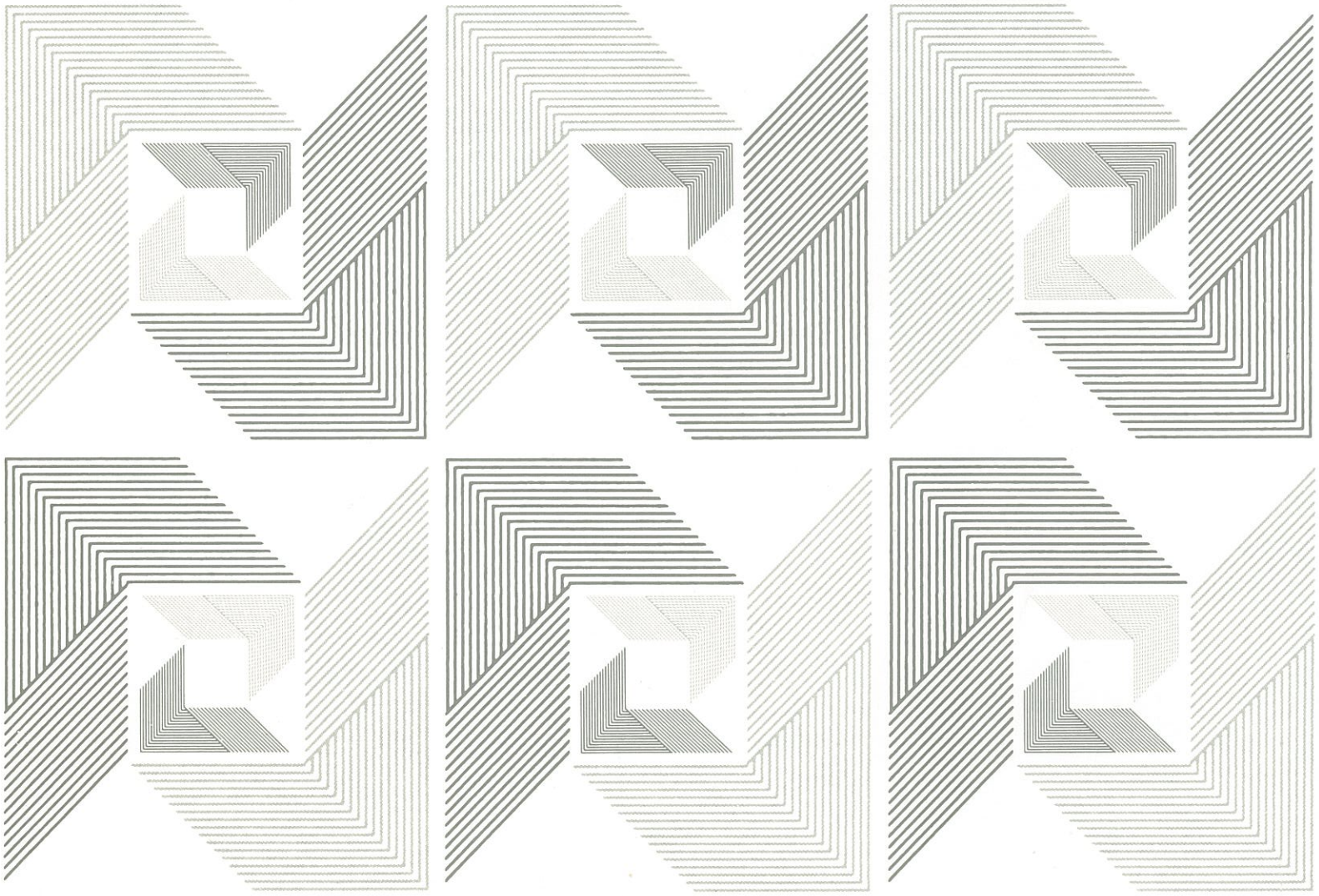
Report No. 90-9
January 1990

SUNSET EVALUATION REPORT: REGULATION OF RADIOLOGIC TECHNOLOGISTS

A REPORT TO THE GOVERNOR AND THE LEGISLATURE OF THE STATE OF HAWAII



SUBMITTED BY THE LEGISLATIVE AUDITOR OF THE STATE OF HAWAII

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3. *Sunset evaluations* are conducted of professional and occupational licensing programs to determine whether the programs should be terminated, continued, or modified. These evaluations are conducted in accordance with a schedule and criteria established by statute.

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A Report to the Governor and the Legislature of the State of Hawaii

Submitted by

Legislative Auditor of the State of Hawaii
Honolulu, Hawaii

Report No. 90-9
January 1990

FOREWORD

Under Hawaii's Sunset Law, affected licensing programs are scheduled for termination over a six-year period and are repealed unless specifically reestablished by the Legislature. In 1979, the Office of the Legislative Auditor was assigned the responsibility to evaluate each program prior to its scheduled repeal.

This report evaluates the regulation of radiologic technologists under Chapter 466J, *Hawaii Revised Statutes.* It presents our findings on the need to regulate radiologic technologists and includes our recommendations on whether the program should be continued, modified, or repealed.

We acknowledge the cooperation and assistance of the Board of Radiologic Technology, the Department of Health, and other state officials contacted during the course of our examination. We are also grateful for the assistance of federal officials, professional societies, accreditation and certification organizations, regulatory agencies of other states, medical organizations, and others involved in the use of radiation and in the regulation of this profession. We further appreciate the assistance of the Legislative Reference Bureau which drafted the recommended legislation.

Newton Sue
Acting Legislative Auditor
State of Hawaii

January 1990

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Chapter 1

INTRODUCTION

The Hawaii Regulatory Licensing Reform Act of 1977, or Sunset Law, repeals statutes concerning 38 occupational licensing programs over a six-year period. Each year, six to eight licensing statutes are scheduled to be repealed unless specifically reenacted by the Legislature.

In 1979, the Legislature amended the law (Chapter 26H, *Hawaii Revised Statutes*) to make the Legislative Auditor responsible for evaluating each licensing program prior to its repeal and to recommend to the Legislature whether the statute should be reenacted, modified, or permitted to expire as scheduled. In 1980, the Legislature further amended the law to require the Legislative Auditor to evaluate the effectiveness and efficiency of the licensing program, even if he determines that the program should not be reenacted.

Objective of the Evaluation

The Legislature in 1988 added certain licensing programs administered by the Department of Health under Sections 321-13 to 321-15, HRS, to the Sunset review schedule. The objective of this evaluation is to determine whether, in light of the policies set forth in the Sunset Law, the public interest is best served by reenactment, modification, or repeal.

Scope of the Evaluation

This report examines the history of the statute on licensing of radiologic technologists and the public health, safety, or welfare that the statute was designed to protect. It then assesses the effectiveness of the statute in preventing public injury and the continuing need for regulation.

Organization of the Report

This report consists of three chapters: Chapter 1, this introduction and the framework for evaluating the licensing program; Chapter 2, background information on the regulated occupation and the enabling legislation; and Chapter 3, our evaluation and recommendations.

Framework for Evaluation

Hawaii's Sunset Law reflects rising public antipathy toward what is seen as unwarranted government interference in citizens' lives. The Sunset Law sets up a timetable terminating various occupational licensing programs. Unless reestablished, the programs disappear or "sunset" on a prescribed date.

In the Sunset Law, the Legislature established policies on the regulation of professions and vocations. The law requires each occupational licensing program to be assessed against these policies in determining whether the program should be reestablished or permitted to expire as scheduled. These policies are:

1. The regulation and licensing of professions and vocations by the State shall be undertaken only where reasonably necessary to protect the health, safety, or welfare of consumers of the services; the purpose of regulation shall be the protection of the public welfare and not that of the regulated profession or vocation.

2. Where regulation of professions and vocations is reasonably necessary to protect consumers, government regulation in the form of full licensure or other restrictions on the professions or vocations should be retained or adopted.

3. Professional and vocational regulation shall be imposed where necessary to protect consumers who, because of a variety of circumstances, may be at a disadvantage in choosing or relying on the provider of the services.

4. Evidence of abuses by providers of the services shall be accorded great weight in determining whether government regulation is desirable.

5. Professional and vocational regulation which artificially increases the costs of goods and services to the consumer should be avoided.

