Medical Association for Prevention of War, Australia, Inc.

Public Health Association AUSTRALIA

Thursday 10th March 2016

SUBMISSION TO THE NATIONAL RADIOACTIVE WASTE MANAGEMENT PROJECT

This is a further submission by MAPW and PHAA, following on from an initial submission in 2014.

INTRODUCTION

The Medical Association for Prevention of War (MAPW) is an organisation of Australian medical and other health practitioners, formed in 1981, which addresses the health consequences of warfare and associated social and industrial aspects of modern warfare. There is a clear link between the nuclear fuel chain and the emergence of nuclear weapon states. The potential for nuclear material to be used for terrorist activities makes its future management highly relevant to our cause.

The Public Health Association of Australia (PHAA) is recognised as the principal non-government organisation for public health in Australia and works to promote the health and well-being of all Australians. The Association seeks better population health outcomes based on prevention, the ecological and social determinants of health and equity principles. This includes, but goes beyond the treatment of individuals to encompass health promotion, prevention of disease and disability, recovery and rehabilitation, and disability support. This framework, together with attention to the social, economic and environmental determinants of health, provides particular relevance to, and expertly informs the Association's role.

Both the MAPW and the PHAA have a long and sustained history of advocacy in relation to issues relating to radioactivity and the nuclear fuel chain. In 2011, along with other peak health organisations, we released a Joint Health Sector Position Statement into Nuclear Medicine in Australia which addressed the issues relating to Australia's nuclear medicine industry and storage of its waste. For many years we, along with other health, scientific, environmental, Indigenous and community groups have been calling for a comprehensive independent inquiry into Australia's nuclear industry and waste storage options to take place before any new waste repository development is embarked upon.

EXISTING POLICIES AND RECOMMENDATIONS

Both MAPW and PHAA have policies on the management of radioactive waste. These policies are attached (Attachments 1 and 2). MAPW and PHAA also made a joint submission to the National Radioactive Waste Management Project in 2014 (Attachment 3).

Currently, the Federal government is continuing to pursue a site for a national radioactive waste repository and storage facility. We welcome the opportunity to make further comment.

PHAA and MAPW note the inherent risks associated with the nuclear industry, and that there is no safe dose of radiation. PHAA opposes any expansion of the nuclear industry in Australia. MAPW also believes in minimising the waste burdens on future generations. To this end MAPW advises that any new nuclear industry must have a full life-cycle waste management plan, with exploration of alternatives and a proper disposal plan. MAPW and PHAA both believe that the production of waste needs to be ceased as an urgent priority.

PHAA and MAPW recommend Australian government support for non-nuclear reactor based generation of nuclear medicines, as is proceeding in Canada.

PHAA and MAPW both believe there must be full and informed community consent before any site proceeds.

In our joint submission of 2014 (Attachment 3), we discussed how there is no level of radioactive waste that is risk free, the need for minimization of the production of waste – 'turning off the tap', the risks of transportation, the risks of indefinite storage, the risks inherent in the very long time periods needed for sequestration and monitoring of waste, and the impacts on Indigenous peoples. We discussed nuclear medicine, and how the overwhelming majority of nuclear medicines are used for diagnostic rather than therapeutic purposes, comprise a small part of total output of Lucas Heights, and how the linkage between nuclear medicines and the need for a centralised radioactive waste storage facility is misleading and untrue. We discussed again the fundamental need for community acceptance. We called for an independent public inquiry.

These concerns seem not to have been addressed.

FURTHER COMMENTS

Since 2014 the Federal government has begun another process for finding a national radioactive waste disposal and storage facility. MAPW and PHAA have grave concerns that this process is flawed, and continues to seek to coerce communities into accepting a waste disposal facility. Furthermore, there have been substantial advances overseas in alternatives to nuclear reactor based production of medical radioisotopes, that is, by cyclotrons, most notably in Canada. We believe that to continue to pursue a national radioactive waste facility before fully considering these advances is both irresponsible and likely to lead to a non-optimal outcome for Australia.

PROCESS

The Federal government has attempted to avoid community opposition by allowing freehold owners of land to nominate their properties for consideration. However this did not consider the views and interests of residents and communities surrounding such sites. There has been widespread and explicit condemnation of this process by those living nearby these proposed sites. Communities adjacent to all six sites have clearly expressed their opposition, and requested withdrawal of these sites from further consideration. Further, members from these communities have also discussed their concerns for the well being of their

communities, citing anxiety, stress, other mental health issues, and community conflict that have already arisen.

