LICENSING REQUIREMENTS FOR USERS OF IONIZING RADIATION SOURCES IN SOUTH AUSTRALIA: TRAINING COURSES AND ASSESSMENT PROCEDURES

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ABSTRACT

South Australia recently replaced its 1962 ionizing radiation legislation with a new Radiation Protection and Control Act. The new legislation does not include any transition provisions for licences. That is, the holder of a licence under the previous legislation does not receive any preferential treatment when his application for a licence is considered under the new legislation . In fact, the applicant cannot be granted a licence under the current legislation unless he has:

1. a "prescribed qualification" such as a diploma in radiography for a radiographer, or

2. "appropriate knowledge of the principles and practices of radiation protection to carry on such activities".

For any category of persons who do not have a prescribed qualification the only route by which a licence is granted is by formal assessment. It, therefore, has been necessary to provide training courses and formal assessments for various categories of professionals. Some of the features of the new legislation and the difficulties encountered in implementing it are described.

INTRODUCTION

South Australia has introduced new controls over the use of ionizing radiation: the Radiation Protection and Control Act, 1982, and its Ionizing Radiation Regulations, 1985, which became effective on 1 April 1986. These replace the 1962 legislation which did not require any test of competence to be completed before an applicant was licenced.

The new legislation controls all aspects of the use of X-ray equipment and radioactive substances, including radioactive ores. The Act requires X-ray apparatus, sealed sources and premises upon which unsealed sources are kept or handled to be registered and the users of ionizing radiation to hold an appropriate licence issued by the South Australian Health Commission.

LICENSING REQUIREMENTS

The legislation has two unique features:

1. it incorporates the general objective of the ALARA principle, and

2. does not include any transition provisions for licences. That is, the holder of a licence under the previous legislation does not receive any preferential treatment when his application for a licence under the new legislation is considered. In fact, the Act prevents the Commission from issuing a licence to anyone unless the individual concerned has demonstrated competence in radiation protection principles and practices relevant to the activities he intends to carry out.

There are only two routes by which competence in radiation protection can be demonstrated:

1. by formal assessment or

2. by having a prescribed qualification. In this case the Commission accepts that members of some occupational and professional groups have sufficient training in radiation protection for a licence to use ionizing radiation to be granted without further training or assessment.

The legislation also makes provision for certain classes of people to be exempted from holding a licence. These include persons working in low activity laboratories under the supervision of a licensed person in charge of the laboratory, or with closed cabinet X-ray units, or enclosed X-ray analysis apparatus.

PRESCRIBED QUALIFICATIONS

Several occupational or professional groups have prescribed qualifications. These are: diagnostic and therapy radiographers, radiologists, radiotherapists, veterinarians, dentists, dental therapists and dental assistants. For chiropractors the only recognised qualifications are those from the Phillip Institute of Technology, Victoria and those from the Sydney College of Chiropractic, New South Wales. Practically all of the prescribed qualifications are medical.

ASSESSMENT

For users of radiation in industry and science and in some medical areas, there were no qualifications which adequately demonstrated competence in radiation protection. Hence there was a need for assessment of these occupational and professional groups.

Between mid 1983 and the end of 1985, written examinations were set covering a variety of areas of speciality. The examination papers incorporate a core of radiation safety knowledge, particular aspects relating to each area of speciality, and knowledge of regulatory requirements. As at the end of 1987, the Commission provides formal assessment for 15 categories of non-medical speciality such as borehole logging, industrial radiography, users of unsealed radioactive substances and installers of medical apparatus.

In the medical area the Commission provides assessment for medical specialists, such as cardiologists, who are seeking a licence to operate fluoroscopic apparatus. In this case the medical specialists need to complete successfully both a written and practical examination.

TRAINING COURSES

It was realised from the outset that to equip persons not holding prescribed qualifications to pass the appropriate assessment, training courses would need to be provided. A number of courses were organised and targeted to particular groups of people. In planning the courses, several options were considered. Techsearch Inc., the commercial arm of the South Australian Institute of Technology, was approached to organise and run courses for users of sealed sources and unsealed radioactive substances. A 3-day course for sealed source users is run regularly. It assumes no previous background in physics or radiation protection.

The University of Adelaide Postgraduate Committee in Dentistry has run courses for dentists who graduated prior to 1984 and who wish to operate OPG X-ray apparatus. This training is now incorporated in the undergraduate course.

Under the previous legislation a large number of general practitioners and registered general nurses were taking radiographs. To enable these health professionals to continue to provide a radiographic service, particularly in country areas and to be licensed under the current legislation, the Commission arranged a number of courses of instruction in basic radiography both in regional centres and in Adelaide. To the end of 1987, 19 training courses have been held: 8 in regional centres and 11 in Adelaide. So far 249 general practitioners and 118 nurses have been licensed. Of these, 197 general practitioners and 112 nurses are practising outside the Adelaide Metropolitan area.

DIFFICULTIES ENCOUNTERED IN IMPLEMENTING THE LICENSING REQUIREMENTS

During implementation of the new licensing requirements a number of difficulties were encountered. The major ones were:

1. the preparation and management of large numbers of different types of examinations to cater for the diverse use of ionizing radiation in industry, science and medicine with limited resources and within a short period of time.

2. preparation and organisation of large numbers of courses for general practitioners and registered general nurses in a short period of time.

3. antagonism against the legislation. This has been the most difficult problem to deal with and has arisen mainly through the absence of transitional provisions in the legislation. Some previously licenced individuals had been using ionizing radiation for up to 40 years!

CONCLUSION

In South Australia as at the end of November, 1987 there are over 2220 persons licensed to operate X-ray equipment and over 620 licensed to use or handle radioactive substances.

A great effort has been put into implementing the new legislation both in licensing people and in registering X-ray equipment, sealed sources and premises upon which unsealed radioactive substances are used. The indication so far is that the standard of radiation protection in South Australia has improved with the introducton of the new legislation. However, it is neither possible to quantify the improvement nor to determine its cost!