6. Professional and vocational regulation should be eliminated where its benefits to consumers are outweighed by its costs to taxpayers.

7. Regulation shall not unreasonably restrict entry into professions and vocations by all qualified persons.

We translated these policy statements into the following framework for evaluating the continuing need for the various occupational licensing statutes.

Licensing of an occupation or profession is warranted if:

1. There exists an identifiable potential danger to public health, safety, or welfare from the operation or conduct of the occupation or profession.

2. The public that is likely to be harmed is the consuming public.

3. The potential harm is one against which the public cannot reasonably be expected to protect itself.

4. There is a reasonable relationship between licensing and protection of the public from potential harm.

5. Licensing is superior to other alternative ways of restricting the profession or vocation to protect the public from the potential harm.

6. The benefits of licensing outweigh its costs.

The potential harm. For each regulatory program under review, the initial task is to identify the purpose of regulation and the dangers from which the public is to be protected.

Not all potential dangers warrant the exercise of the State's licensing powers. The exercise of such powers is justified only when the potential harm is to public health, safety, or welfare. "Health" and "safety" are fairly well understood. "Welfare" means well-being in any respect and includes physical, social, and economic well-being.

This policy that the potential danger be to the public health, safety, or welfare is a restatement of general case law. As a general rule, a state may exercise its police power and impose occupational licensing requirements only if such requirements tend to promote the public health, safety, or welfare. Courts have held that licensing requirements for paperhangers, housepainters, operators of public dancing schools, florists, and private land surveyors could not be justified.[1] In Hawaii, the State Supreme Court ruled in 1935 that legislation requiring photographers to be licensed bore no reasonable relationship to public health, safety, or welfare and constituted an unconstitutional encroachment on the right of individuals to pursue an innocent profession.[2] The court held

that mere interest in the practice of photography or in ensuring quality in professional photography did not justify the use of the State's licensing powers.

The public. The Sunset Law further states that for the exercise of the State's licensing powers to be justified, the potential harm must be to the health, safety, or welfare of that segment of the public consisting mainly of consumers of the services provided by the regulated occupation. The law makes it clear that the focus of protection should be the consuming public and not the regulated occupation or profession itself.

Consumers are all those who may be affected by the services provided by the regulated occupation. Consumers do not have to purchase the services directly. The provider of services may have a direct contractual relationship with a third party and not with the consumer, but the criterion is met if the provider's services ultimately flow to and adversely affect the consumer. For example, the services of an automobile mechanic working for a garage or for a U-drive establishment flow directly to the employer, but the mechanic's workmanship ultimately affects the consumer who brings a car in for repairs or who rents a car from the employer.

Consumer disadvantage. The exercise of the State's licensing powers is not warranted if the potential harm is one against which the consumers can reasonably be expected to protect themselves. Consumers are expected to be able to protect themselves unless they are at a disadvantage in selecting or dealing with the providers of services.

Consumer disadvantage can arise from a variety of circumstances. It may result from a characteristic of the consumer or from the nature of the occupation or profession being regulated. Age is an example of a consumer characteristic which may cause the consumer to be at a disadvantage. The highly technical and complex nature of an occupation is an illustration of occupational characteristic that may place the consumer at a disadvantage. Medicine and law fit into the latter illustration. Medicine and law were the first occupations to be licensed on the theory that the general public lacked sufficient knowledge about medicine and law to be able to make judgments about the relative competencies and about the quality of services provided to them by the doctors and lawyers of their choice.

However, unless otherwise indicated, consumers are generally assumed to be knowledgeable and able to make rational choices and to assess the quality of services being provided them.

Relationship between licensing and protection. Occupational licensing cannot be justified unless it reasonably protects the consumers from the identified potential harm. If the potential harm to the consumer is physical injury arising from possible lack of competence on the part of the provider of service, the licensing requirements must ensure the competence of the provider. If, on the other hand, the potential harm is the likelihood of fraud, the licensing requirements must be such as to minimize the opportunities for fraud.

Alternatives. Licensing may not be the most appropriate method for protecting consumers. Instead, prohibiting certain business practices, governmental inspection, or the inclusion of the occupation within another existing business regulatory statute may be preferable, appropriate, or more effective in protecting the consumers. Increasing the powers, duties, or role of the consumer protector is another possibility. For some programs, a nonregulatory approach may be appropriate, such as consumer education.

Benefit-costs. Even when all other criteria set forth in this framework are met, the exercise of the State's licensing powers may not be justified if the costs of doing so outweigh the benefits to be gained. The term "costs" in this regard means more than direct money outlays or

expenditure for a licensing program. "Costs" include opportunity costs or all real resources used up by the licensing program; they include indirect, spillover, and secondary costs. Thus, the Sunset Law asserts that regulation which artificially increases the costs of goods and services to the consumer should be avoided; and regulation should not unreasonably restrict entry into professions and vocations by all qualified persons.

Chapter 2

BACKGROUND

Chapter 466J, *Hawaii Revised Statutes,* regulates the practice of radiologic technology in Hawaii. This chapter reviews the occupational characteristics of the field, summarizes the State's licensing program, and describes the current role and responsibilities of the Board of Radiologic Technologists.

Occupational Characteristics of Radiologic Technologists

Radiologic technologists are allied health professionals who assist physicians and others in providing radiology services. Radiology is defined as the application of x-rays and other forms of radiation for diagnostic and therapeutic purposes.

Radiology began with the discovery of x-rays in 1895 by Wilhelm Conrad Roentgen, a German physicist. He developed a process of using x-rays to produce images of the inner human body on photographic paper and a way of viewing the inner body on a rudimentary fluoroscope, or screen, as it was being x-rayed.

There was immediate interest in x-rays and the potential for their use in medical diagnoses. Within months, physicians were using them to examine broken bones. In 1896, Thomas Edison produced an improved fluoroscope, and by 1913, William Coolidge had developed a more efficient x-ray tube which was the basis for modern x-ray machines.

Initially, x-rays were thought to be safe and widely curative. They were used to treat various diseases and conditions, ranging from epilepsy and blindness to acne and warts. When it became apparent that x-rays also had damaging effects, their therapeutic use was limited largely to cancer. Radiation therapy progressed through the use of radium and cobalt 60 (an artificially produced radioactive substance). The subsequent invention in the 1950s of linear accelerators, which produce megavoltages of x-rays and electrons, has made radiation treatment today much more effective.

The field of radiology initially involved the use of x-rays for both diagnostic imaging and therapeutic applications. Radiologic technologists who assist with diagnostic work are called x-ray technicians or radiographers. Job titles for diagnostic x-ray technologists are inconsistent. Operators of diagnostic radiologic equipment are called radiologic technologists in one hospital, x-ray technicians in another, and radiographers in yet a third. The term radiologic technologist is commonly used generically to refer to all the various types of practitioners in the field. Technologists who do therapeutic work are called radiation therapy technologists. Subsequent advances in technology expanded the scope of radiology and created other radiologic technologist specialties. There are now nuclear medicine technologists, diagnostic sonographers (for ultrasound imaging), and magnetic resonance imaging (MRI) technologists.

All radiologic technologists are health care professionals who provide technical services, such as the operation of complex machinery and equipment, the observation of radiation safety procedures, and the production of images. They also assist in patient management and care. Radiologic technologists do not practice independently but are employed by hospitals, other health care facilities, or independent practitioners. For the most part, they perform

procedures on patients only by prescription or under the direction of physicians who specialize in radiology (radiologists), or other authorized health care practitioners.

In 1986, radiologic technologists held about 115,000 jobs.[1] Most of these were in radiography. A very small proportion of jobs were in radiation therapy. About 3 out of 4 jobs were in hospitals. The rest were in physicians' offices, clinics, health maintenance organizations, and diagnostic imaging centers. Most radiographers and radiation therapy technologists worked in the private sector. Less than 3 percent were employed by the federal government.

There is a national shortage of radiologic technologists in all parts of the country and the situation is considered serious.[2] The supply of new graduates has been decreasing. Moreover, radiologic technology is one of the fastest growing occupations in the United States, with a 65 percent growth in jobs predicted by the year 2000, primarily in radiography in both hospital and outpatient settings.[3]

This report focuses on the regulation of radiographers and radiation therapy technologists, the two radiologic technology practices that are currently regulated under Chapter 466J, Hawaii Revised Statutes.