MISINFORMATION

In their attempt to allay communities' concerns, the government has produced numerous 'information' pamphlets. MAPW and PHAA dispute much of the information given, particularly with respect to nuclear medicines. Examples include the suggestion that X-rays, CT scans and heart scans produce nuclear waste. This is untrue. X Rays for a broken bone rarely require nuclear medicine, the vast majority of heart scans are done by ultrasound, and most cancers are treated by surgery, chemotherapy or radiotherapy, none of which use radioisotopes. Even the assertion that half the population needs nuclear medicine is not credible.

Furthermore the Federal government appears to ignore alternative forms of nuclear medicine production.

INFORMED CONSENT

The government has not given communities adequate nor accurate information upon which they can make an informed decision.

JUSTIFICATION

A community need not have to justify their opposition to this proposal. It is sufficient for a community to decline engagement.

LONG TERM SAFETY

For radiation protection purposes it is universally acknowledged by all radiation regulatory bodies that there is no dose of radiation below which there is no risk of harm. The low level radioactive waste will need to be monitored for 300 years. The long-lived intermediate level waste needs to be sequestered from the environment for tens of thousands of years. These very long timelines need meticulous attention to ensure that risks to humanity and the rest of the biosphere from contamination are minimised, with explicit strategies to eventually stopping the production of radioactive waste.

NUCLEAR MEDICINES

There are two points of discussion here, (i) that to use nuclear medicine to justify a national radioactive waste facility is fallacious and emotive, and (ii) to continue to disregard the advances made by Canada in producing radioisotopes without nuclear reactors is irresponsible. In view of these two factors, it is very disheartening that the current business plan to expand production of radioisotopes in Lucas Heights is being pursued without any discussion at a national public level.

Nuclear medicine does not justify need for waste facility

As has been documented in numerous forums, a national radioactive waste facility is not required for the provision of nuclear medicines (see MAPW information sheet at https://www.mapw.org.au/files/downloads/Radioactive%20waste%20in%20Australia%20colour%20FINAL.pdf). According to Medicare figures nuclear medicine isotopes represent less than 3% of medical imaging. They are most commonly used for bone scans and some specialised heart scans. Existing medical waste makes up a tiny proportion of the total waste requiring disposal.

New medical isotope technology ignored

Canada has successfully completed a pilot study and is undergoing clinical trials in cyclotron-produced radioisotopes. Current regulatory testing and expansion will likely make Canada self-sufficient through cyclotron generation in 3-5 years. This is an incredible opportunity for Australia to collaborate with Canada to enter an innovative technological enterprise.
Canada produced a "Report of the Expert Review Panel on Medical Isotope Production 2009". In responding to this report its government stated:

> 'Canada's NRU reactor has satisfied a significant portion of world demand for Mo-99; by producing at this scale, Canadians have been left to shoulder a disproportionate amount of the nuclear waste burden associated with reactor-based isotope production. This includes the significant costs associated with long-term management of the waste. The Government favours a new paradigm in which Canadians benefit from Canadian-based isotope production, supplemented if necessary from the world market, and supply is sustainable because of reduced waste and improved economics.'

They gave a number of other reasons why Canada wished to phase out reactor use. These included reliability of supply (reactor breakdowns created worldwide isotope supply shortages); investment in reactor production of medical isotopes would crowd out investment in innovative alternative production technologies; and reactor production was the most expensive option, at no stage commercially viable without major taxpayer subsidies.

Similarly, a very comprehensive 2010 OECD Nuclear Energy Agency report found reactor based isotope production requires significant taxpayer subsidies, as the cost of sale does not cover the cost of production. The report concludes:

> "In many cases the full impact of Mo-99/Tc-99m provision was not transparent to or appreciated by governments… The full costs of waste management, reactor operations, fuel consumption, etc. were not included in the price structure, thus providing a significant deficiency in the pricing mechanism. This is a subsidisation by one country's taxpayers of another country's health care system. Many governments have indicated that they are no longer willing to provide such subsidisation."

It is very disappointing that while non reactor generation of nuclear medicine is emerging as a feasible alternative, ANSTO is planning to dramatically increase its production of medical radioisotopes at Lucas Heights to supply 20-30% of the world market. This threatens to lock Australia into nuclear reactor based production, nuclear fuel usage and subsequent production of intermediate level waste, while eschewing modern technological development. This decision by ANSTO has been made without a public inquiry process.

This plan to increase reactor production of radioisotopes is particularly problematic given there is no permanent disposal site for intermediate waste in Australia, resulting in the interim storage of significantly more highly radioactive waste for an indeterminate period of time.
It is also of considerable concern that the Federal government has recently referenced the views of Mr Currie in its latest information material provided to communities affected by the 6 nominated waste repository sites. Mr Currie inaccurately links nuclear medicine to the need for a nuclear waste repository. By referencing this view the Federal government is

again not fairly informing communities of the alternative options Australia has for nuclear medicine production and the implications that this would have on Australia's future radioactive waste generation.
Australia urgently needs a mature and rational discussion about the place of the nuclear industry in medicine and science, and what alternatives there are to give us the tools we need for the functions we want. We have a choice: whether we follow ANSTO's business model to escalate reactor manufacture of radioisotopes (and the long lived radioactive waste that goes with it), or collaborate with Canada to develop cyclotron manufacture of radioisotopes that do not produce long lived nuclear waste.

