



Speech by

Hon. WENDY EDMOND

MEMBER FOR MOUNT COOT-THA

Hansard 10 March 1999

RADIATION SAFETY BILL

Hon. W. M. EDMOND (Mount Coot-tha— ALP) (Minister for Health) (11.32 a.m.): I move—

"That the Bill be now read a second time."

As a result of a long and arduous legislative review process, it is clear that Queensland's existing radiation safety and protection legislation will not take us into the new millennium.

The Radioactive Substances Act was based on model legislation developed by the National Health and Medical Research Council of Australia in the 1950s. This legislation was enacted to regulate those sources of radiation which were primarily used for medical purposes at that time, for example, X-ray machines used to assist in the diagnosis of medical conditions, and radioactive substances such as radium or cobalt used in the treatment of cancer. However, over the last 40 years the use of radiation, both ionising and non-ionising radiation, has become commonplace in a diverse range of industries. For example—

radioactive substances are used by the rural sector in determining the moisture content of soils to minimise water usage, while maximising crop production;

radioactive substances are used for determining the compaction of asphalt on roads during the construction and repair of roads;

radiation sources are used by the mining industry to assist with the location of mineral deposits and, once mining commences, with process control, mineral analysis and quality assurance functions;

radiation sources such as level gauges and fat analysers are used in the production of packaged foodstuffs and drinks to ensure that the contents of goods are consistent; and

radiation sources are used by industrial radiographers to examine welds and detect cracks to prevent the failure of engineered structures such as pipelines.

Radiation also continues to be one of the essential tools of modern health care. It is now used—

to sterilise medical supplies to combat the spread of infectious diseases;

as a diagnostic tool to assess not only whether a bone has been broken but the location of tumours or the failure of organs;

to treat cancer through the administration of radiopharmaceuticals or through radiotherapy; and

to perform a variety of surgical procedures involving the use of lasers which emit non-ionising radiation.

Though radiation offers many benefits, it is well recognised that radiation can threaten our health and the environment. Both ionising radiation and non-ionising radiation can result in biological changes which are potentially hazardous. The most usual adverse health effect from exposure to ionising radiation is cancer. Unfortunately, there is often a lengthy period between exposure to radiation and the detection of a cancer—of the order of tens of years.

Exposure to ionising radiation may also cause birth defects and other adverse genetic outcomes. Exposure to non-ionising radiation may result in a variety of adverse health effects. For

instance, exposure to radiation produced by class IV lasers can result in disfigurement and other forms of skin damage, blindness, damage to organs and, in some cases, even death.

It is for these reasons that strict controls must continue to be placed on those activities which may result in the exposure of persons to radiation. In view of the potential health risks associated with the use of radiation since the late 1950s, the peak national and international radiation advisory bodies have developed and continually updated recommendations concerning the hazards associated with radiation. In particular, specific advice has come from the International Commission on Radiological Protection and the International Atomic Energy Agency. However, the more recent recommendations of these bodies, which have been put forward to further limit the risks associated with radiation exposure, cannot be adequately addressed under the current legislation.

In order to redress the known deficiencies of the Radioactive Substances Act 1958, a review of the legislation was commenced with a view to modernising Queensland's radiation safety and protection legislation. The review included extensive consultations with the Radiological Advisory Council in its capacity as the ministerial advisory body established under the Radioactive Substances Act, the relevant professional bodies and other key stakeholders. The proposed policy framework for the Radiation Safety Bill was developed in light of recommendations emanating from—

- the 1990 Green Paper on the Regulation and Control of Sources of Ionising Radiation and the 1994 Green Paper Reviewing the Radioactive Substances Act; and

- the development of a new system of radiation protection by the International Commission on Radiological Protection in 1990, which was subsequently embraced by the National Health and Medical Research Council in 1995.

The Radiation Safety Bill, which is before this House, represents the culmination of this review process. One of the significant differences between the existing Radioactive Substances Act and the Radiation Safety Bill concerns the scope of the new legislation, which is to be expanded to regulate not only sources of ionising radiation but also sources of non-ionising radiation.