Radiographers. Radiographers use x-rays to produce images of the inner body which are then interpreted by radiologists (physicians) to help diagnose a patient's condition. Procedures range from basic x-rays, such as those of the extremities for fractures, to more complex ones involving a series of x-ray images of particular systems or organs. Radiographers also assist in special x-ray examinations which use a screen, called a fluoroscope, to view a patient's internal organs. Two of the more common fluoroscopic studies are those of the upper gastrointestinal area and the colon.

Some x-ray procedures require special equipment and expertise. Among these procedures are studies of: arteries (arteriogram), joints (arthrogram), lungs (bronchogram), uterus and fallopian tubes (hysterosalpingogram), lymphatic system (lymphangiogram), breasts (mammogram), spinal cord space (myelogram), salivary glands (sialogram), and veins (venogram). The computerized axial tomographic (CAT) scanner uses a computer to construct highly detailed cross sections of parts of the body (such as the brain) into images that can be viewed on a TV-like screen.

Radiation therapy technologists. Radiation therapy or radiotherapy is the treatment of disease, primarily cancer, with radiation. Beams of x-rays, cobalt 60 (a radioactive substance), or electrons are directed into the human body in an effort to destroy the diseased cells. Highly specialized machinery is used including supervoltage x-ray machines, cobalt 60 units, and linear accelerators which produce high energy streams of electrons.

Radiation therapy technologists work as members of radiation therapy teams made up of physicians, medical physicists, and other technical personnel. Radiation therapy technologists administer the radiation treatments to patients. Treatments are generally given daily over a period of time, and these technologists monitor the condition of patients and provide support on an ongoing basis. Radiation therapy technologists also assist in developing patient treatment plans.

Education of radiologic technologists in the U.S. Most radiologic technologists used to be trained in the military or on the job in hospitals. There are still many hospital programs, but now there are also almost as many college programs.

The national professional organization for radiologic technologists is the American Society of Radiologic Technologists (ASRT). The society has developed standards for education in collaboration with the American Medical Association and the American College of

Radiology (a physician specialist association). These standards are used by the American Medical Association's Committee on Allied Health Education and Accreditation (CAHEA) to accredit educational programs in radiography and radiation therapy technology, nuclear medicine technology, and diagnostic medical sonography. The United States Department of Education recognizes CAHEA as the accrediting agency for the radiologic technologist professions.

In 1987, there were 921 radiologic technology programs accredited by CAHEA. Of these 722 were in radiography and 100 were in radiation therapy technology.4 Much of the training for radiography and radiation therapy technology is done in these programs. However, there are still some radiographers who are trained on the job, primarily in states that do not regulate radiologic technology.

In Hawaii, the only program accredited by CAHEA is in radiography. It is offered by Kapiolani Community College. There are no CAHEA-accredited programs in the state for radiation therapy technology.

Education for radiography. There are two-year certificate or associate degree programs and four-year bachelor's degree programs for diagnostic radiography. The two-year programs are more prevalent and more widely available. They are offered by hospitals, medical centers, colleges, universities, trade schools, and the armed forces.

Those interested in teaching, administrative, or supervisory jobs usually get a bachelor's degree. The curriculum covers medical terminology, medical ethics and law, patient care, pathology, anatomy, and physiology. It also includes principles of diagnostic imaging, technology of imaging equipment, radiographic procedures, radiographic processing and film evaluation, principles of radiation protection, radiation physics, radiobiology, quality assurance, and computer science.

Education for radiation therapy technology. There are one-year certificate courses in addition to two-year and four-year programs for radiation therapy technology. Most of this training is provided by hospitals, medical centers, colleges, or universities. The curricula for these programs include basic medical courses, radiography, and radiation courses similar to those for radiography. In addition, there are courses on clinical and technical radiation oncology, basic clinical dosimetry, and a greater emphasis on radiobiology.

The prerequisite for entry into the two-year and baccalaureate programs is a high school diploma or its equivalent. One-year programs for radiation therapy technologists require some post-secondary education in radiography or other related health or science field.

Regulation of Radiologic Technologists

Congress strongly encouraged state regulation of radiologic technologists in the Consumer-Patient Radiation Health and Safety Act of 1981. This act required the federal government to (1) establish standards for accreditation and certification for persons who administer radiologic procedures, and (2) prepare a model state statute to "encourage the administration of accreditation and certification programs by the States." Federal regulations have been adopted that recommend such state licensing standards as requiring applicants to successfully complete an accredited program of formal education and pass a valid licensure examination.

Not all states license radiologic technologists, but the number has been steadily increasing. The American Society of Radiologic Technologists has been active in promoting federal standards and state licensing of radiologic technologists. In 1987, 16 states licensed radiographers.[5] By 1989, 23 states had implemented licensing programs for radiographers while 3 more had passed enabling

legislation.[6] Over half of these states also license radiation therapy technologists. Many states use the certification standards of the American Registry of Radiologic Technologists for their licensing programs.

The American Registry of Radiologic Technologists is the recognized national certifying body for the profession. It provides examination and certification in three disciplines of radiologic technology: radiography, radiation therapy technology, and nuclear medicine technology. To be certified, applicants must (1) be of good moral character; (2) successfully complete a program of formal education accredited by CAHEA for their special field; and (3) pass the certification examination for that field.

Regulation in Hawaii

The Legislature began licensing radiologic technologists under Chapter 466J, HRS, in 1974. Radiologic technology is defined in the law as "the application of x-rays, cobalt 60 or electrons on human beings for diagnostic or therapeutic purposes."

Chapter 466J establishes a Board of Radiologic Technologists to regulate the practice of radiologic technology. The board is attached to the Department of Health (DOH) for administrative purposes and served by staff of the Noise and Radiation Branch in the department's Environmental Health Services Division. As of October 1989, the board had issued 632 radiologic technologist licenses and 13 special temporary permits.

Board of Radiologic Technologists. The board is composed of nine members: two medical radiologists, four radiologic technologists (two in hospital practice), one radiologic technologist in therapeutic practice, a representative of the general public, and the director of health as an ex officio voting member. Members serve without pay but are reimbursed for their expenses.

The board is empowered to adopt rules; set standards for educational institutions of radiologic technology; approve qualified educational institutions; examine applicants for licenses; grant, deny, or revoke licenses; issue special temporary permits to unlicensed technologists working in shortage areas; and seek injunctive relief against those practicing radiologic technology without a license. It is also required to monitor approved educational institutions, to keep records of its proceedings, to make an annual report to the Governor, and to collect and disseminate data and other public information relating to radiologic technology through its executive secretary.

Licensing requirements. It is unlawful to practice as a radiologic technologist or radiation therapy technologist without a license. Section 466J-1 defines a radiologic technologist as "any person who applies x-rays to human beings for diagnostic purposes" and a radiation therapy technologist as "any person who applies x-rays, cobalt 60 or electrons to human beings for therapeutic purposes."

The board currently issues (1) licenses for the practice of diagnostic radiologic technology, (2) special temporary permits to practice limited radiologic technology and radiation therapy technology, and (3) temporary licenses.

To obtain a license as a diagnostic radiologic technologist, applicants must have (1) completed high school or the equivalent, (2) completed a course in an approved school for radiologic technologists or a training program for radiation therapy technologists, and (3) passed an examination given by the board or have been professionally certified through an equivalent examination. Only persons who are licensed may use the titles "certified radiologic technologist" (CRT) or "certified radiation therapy technologist" (CRTT).

The law allows the board to issue special temporary permits for unlicensed technologists to work in shortage areas. The board's rules

define shortage areas as communities that due to their remoteness do not have a licensed technologist available to provide adequate diagnostic radiologic services.[7] Before issuing such a permit, the board must determine that the action is in the best interest of the community and that the diagnostic caseload is less than 30 examinations per week.

Radiologic technologists on special temporary permits are limited to certain kinds of examinations, such as those of the skeleton, chest, and abdomen. The permit is issued only for one year and valid for a particular facility. The technologist with a special permit must be supervised by a radiologist or licensed technologist and be receiving training. Before the permit can be renewed, those with a permit must pass an examination prescribed by the board.