RECOMMENDATIONS
MAPW and PHAA re-endorse our recommendations from our previous submission (Attachment 1) which include: reduction at source of production of waste, a call for a national independent inquiry into waste management, minimisation of waste transport, and that there should be no imposition of a waste facility on an unwilling community, (Attachment 3).

We further recommend that:

1. the Federal government respect the wishes of the communities surrounding the 6 proposed sites, and accept their call to be removed from further consideration, if they so decide.

2. an independent, transparent inquiry be performed to consider the alternative options for Australian production of nuclear medicines including drawing on international experience in particular from Canada; and

3. before embarking on another round of site selection, the government:
a. Develops a strategy which addresses both the existing waste which requires management and future waste which must be minimised, and the problem of indeterminate storage of long lived intermediate waste incorporating world's best practice to the disposal and management of long lived intermediate waste,
b. Review its process for site selection and provision of accurate information about radioactive waste to communities, and
c. Hold a formal inquiry to inform development of this strategy and process of site selection.

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Appendix 1

For ease of access the recommendations from the combined PHAA and MAPW comment (2014) are repeated here:

RECOMMENDATIONS FROM THE COMBINED PHAA AND MAPW COMMENTS TO THE NATIONAL RADIOACTIVE WASTE MANAGEMENT PROJECT

1. Reduction at source (waste minimisation) is the fundamental principle in reducing the risks of environmental contamination from nuclear waste:

a. phase out of the nuclear reactor program at Lucas Heights. Australia's world-class nuclear medicine capability can be sustained by a combination of importation and local isotope generation - as occurs during shutdown periods at the current OPAL reactor without any adverse medical consequences.

b. The use of reactor-produced isotopes in medicine should be minimised in favour of those techniques and imaging modalities that do not rely on them.

c. promotion of safer imaging technologies including MRI, advanced CT, ultrasound and positron emission tomography

d. Increased research and development of non-reactor technologies for the production of medical isotopes

2. An Australian **national radioactive waste management policy** should be developed, informed by experts and members of the public through a **comprehensive independent inquiry**. An inquiry would assess:

a. all options for radioactive waste management

b. current activities in international best practice

c. radioisotope production

i. assessing non-reactor based isotope production of medical radioisotopes

ii. exploring Australia's capacity to utilize current facilities to research, develop and produce our isotopes in particle accelerators; and

iii. assessing necessary infrastructure requirements to ensure economic viability of a non-reactor based isotope industry.

d. nuclear medicine waste disposal

i. establishing the number and type of nuclear medicine procedures being performed annually and

ii. the number of Australians on whom these procedures were performed

iii. quantifying the true volume and nature of medical waste presently in storage and the expected volume in the future

iv. investigating capacity of hospitals and research institutions to continue to store this waste indefinitely, especially if Australia shifts away from reactor derived radioisotopes; and

v. establishing the importance of the nuclear medicine waste stream to the proposal to establish a centralized Commonwealth waste storage facility.

3. As part of this process it will be necessary to develop and publish a full inventory of radioactive waste in Australia - what it is, where it is, and who has jurisdiction.

4. Pending the development of a policy, all radioactive waste must remain accessible for monitoring. It should be stored in a dry, monitored and retrievable fashion at or near the site of production. In the case of the intermediate level reprocessed fuel rods set to return to Australia soon, it is most appropriate that they be stored for the time being at their place of production, Lucas Heights. Lucas Heights is the best equipped facility in Australia to store such waste at present.

5. Should it be decided to embark on deep geological disposal in Australia then the issues of access and retrievability need to be considered in the planning and implementation processes, in the event of advances in disposal technologies.

6. Transportation of radioactive material should be minimised. There must also be consultation with all those communities along the proposed route, including emergency, police, health and environmental protection services.

7. Radioactive waste transport or storage should not be imposed on unwilling communities.

8. Radioactive waste storage facilities and practices should be subject to regular independent audits and public review to increase transparency and ensure compliance with Australia's policy.

Attachment 1
MAPW Radioactive waste policy 2015
https://www.mapw.org.au/files/downloads/MAPW%20Radioactive%20Waste%20Policy%202015%20.pdf

Attachment 2
PHAA Nuclear Industry Policy
https://www.phaa.net.au/documents/item/237

Attachment 3
Comments to the national Radioactive Waste Management Project 2014
https://www.mapw.org.au/news/comments-national-radioactive-waste-management-project-submitted-medical-association-prevention