the regulatory scheme. These areas may be identified as extending to accountability, transparency and legal redress. The development of a regulatory scheme which addresses squarely the transportation of nuclear waste should occur in a setting of open-ness and information sharing.

The importance of transparency in this process has been emphasised by the Advisory Council itself – it has placed special emphasis upon open deliberations and the publication of its own deliberations on the ARPANSA web site. There would appear to be no good reason why all of the discussion with respect to the transportation of waste materials, and the circumstances and conditions under which waste will be transported, cannot be and should not be made generally available. Preferably this material should be contained in publications expressed in plain English which summarise accurately the combined effects of the APARNSA Act, the IAEA Regulations and the Code and all related materials.

The Advisory Committee has highlighted the potential confusion which attends important legal issues surrounding – inter alia - the transport of waste materials. Nothing could be more demoralising for any victims of an accident involving the release of waste that to be confronted by jurisdictional and liability disputes. It is submitted that these issues are far too significant to be attended by doubts of the kind raised by the Committee. The issues should be identified and clarified so that all doubts can be eliminated. If it is necessary to promulgate a revised code, or enact further legislation, then this should be done.

It is submitted that a range of safeguards would need to be spelt out in a supplementary, legislation and/or a legally binding code of practice and/or in conditions placed upon licences which are issued to contractors or others who will undertake the actual transportation of the nuclear waste materials. Licence requirements will go some way towards providing reassurance for those communities through which the radioactive waste is proposed to be transported. The regulatory regime should provide reassurance to those communities that damage, if any is sustained in consequence of an accident involving the release of nuclear waste, will be made good and will be indemnified in the last resort by the Commonwealth Government.
[5.5] This last expressed concern is not idle since it is possible to envisage circumstance where a transport company could be forced into insolvency as a result of the legal liability imposed upon it following an accident which released nuclear materials. That is an eventuality which should be squarely avoided in advance and can be so avoided by the provision of a Commonwealth indemnity and by stringent licensing conditions which require the transporting entity to take out appropriate insurances.

[5.6] While the likelihood of an accident which involves the release of nuclear waste might be regarded as low, the cases cited in the Haggerty article mentioned above show that such accidents can and will occur and that appropriate precautions should be taken against their eventuality.

[5.7] The authorities should also be required to promulgate an extensive management plan ready to be implemented in conjunction with emergency service authorities and local government authorities in those areas through which the nuclear waste is proposed to be transported. Arrangements must be made to ensure that all relevant authorities are equipped with the requisite knowledge and information of the possible hazards entailed in the event of an accident which results in the release of nuclear materials. To this end emergency service personnel must be given unrestricted access to all relevant information.
Curriculum Vitae

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Jim Nolan is a barrister practicing in employment and industrial law. He was formerly an industrial officer and advocate for media unions and then Executive Member of the NSW Privacy Committee. For the last thirteen years he has been practicing as a barrister.

For a number of years in the eighties and early nineties he was lecturer in labour law (part time) at Sydney University Law School where he taught collective labour law to postgraduate diploma and masters degree students. He was a foundation member of the editorial committee of the Australian Journal of Labour Law.

He has appeared in all major industrial jurisdictions in Australia and appears regularly in the Australian Industrial Relations Commission and the New South Wales Industrial Relations Commission. He has appeared in major industrial law cases in the High Court of Australia. He has also appeared in a wide variety of industrial cases in the Federal Court of Australia.

He has spoken and written regularly on privacy issues in the workplace and on a variety of public policy issues.