The board also uses special temporary permits to regulate radiation therapy technologists. This is being done pending the adoption of new rules establishing a licensure program for radiation therapy technologists.

The board issues temporary licenses to applicants who are eligible to take the examination to allow them to practice while they are waiting for the next examination.

The law exempts licensed medical practitioners in radiology, licensed doctors of dentistry, dental technicians, and dental hygienists. It also exempts students in approved schools for radiologic technologists and radiation therapy technologists, and students in schools of medicine, podiatry, dentistry, or chiropractic, when such students are under the direct supervision of a licensed technologist or qualified person.

Chapter 3

EVALUATION OF THE REGULATION OF RADIOLOGIC TECHNOLOGISTS

This chapter evaluates the regulation of radiologic technologists under Chapter 466J, *Hawaii Revised Statutes*. We assess the need for regulation, the effectiveness and reasonableness of regulatory operations, and make recommendations for improvement.

Summary of Findings

1. *There is sufficient potential for public harm from the practice of radiology to warrant continued regulation of radiologic technologists. The statute, however, is inconsistent and should be clarified.*

2. *The licensing of radiation therapy technologists has not been implemented properly or in a timely manner.*

3. *The licensing program is faulty in its use of special temporary permits, the board's examination, and temporary licenses.*

4. *The proposed rules contain several provisions that are restrictive and unnecessary. Instead, the program should be opened up by providing for reciprocity.*

5. *The program should remain with the Department of Health, but a Board of Radiologic Technology is not necessary.*

Need for Regulation

There is a need to regulate radiologic technologists. Incompetent technologists can endanger patients by exposing them to unnecessary and harmful radiation or making errors that result in poor quality x-rays or improper treatment.

Radiographers and radiation therapy technologists work relatively independently. In hospitals, clinics, and larger physician-run practices, physicians have general responsibility for the procedures but usually do not directly supervise technologists. Daily oversight is provided by supervising technologists. Radiographers usually work alone with patients when taking diagnostic x-rays. Radiation therapy technologists often work with one or two other technologists when administering radiation to patients, but while such team arrangements are recommended for quality assurance, actual arrangements are left to the individual facility.

Potential for harm from radiographers. Patients are exposed to certain risks in undergoing diagnostic x-rays. The major risks are: (1) receiving unnecessary exposure to radiation, and (2) being misdiagnosed due to poor quality x-ray images. These risks are of sufficient concern to warrant continued regulation.

Radiographers are responsible for properly positioning patients, operating an x-ray machine, and developing x-ray films. They must be knowledgeable about factors that determine the appropriate positions and machine settings for a given patient. Errors in calculations or in performing some aspects of these procedures

could result in patients receiving excessive radiation from the exposure or having to retake the x-ray.

Unnecessary exposure. The patient is considered at risk when receiving x-rays because of their potentially harmful properties. X-rays in high doses are known to cause cellular damage and possible genetic changes in humans. Research on the effects of the lower doses used in medical diagnosis has been difficult due to the need for large study populations, many years of study, and the difficulty of measuring other contributing factors. Therefore, scientists have mathematically projected the known effects of high doses of radiation to estimate the effects of lower doses. Although there is no conclusive evidence that the lower doses used for medical and dental diagnoses are similarly harmful, there is general agreement in the scientific community that some harm is likely from diagnostic x-rays.[1] Estimates of the effects of lower doses have focused on possible increases in the development of cancers.

The projected risks of diagnostic x-rays and other low-level radiation exposures are relatively small, but they are sufficient to have generated national and international standards for various radiation protection programs. Since no specific minimum dose limits have been identified as safe, the recommendation from organizations such as the International Commission on Radiological Protection is that only necessary exposures be made, that these exposures be justifiable on the basis of benefits that would not otherwise have been received, and that the doses actually administered be the minimum that would be of medical benefit to the patient.[2]

Poor-quality images. The purpose of diagnostic x-rays is to obtain images of the inner body for diagnostic purposes. A poor-quality x-ray can obscure a problem, allow it to go undetected and untreated, and thereby extend patient suffering or lead to serious complications.

The quality of an x-ray image depends on the skill of the radiographer in positioning the appropriate part of the body, determining and setting the proper exposure factors for each patient, and developing the exposed film. Automatic mechanisms in x-ray machines and film processors have reduced the likelihood of operator error, but new machines are not universally used and many technical decisions are left to the radiographers.

Potential for harm from radiation therapy technologists. The potential for harm is even greater from radiation therapy technologists. Although radiation therapy technologists usually work as members of teams in providing radiation therapy, the technologist plays a key role as the person who actually administers the radiation to the patient. It is the radiation therapy technologist who positions the patient under the treatment beam and operates the machine to deliver the radiation.

Unlike the low doses of radiation used in diagnostic x-rays, the amounts of radiation used in therapy are clearly dangerous. Radiation for a course of treatment that runs for a number of weeks, with five daily treatments per week, would be lethal if given at one time. Doses are therefore apportioned to amounts that would be tolerable on a daily basis. They are calculated to be sufficient to destroy the cancer tumor but also to minimize damage to the surrounding tissue and organs. A treatment plan--devised by a medical physicist, dosimetrist (one who determines the optimal amount, rate, and distribution of radiation for treatment), and physician--will include specific directions on the amount of radiation to be delivered each time, and the site and the angle at which the beam of radiation is to enter the body.

Patients could receive excessive radiation or irradiation of the wrong area of the body if a radiation therapy technologist errs in interpreting the directions for treatment or in

carrying them out. Errors could cause suffering, complications, and even death. The radiation therapy technologist is responsible for accurately recording the course and amounts of each treatment in detail and monitoring the condition of patients daily. Patients can also be endangered if the technologist does these tasks poorly or leaves significant information undocumented and unreported.

Lack of other controls. Aside from state licensing of radiologic technologists, few other competency standards exist. The federal government's standards for radiographers and radiation therapy technologists apply only to federal employees. The State's licensing program for hospitals and freestanding surgical outpatient facilities requires them to have "qualified technical personnel," but what this means is left undefined.[3] Most hospitals in Hawaii are voluntarily regulated by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO, formerly JCAH). The JCAHO requires a "qualified radiologic technologist" for radiology services, and "qualified technologist" for radiation oncology services, but also does not specify what it means by "qualified."[4]

In Hawaii, diagnostic x-ray services are provided in many offices of private physicians and other practitioners, and in clinics as well as hospitals. The outpatient settings are of particular concern. The Department of Health's radiation protection program only requires these offices to register their machines. The rules relating to this program merely require all work to be performed by under the direction of a person responsible for health and safety measures.

Because of the potential for harm to patients and the lack of other controls, the licensing program for radiographers and radiation therapy technologists should be retained. However, some changes are needed in the statute to make the licensing program more effective.

Need to clarify statute. There are some inconsistencies in the law that have created confusion. The board is referred to by different names and the title "radiologic technologist" is used in contradictory ways.

Section 466J-1 names the board as the Board of Radiologic Technology, but Section 466J-2 creates the Board of Radiologic Technologists. If the board is retained, it should be designated consistently as the Board of Radiologic Technology.

Section 466J-1 defines "radiologic technology" as including both diagnostic and therapeutic practices, but the same section defines a "radiologic technologist" as a person who applies x-rays for *diagnostic* purposes. In this way, it distinguishes between the radiologic technologist and the radiation therapy technologist who applies x-rays for therapeutic purposes.

Since the terms "radiologic technology" and "radiologic technologist" are commonly used in a generic sense for the various diagnostic and therapeutic technologists, it would be appropriate to use the terms in the same way in Hawaii. The term "radiographer" and "radiography" should be used to refer to diagnostic x-ray technologists and their work.

This would correspond to the definitions used by the American Registry of Radiologic Technologists (ARRT) in certifying radiologic technologists. The ARRT provides certification in 3 disciplines of radiologic technology: radiography, radiation therapy technology, and nuclear medicine technology. The term "radiologic technology" is used to refer to all three disciplines. The ARRT defines radiography

as the application of radiation by radiographers to assist physicians in the diagnosis of disease and injury.[5]

Radiation therapy technologists should continue to be called by their present title. This is also the title used by the ARRT to certify these technologists. The statute should be amended to include a definition of "radiation therapy technology" for their practice.