However, not all types of radiation or all activities involving the use of radiation will be captured by the legislation. For example, only those radiation apparatus which are capable of emitting an amount of non-ionising radiation which is prescribed as being particularly hazardous will be captured by the Radiation Safety Bill. Other sources of non-ionising radiation, such as industrial lasers used in the workplace, will continue to be controlled through the Workplace Health and Safety Act 1995.

Where there are negligible health risks associated with a radiation source, such sources will be exempt from the requirements of all or some of the requirements of the legislation. For example, watches containing radioactive self-luminous elements and domestic smoke detectors will be exempt. As with the existing legislative regime, the Radiation Safety Bill continues to provide for the licensing of those persons who either—

- want to possess a radiation source for a specified purpose; or
- want to use a radiation source for a specified purpose; or
- want to transport radioactive substances by road, rail, air or water.

As an adjunct to the licensing requirements of the legislation, and in order to ensure that the persons are not endangered by the way a possession licensee acquires or divests themselves of a radiation source, the Bill also regulates the acquisition, disposal and relocation of radiation sources.

The Bill provides for the implementation of a comprehensive range of measures designed to promote radiation safety and protection in circumstances where—

- a person may be exposed to radiation as a consequence of their occupation; or
- a person may be intentionally exposed to radiation as part of a diagnostic or therapeutic procedure; or
- members of the public may be unintentionally exposed to radiation as a result of the widespread use of radiation within our community.

For example, prior to a possession licensee allowing a radiation practice to be carried out with a source in their possession, the licensee must ensure that the radiation source, and the premises at which the sources are to be used, comply with the relevant radiation safety standards. Compliance with these standards will ensure, for instance, the equipment used by those persons carrying out a radiation practice meets specified design requirements and is properly maintained.

The licensee must also ensure that the radiation practice can be carried out in accordance with the licensee's approved radiation safety and protection plan which, amongst other things, will set out requirements concerning the provision and use of protective clothing and equipment; the provision and use of radiation monitoring equipment; the use of work practices and procedures designed to minimise radiation exposure; the type of training which must be provided to those persons carrying out the

practice, as well as the accident and emergency procedures which must be followed should an untoward event occur.

A possession licensee must also ensure that—

a copy of the approved plan is always available for the inspection of those persons carrying out the radiation practice; and

only those persons who are adequately trained and appropriately licensed will be carrying out the radiation practice; and

a radiation safety officer has been appointed to assist with the implementation of the licensee's approved plan.

The Bill also places a number of obligations on persons who carry out radiation practices. For example, radiation therapists, nuclear medicine technologists, medical imaging technologists and industrial radiographers will all be required to—

participate in the training program specified in the approved radiation safety and protection plan for a radiation practice; and

always carry out the radiation practice in accordance with the approved radiation safety and protection plan for that practice; and

take all reasonable steps to ensure that the health and safety of persons, insofar as exposure to radiation is concerned, are not adversely affected by the way the person carries out a radiation practice.

In recognition of the technical nature of the matters dealt with under the Radiation Safety Bill, the legislation makes provision for the establishment of a ministerial advisory body to be known as the Radiation Advisory Council. The primary function of this body will be to provide the Minister with independent advice about the operation and application of the Bill. As such, the council will be comprised of persons with expertise in the use of radiation and radiation safety and protection; at least one community representative; and the Chief Health Officer.

Lastly, I would like to highlight that the Radiation Safety Bill incorporates improved review and accountability mechanisms. For example, the legislation—

clearly sets out the administrative and decision-making processes for the granting, renewal, suspension and cancellation of licences and other approvals; and

details the functions and powers of inspectors appointed under the legislation; and

ensures that those provisions of the legislation that deal with compliance monitoring, investigation, enforcement, offences and proceedings for offences conform with modern legislative drafting practices and paramount legislation such as the Legislative Standards Act 1992, the Penalties and Sentences Act 1992 and the Justices Act 1886; and

incorporates both formal and informal review and appeal mechanisms, which enable an aggrieved person to have a matter reviewed in a timely and cost-effective manner.

I commend the Bill to the House.