Improper Licensing Program for Radiation Therapy Technologists

There is as yet no formal licensing program for radiation therapy technologists. The board and the Department of Health have been extremely slow in developing the rules needed to establish the program. Radiation therapy technologists are currently regulated under special temporary permits in a manner which is contrary to the law.

Delay in developing the program. Part of the delay can be attributed to the lack of clarity in the law and the inconsistencies in terminology. As enacted in 1974, Chapter 466J provided for the licensing of "radiologic technologists" who were either diagnostic technologists or radiation therapy technologists. The rules developed by the board, however, pertained only to diagnostic radiographers, and the standards and tests were also aimed solely at qualifying radiographers.

Separate licensing standards for radiation therapy technologists were not established because the board and the department were advised by a deputy attorney general that the law permitted only one license--that for radiologic technologists. To create a separate licensing program for radiation therapy technologists would require amending the law.

Pending amendments to the law, the board amended its rules in 1978 to regulate radiation therapy technologists through special temporary permits. In 1980, Chapter 466J was amended to establish two categories of licensure, one for diagnostic technologists and the other for radiation therapy technologists. A definition for radiation therapy technologist was added to the statute, and provisions were made for their licensure and their representation on the board. Despite these amendments, there is still no licensing program for radiation therapy technologists, who continue to be regulated through special temporary permits.

Improper use of special temporary permits. Licensing radiation therapy technologists under special temporary permits is a serious misuse of these permits. Section 466J-6(b) states that upon request the board may issue special temporary permits to unlicensed technologists working in *shortage areas.* The intent was to make it possible for facilities to provide a needed service in areas where licensed radiologic technologists were not available. There had been testimony about the difficulty of getting qualified technologists on the neighbor islands. Special temporary permits were not intended to be an alternate way of licensing radiation therapy technologists.

A second problem in the way these permits are now used is that the standards for granting them do not ensure the competency of the practitioners. The department's only requirement for applicants--under an unwritten policy--is that they must have completed an accredited educational program for radiation therapy technology. The requirement for those who have permits is that they must take a brief examination before they can renew their permits. The examination, however, was developed by the board and does not have any demonstrated validity in testing the competency of those examined.

The board and the department acknowledge that the problem is the delay in developing rules to implement licensing for radiation therapy technologists. It was the responsibility of both the department and the board to ensure that this task was carried out expeditiously, but more

than nine years have passed since the law was amended.

Proposed rules have finally been approved by the deputy attorney general and are being prepared for public hearings. However, we found problems with the rules proposed for radiation therapy technologists.

Proposed rules continue special temporary permits. The board's proposed rules will establish a new licensing program for radiation therapy technologists. Applicants will have to be high school graduates, complete an approved educational program in radiation therapy, and pass a written examination developed by the American Registry of Radiologic Technologists. These provisions should create a sound licensing program for radiation therapy technologists.

However, the board plans to continue to issue special temporary permits to allow persons who do not meet the licensing requirement to practice under certain conditions. These conditions are inappropriate and do not comply with the law. They would allow exceptions to the new licensing program that are not justified.

The proposed rules state that special temporary permits may be issued "to provide radiation therapy technologists to a therapy facility." The conditions for issuing the permit would be that it is in the best interest of the community; that there would be no more than an average of 50 patient visits per week; and that the individual would be licensed as a (diagnostic) radiologic technologist, would operate under the supervision of a licensed radiologist, or licensed radiation therapist or radiation therapy technologist, and would be receiving or has received appropriate training. Individuals issued special temporary permits would be allowed to work without direct supervision.

The proposed rules appear to go beyond what is authorized by law, which is that special temporary permits be issued only for shortage areas. More important, the proposed rules do not establish any meaningful competency standards to protect patients from the dangers inherent in radiation therapy. The only prerequisite is that the applicant have a Hawaii radiologic technologist's license. This means that a radiographer whose experience is limited to diagnostic x-rays could practice as a radiation therapy technologist without any additional training. This undermines the new radiation therapy licensing program which has much more stringent and appropriate standards.

According to the board, this proposed permit process was intended to give Hilo Hospital the flexibility to exempt its employees from the educational and training requirements that will be required for licensure. In view of the serious risks to patients posed by inadequately or improperly applied radiation therapy, no facility should provide this service until it can do so properly and with qualified staff.

Proposed rules have broad "grandfather" provisions. In addition to the foregoing, the board proposes to include "grandfather" provisions for radiation therapy technologists that are far too broad. The proposed rules would offer licenses automatically to persons who at any time since 1974 have been active in this field and who have had a radiologic technologist license. This would allow licensing of persons who have not worked as radiation therapy technologists in recent years, or who have had only brief experience in this work many years ago.

Such exemptions seem unnecessary and imprudent considering the serious harm that can occur in radiation therapy and the changes in technology that have taken place in recent years. Since currently active radiation therapy technologists are reportedly already ARRT certified or eligible for certification as graduates from accredited programs, it would be more reasonable and at the same time prudent, for the state to grant "grandfather" approval only to those who are currently employed in the

field in Hawaii and who are ARRT certified or eligible.

Problems with the Licensing Program

Certain aspects of the radiologic licensing program need correction: (1) the issuance of temporary licenses; (2) the current examination; and (3) the use of special temporary permits for radiographers.

No basis for temporary licenses. The current rules say the board may issue temporary licenses to applicants who have been accepted for the licensing examination, and the board has routinely issued temporary licenses allowing applicants to work for up to nine months while they wait for the next examination. According to the board, this is done to ease the shortage of radiologic technologists in the state.

In 1986, the board was informed by a deputy attorney general that it did not have the legal authority to issue temporary licenses, and that doing so contradicted the basic intent of the law to license by examination. Nevertheless, the board has continued the practice. As of the beginning of October 1989, there were 36 temporary licenses authorized through February 1990. There is no basis in the law for this type of license, and it should be discontinued.

The provision for temporary licenses has been deleted from the proposed rules but the practice continues. The board says it is waiting for the proposed rules to be adopted before terminating temporary licenses. However, the legal advice received and the responsibilities and liabilities assumed by the board in this practice are sufficiently compelling reasons to cease immediately the issuing of temporary licenses.

Inadequate examination. The law requires applicants to pass an appropriate examination specified and administered by the board. The examinations, which have always been prepared by the board, are of questionable validity, having never been reviewed to determine if they test the competencies needed to protect patients from harm. They are therefore vulnerable to legal challenge.

The current examination for licensing radiographers does not meet recognized standards of testing. Licensing examinations must meet nationally established standards for validity, reliability, and fair administration. They must be legally defensible in a court of law. For these reasons, most state licensing agencies now use examinations that are developed by testing professionals, national testing organizations, or professional associations. These agencies develop examinations based on job analyses that determine the knowledge needed to perform the necessary tasks. To meet standards of validity and reliability, examinations must test the appropriate knowledge and skills and produce consistent results.

Recognizing the inadequacy of its examination, the board voted in 1980 to adopt the ARRT certification examination. The ARRT has developed examinations for radiographers and radiation therapy technologists that assess the knowledge and cognitive skills required for intelligent performance of the major tasks required of a technologist at the entry level. Many states use these examinations for their licensing programs.

Despite its 1980 decision to use the ARRT examination, the board has continued to use its own inadequate examination. The board says that it postponed changing examinations pending the adoption of rules specifying the use of ARRT's examination. This delay is unnecessary since the board already has the authority under the law and rules to designate the licensing examination. The board should begin to use the ARRT examinations as soon as possible.

Inadequate standards in special temporary permits for limited diagnostic x-rays. Special temporary permits have also been issued to persons who do not qualify for licensure to allow them to perform diagnostic x-rays in shortage areas. Here, as in the issuance of special temporary permits to radiation therapy technologists, the standards fail to ensure the competency of those working under these permits. The permits are being renewed an unlimited number of times--some over a period of years.

Persons without a high school diploma and without any education or training in diagnostic x-ray work may apply for and be issued a special temporary diagnostic permit. The only requirement is that the applicant must be employed by a facility in a remote area. The rules allow those with permits to perform a wide range of x-ray operations, including those of the chest, entire skeleton, and the abdomen. Although the introduction of contrast media (solutions or gases) into the body is prohibited, exceptions are made for studies of the gall bladder and kidneys when the contrast media is administered by a doctor. Furthermore, the rules do not require those on special temporary licenses to be under direct supervision.

The rules do require those with permits to have some x-ray training while working under the permit, but the nature of the training is not specified. Those with permits must also take a written examination for renewing the permit, but the examination is inadequate. The board plans to replace this examination with ARRT's "Limited Scope of Practice in Radiology" examination, but this would still be inadequate since the examination tests only the ability to take x-rays of the chest and extremities and does not include the other x-rays allowed under permits, such as those of the skull, spine, abdomen, and other studies.

The purpose of the special temporary permits was to allow medical facilities in remote areas some flexibility in hiring x-ray personnel by exempting them from strict licensure standards. The board has issued temporary permits only to persons working at state institutions on the neighbor islands. Currently, six persons at the Hana Medical Clinic on Maui and one at the medical facility in Kalaupapa on Molokai have special temporary permits. The temporary permits appear to be used primarily to exempt state facilities and state personnel from licensing.

Issuing special temporary permits for those working at state medical facilities in some locations may be justified, but the practice should still ensure public protection. New rules should be adopted that define shortage areas more specifically and establish some standards for applicants related to competency and for the granting of special temporary permits.

Restrictions in Proposed Rules

The board has developed new rules which are ready for public hearing. New rules are badly needed to implement the licensing program for radiation therapy technologists. However, the proposed rules have restrictive provisions that should be deleted.

Conditions on licensing without examination. Chapter 466J allows the board to accept the certification of another agency in lieu of examination for licensure "if such certificate was issued on the basis of an examination reasonably equivalent to the examination administered by the board". The proposed rules would award a license without examination to any person who has passed the ARRT certification examination, but it would do so only under certain conditions. The board believes these conditions are needed to screen out those who were certified years ago and may not have maintained their competence as radiologic technologists. These conditions are unjustified.

The board proposes to accept ARRT certification without conditions if it was obtained

within five years of the date of application for a Hawaii license. If certification was obtained more than five years earlier, the applicant would also have to meet the continuing education requirements of the American Society of Radiologic Technologists (ASRT) for at least one year within the three years preceeding application for a Hawaii license. (The ASRT requires practitioners to have 20 hours of continuing education a year to receive the society's "Evidence of Continuing Education.") Those who do not meet these two conditions would have to retake the ARRT examination even though they may already be ARRT certified.

There is no basis for the five-year cutoff requirements. The board admits that its choice of a five-year cutoff was arbitrary. Even more important, there is no assurance the five-year cutoff requirement would achieve the intended result of ensuring competency. The restriction could force experienced and capable technologists who have worked continuously in the field to retake the examination if they were certified more than five years ago. At the same time, it could automatically license others who have *not* worked as technologists but who were certified within the five-year cutoff period.

The proposed continuing education requirement also lacks merit. Continuing education programs do not necessarily help practitioners maintain their competence. The ARRT (the credentialing agency) does not require continuing education for certification because it has not found any program to be effective in maintaining competency. The ASRT (the professional society) does not claim that its continuing education program maintains continuing competency, noting it had not done any studies to determine the program's effectiveness in this regard.

These two requirements are restrictive and discriminatory in applying only to new applicants. The board is not requiring those already licensed to demonstrate that they have maintained their competence. Licensees need only submit a renewal fee for continued licensure.

Inconsistent conditions. Another section of the proposed rules pertaining to radiation therapy technologists says that the board would accept ARRT certification in lieu of the board's examination without requiring the applicants to meet continuing education requirements. This appears to contradict the proposed rule accepting ARRT certification *only* if the applicant also met continuing education requirements. This rule and the one above should be made consistent.

Need for reciprocity. The additional requirements would make it more difficult for newcomers to obtain state licensure. This is inconsistent with the board's concern about the shortage of radiologic technologists in Hawaii. To facilitate the movement of radiologic technologists from other states to Hawaii, efforts should focus on avoiding unnecessary barriers to entry.

In addition, the Legislature should consider extending reciprocity to licensed radiologic technologists from other states with standards that are comparable to those of Hawaii. This is especially needed since Hawaii has only a single accredited educational program for radiologic technologists and the program is limited to diagnostic x-rays. This means that Hawaii must recruit from out-of-state many of its trained radiographers and its radiation therapy technologists.

Organization of the Program

Placement of the Board of Radiologic Technologists within the Department of Health (DOH) differs from the State's general approach to occupational licensing. Most other licensing programs, including many relating to health occupations, are attached to the Department of Commerce and Consumer Affairs. There are several factors which support leaving this program with DOH. Among other things, DOH has expertise in the field of radiologic technology, and it has a field staff that can monitor what is happening throughout the state. Even more important, it has the ability to integrate the

licensing program with the State's other radiation protection programs.

The Board of Radiologic Technologists is served by staff of the Radiation Protection Program within the Environmental Health Services Division. All licensing functions are centrally managed by the radiation program supervisor, including applications, examinations, licensing, monitoring, enforcement, and the holding of board meetings. In addition, the same personnel regulate radiation equipment throughout the state.

The DOH radiation staff can investigate licensing complaints and verify the licensure of operators at the time they do their regular surveillance of medical and dental x-ray machines. The staff's technical knowledge about radiation, radiation safety and protection, and x-ray equipment contribute to the radiologic technology licensing program.

Placement of the radiologic technology licensing program (regulation of operators) with the radiation protection program (regulation of x-ray installations and devices and other radiation sources) puts together the two state programs designed to protect the public from the harmful effects of radiation. This allows DOH to integrate its efforts into a single cohesive and coordinated program.

Board-staff relationships. The program can be strengthened by assigning DOH full authority and responsibility for the licensing program. Progress over the past 15 years has been very slow. This may be due to the division of authority and responsibility between the department and the board. On one hand, the board has the policy formulation and rule-making authority, but it meets infrequently and has no staff resources of its own. On the other hand, the staff handles the day-to-day operations of the program but cannot make final decisions. Authority and responsibility are split, and no one can be held accountable.

One solution is to assign full authority and responsibility for the licensing program to DOH and make the board an advisory body. The main work of the board has been accomplished. Decisions have been made about policies and rules governing the program and the licensing requirements. To a large extent, the board already functions in an advisory capacity, leaving operations to the department.

The DOH staff currently operates the licensing program. It screens applicants, administers the examinations, approves and denies applications, issues licenses and permits, and performs monitoring and enforcement functions. In the few instances where matters are referred to the board, decisions are guided by the advice of the staff and the deputy attorney general assigned to the board. The only major task remaining is the revision of rules. This can still be done with the board as an advisory body.

Recommendations

I. Chapter 466J, Hawaii Revised Statutes, should be reenacted to continue the regulation of radiologic technologists. In reenacting the law, the Legislature should make the following amendments:

a. Designate the board consistently as the Board of Radiologic Technology and make it an advisory body.

b. Assign full authority for the licensing of radiologic technologists to the Department of Health.

c. Use the term "radiographer" for those radiologic technologists who apply x-rays for diagnostic purposes.

d. Use the term "radiologic technologist" for both radiographers and radiation therapy technologists.

e. Add the term "radiation therapy technology" for the practice of using x-rays, cobalt 60, or electrons for therapeutic purposes.

f. Provide for licensure by reciprocity for applicants licensed in states with standards comparable to those of Hawaii.

g. Allow special temporary permits to be issued only for limited diagnostic x-ray purposes.

2. The department should take immediate steps to:

a. Discontinue the use of special temporary permits to license radiation therapy technologists.

b. Cease issuing temporary licenses.

c. Replace the current licensing examination with the examinations of American Registry of Radiologic Technologists (ARRT).

d. Determine which other states have equivalent licensing requirements that would qualify their licensees for reciprocity.

3. The department should expedite adoption of the proposed rules. However, it should amend its proposed rules to accomplish the following:

a. Limit "grandfather" provisions in licensing radiation therapy technologists to those who are currently practicing and who are certified or eligible for certification by the American Registry of Radiologic Technologists (ARRT).

b. Define shortage areas, delete provisions for special temporary permits for therapeutic purposes, and establish minimum standards relating to competency for applicants for special temporary permits for limited diagnostic x-rays.

c. Establish quality assurance procedures for those working under special temporary permits.

d. Accept ARRT certification without any conditions in lieu of examination by the State and make the rules for accepting ARRT certification consistent with each other.

NOTES

Chapter 1

1. See discussion in *51 American Jurisprudence,* 2d., "Licenses and Permits," Sec. 14.

2. *Terr. v. Fritz Kraft*, 33 Haw. 397.

Chapter 2

1. U. S. Department of Labor, *Occupational Outlook Handbook,* 1988-89 ed., Washington, Government Printing Office, p. 176.

2. American Healthcare Radiology Administrators, *Report on the Summit On Manpower,* Sudbury, Massachusetts, April 1989. pp. 1-20.

3. Institute of Medicine, *Allied Health Services, Avoiding Crises,* Washington, D.C., National Academy Press, 1989, pp. 135-141.

4. *Allied Health Education Directory 1988,* 16th ed., Chicago, American Medical Association, p. 278.

5. U. S. Department of Labor, *Occupational Outlook Handbook,* p. 177.

6. "The Professional Status of the Radiologic Technologist," *Radiologic Technology,* vol. 60, no. 3, p. 253.

7. Section 11-224-8, *Hawaii Administrative Rules.*

Chapter 3

1. American Medical Association, *Risks of Nuclear Energy and Low-Level Ionizing Radiation, Report of an AMA Advisory Panel to the Council on Scientific Affairs of the American Medical Association,* 1981, pp. 10-17.

2. Herman Cember, Introduction to Health Physics, 2d ed., New York, Pergamon Press, 1983, p. 203.

3. See Chapters 93 and 95, *Hawaii Administrative Rules.*

4. *Accreditation Manual for Hospitals, 1988,* Joint Commission on Accreditation of Healthcare Organizations, Chicago, 1988.

5. American Registry of Radiologic Technologists, *The Role of the American Registry of Radiologic Technologists in State Licensing of Radiologic Technologists,* Minneapolis, January 1989.

APPENDIXES

APPENDIX A

COMMENTS ON AGENCY RESPONSES

A preliminary draft of this Sunset Evaluation Report was transmitted on December 19, 1989 to the Board of Radiologic Technology and the Department of Health (DOH) for their review and comments. A copy of the transmittal letter to the board is included as Attachment 1. A similar letter was sent to the department. The responses from the board and the department are included as Attachments 2 and 3.

The board has reservations on assigning full licensing authority to DOH and on changing the board to an advisory body. The board says that terminating the issuing of temporary licenses before it adopts rules to accept national certification would adversely affect the supply of technologists in Hawaii. From its proposed rules, the board recently deleted both the provisions to use special temporary permits for therapeutic purposes and the conditions for acceptance of national certification. It says it plans to address the issue of its licensing examination and the need to establish standards for special temporary permits for diagnostic purposes.

The department generally concurs with the findings and recommendations of the report. It expresses concerns with an immediate termination of temporary licenses, and also notes the board's recent revisions of its proposed rules.

ATTACHMENT 1

STATE OF HAWAII
OFFICE OF THE AUDITOR
465 S. King Street, Room 500
Honolulu, Hawaii 96813

(808) 548-2450
FAX: (808) 548-2693

December 19, 1989

C O P Y

Ms. Adleen Ichinose, Chair
Board of Radiologic Technology
Department of Health
1250 Punchbowl Street
Honolulu, Hawaii 96813

Dear Ms. Inchinose:

Enclosed are nine copies, numbered 9 to 17 of our draft, *Sunset Evaluation Report, Regulation of Radiologic Technologists.*

The report contains our recommendations relating to the regulation of radiologic technologists. If you have any comments on our recommendations, we would appreciate receiving them by January 19, 1990. Any comments we receive will be included as part of the final report which will be submitted to the Legislature.

Since the report is not in final form and changes may be made to it, we request that you limit access to the report to those whom you might wish to call upon for assistance in preparing your response. Public release of the report will be made solely by our office and only after the report is published in its final form.

Sincrely,

Newton Sue
Acting Legislative Auditor

Enclosures

ATTACHMENT 2

JOHN WAIHEE
GOVERNOR OF HAWAII

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:
File:

January 17, 1990

RECEIVED
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OFC. OF THE AUDITOR
STATE OF HAWAII

Mr. Newton Sue
Acting Legislative Auditor
Office of the Auditor
465 South King Street, Room 500
Honolulu, Hawaii 96813

Dear Mr. Sue:

My comments concerning the Sunset Evaluation Report, Regulation of Radiologic Technologists, are as follows:

Concerning designating the Board as an advisory body and assigning full licensing authority to the Department of Health, there are reservations. First of all, an advisory board has no authority to affect change. Its concerns on important issues regarding the profession can easily be unsolicited or dismissed. Secondly, and more importantly, the radiologic technology profession should have the authority to regulate itself as is currently the case. To allow otherwise would invite the potential of adversely affecting the profession in the future. I believe a tendency to mandate or rule in the interests of the Department of Health rather than the profession cannot be ruled out. Licensing authority should be left with the Board of Radiologic Technologists.

In reference to temporary licenses, immediate termination without the adoption of the proposed rules (which allow American Registry of Radiologic Technologists reciprocity) will adversely affect the delivery of x-ray services in the State of Hawaii. This is especially significant for hospitals and medical centers which must provide ongoing service for acute patient care. A qualified applicant would have to wait until the administration of the written examination in February or August. In other words, a qualified applicant would not be immediately available for employment. In light of the fact that there is a shortage of radiologic technologist in Hawaii, it would not be prudent to immediately terminate the temporary license.

In the last meeting of the Board of Radiologic Technologists on October 18, 1989, the following actions were taken relative to the proposed rules:

1. The special temporary permit for therapeutic purpose was deleted since it serves no purpose with the allowance of licensure for radiation therapy technologists.

2. The time conditions for accepting the American Registry of Radiologic Technologists (ARRT) certification was eliminated. ARRT-certified technologists will be given exemption from the required written examination regardless of certification date. In essence, this is reciprocity for ARRT. Since the vast majority of technologists are ARRT, and since most states recognize ARRT, this action also serves as reciprocity with certain other states.

The above changes have been incorporated in the draft of the proposed rules. The draft has been finalized and will be forwarded by the Department of Health to the Governor for preliminary approval and authorization for public hearing.

The Board will address the following issues in their next meeting:

1. The contracting of the ARRT examination before the adoption of the proposed rules.

2. Standards for the special temporary permit for diagnostic purpose.

Relative to the proposed use of the "Limited Scope of Practice in Radiology" examination from ARRT for the special temporary permit, questions on the radiography of the skull, sinuses, and spine are now included (as of mid-1989) in addition to chest and extremities. Radiography of the abdomen, as allowed by the permit and exclusive of the above examination, will be addressed by the Board.

Thank you for the opportunity to comment on the results of the recent Sunset evaluation.

Very truly yours,

Adleen Ichinose

Adleen Ichinose, Chairperson
Board of Radiologic Technologists

RST:ki

ATTACHMENT 3

JOHN WAIHEE
GOVERNOR OF HAWAII

JOHN C. LEWIN, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HAWAII 96801

In reply, please refer to:

January 19, 1990

Mr. Newton Sue
Acting Legislative Auditor
Office of the Auditor
465 S. King St., Room 500
Honolulu, Hawaii 96813

Dear Mr. Sue:

In reference to the "Sunset Evaluation Report, Regulation of Radiologic Technologists," the following comments are submitted.

There is general concurrence with the findings and recommendations in the report. However, the issues concerning the immediate termination of the use of temporary licenses warrants discussion.

The immediate termination of the issuance of temporary licenses for diagnostic x-rays (allowed under existing rules) before the adoption of the proposed rules will significantly impact upon the hiring of qualified radiologic technologists in our community. At the present time, there is a shortage of radiologic technologists in Hawaii.

The proposed rules will allow American Registry of Radiologic Technologists (ARRT)-certified applicants to be licensed without examination. In essence, this reciprocity will allow an ARRT radiologic technologist to be licensed immediately and made available for employment.

If temporary licenses for diagnostic x-rays are terminated immediately, qualified applicants would be unemployable until passing the written examination administered in February or August. This action will severely impact upon radiology services in major health facilities such as hospitals where acute care services are rendered.

I understand that the Board of Radiologic Technologists has recently taken the following actions regarding the proposed rules:

1. Eliminate the special temporary permit for therapeutic purpose.

2. Allow ARRT applicants exemption from the written examination, regardless of certification date.

The proposed rules incorporating the above changes are currently being finalized for public hearings.

Thank you for the opportunity for us to review the results of this sunset evaluation.

Very truly yours,

JOHN C. LEWIN, M.D.
Director of Health

APPENDIX B

DESCRIPTION:
Continues the regulation of radiologic technologists until 12/31/96. Amends the law by designating the board of radiologic technology as an advisory body to the department of health and assigning full authority for the licensing of radiologic technologists to the department. Provides for licensure by reciprocity for applicants in states with standards comparable to those of Hawaii. Adds the term "radiographer" to describe those radiologic technologists who apply x-rays to human beings for diagnostic purposes. Amends the definition of radiologic technologist to include both radiographers and radiation therapy technologists. Requires radiographers (as opposed to radiologic technologists) and radiation therapy technologists to be licensed by the department.

THE SENATE
FIFTEENTH LEGISLATURE, 1990
STATE OF HAWAII

S.B. NO.

A BILL FOR AN ACT

RELATING TO RADIOLOGIC TECHNOLOGY.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAII:

SECTION 1. The purpose of this Act is to implement the recommendations of the legislative auditor in the auditor's sunset evaluation report on the regulation of radiologic technologists by the board of radiologic technology. The legislature agrees with the auditor's findings that:

(1) The regulation of radiologic technologists should be continued since there is significant potential for public harm from the practice of radiology, and that the statute is inconsistent and should be clarified;

(2) The licensing program should be handled directly by the department of health, and that the board should be changed to an advisory board;

(3) Provisions for licensure by reciprocity for applicants licensed in states with standards comparable to those in Hawaii are needed to reduce barriers to the entry of qualified people into the profession in Hawaii in light of existing shortages.

SECTION 2. Section 26H-4, Hawaii Revised Statutes, is amended to read as follows:

"**§26H-4 Repeal dates.** (a) The following [chapter and] sections are hereby repealed effective December 31, 1990:

[(1) Chapter 466J (Board of Radiologic Technology)

(2)] (1) Sections 321-13 to 321-15 (midwives, laboratory directors, laboratory technologists, laboratory supervisors, laboratory technicians, tattoo artists, electrologists, and sanitarians)

(b) The following chapters are hereby repealed effective December 31, 1991:

(1) Chapter 447 (Dental Hygienists)

(2) Chapter 453 (Board of Medical Examiners)

(3) Chapter 457 (Board of Nursing)

(4) Chapter 458 (Board of Dispensing Opticians)

(5) Chapter 460J (Pest Control Board)

(6) Chapter 462A (Pilotage)

(7) Chapter 438 (Board of Barbers)

(8) Chapter 468K (Travel Agencies)

(c) The following chapters are hereby repealed effective December 31, 1992:

(1) Chapter 448H (Elevator Mechanics Licensing Board)

(2) Chapter 451A (Board of Hearing Aid Dealers and Fitters)

(3) Chapter 457B (Board of Examiners of Nursing Home

Administrators)

(4) Chapter 460 (Board of Osteopathic Examiners)

(5) Chapter 461 (Board of Pharmacy)

(6) Chapter 461J (Board of Physical Therapy)

(7) Chapter 463E (Podiatry)

(8) Chapter 467D (Social Workers)

(d) The following chapters are hereby repealed effective December 31, 1993:

(1) Chapter 437 (Motor Vehicle Industry Licensing Board)

(2) Chapter 437B (Motor Vehicle Repair Industry Board)

(3) Chapter 440 (Boxing Commission)

(4) Chapter 446 (Debt Adjusters)

(5) Chapter 436E (Board of Acupuncture)

(e) The following sections are hereby repealed effective December 31, 1993:

(1) Sections 445-21 to 38 (Auctions)

(2) Sections 445-131 to 136 (Pawnbrokers)

(3) Sections 445-171 to 172 (Secondhand Dealers)

(4) Sections 445-231 to 235 (Scrap Dealers)

(f) The following chapters are hereby repealed effective December 31, 1994:

(1) Chapter 441 (Cemetery and Funeral Trusts)

(2) Chapter 443B (Collection Agencies)

(3) Chapter 452 (Board of Massage)

(4) Chapter 455 (Board of Examiners in Naturopathy)

(5) Chapter 459 (Board of Examiners in Optometry)

(6) Chapter 442 (Board of Chiropractic Examiners)

(7) Chapter 373 (Commercial Employment Agencies)

(8) Chapter 448 (Board of Dental Examiners)

(9) Chapter 465 (Board of Psychology)

(10) Chapter 468E (Speech Pathology and Audiology)

(g) The following chapters are hereby repealed effective December 31, 1995:

(1) Chapter 439 (Board of Cosmetology)

(2) Chapter 444 (Contractors License Board)

(3) Chapter 448E (Board of Electricians and Plumbers)

(4) Chapter 454 (Mortgage Brokers and Solicitors)

(5) Chapter 454D (Real Estate Collection Servicing Agents)

(6) Chapter 464 (Professional Engineers, Architects, Surveyors and Landscape Architects)

(7) Chapter 466 (Board of Public Accountancy)

(8) Chapter 467 (Real Estate Commission)

(h) The following chapter is hereby repealed effective December 31, 1996:

(1) Chapter 466J (Radiologic Technology)

[(h)] (i) The following chapters are hereby repealed effective December 31, 1997:

(1) Chapter 463 (Board of Private Detectives and Guards)

(2) Chapter 471 (Board of Veterinary Examiners)."

SECTION 3. Section 466J-1, Hawaii Revised Statutes, is amended to read as follows:

"**§466J-1 Definitions.** As used in this chapter:

["Approved school for radiologic technologist" and "approved training program for radiation therapy technologists" mean a school or training program determined and accredited by the board as providing a course of instruction in radiologic technology which is adequate to meet the purposes of this chapter.

"Board" means board of radiologic technology.

"Radiation therapy technologist" means any person who applies x-rays, cobalt 60 or electrons to human beings for therapeutic purposes.

"Radiologic technologist" means any person who applies x-rays to human beings for diagnostic purposes.

"Radiologic technology" means the application of x-rays, cobalt 60 or electrons on human beings for diagnostic or therapeutic purposes.

"Supervision" means responsibility for, and control of, quality, radiation safety, and technical aspects of all x-ray, cobalt 60 or electrons examinations and procedures.]

"Approved school for radiologic technologists", "approved training program for radiographers", and "approved training program for radiation therapy technologists" mean a school or training program determined and accredited by the department as providing a course of instruction in radiologic technology that is adequate to meet the purposes of this chapter.

"Board" means the radiologic technology advisory board.

"Department" means the department of health.

"Director" means the director of health.

"Radiation therapy technologist" means any person who applies x-rays, cobalt 60, or electrons to human beings for therapeutic purposes.

"Radiation therapy technology" means the application of x-rays, cobalt 60, or electrons to human beings for therapeutic purposes.

"Radiographer" means any person who applies x-rays to human beings for diagnostic purposes.

"Radiography" means the application of x-rays to human beings for diagnostic purposes.

"Radiologic technologist" means any person who applies x-rays to human beings for diagnostic purposes, or x-rays, cobalt 60, or electrons to human beings for therapeutic purposes.

"Radiologic technology" means the application of x-rays to human beings for diagnostic purposes or x-rays, cobalt 60, or electrons to human beings for therapeutic purposes.

"Supervision" means responsibility for, and control of, quality, radiation safety, and technical aspects of all x-ray, cobalt 60, or electron examinations and procedures."

SECTION 4. Chapter 466J, Hawaii Revised Statutes, is amended by adding a new section to be appropriately designated and to read as follows:

"**§466J- Powers and duties of the department.** The department shall:

(1) Through the director, adopt, amend, or repeal such rules pursuant to chapter 91 as may be necessary to effectuate the purposes of this chapter;

(2) Determine minimum standards for and approve those educational institutions that provide a course of instruction in radiologic technology that meets the requirements of this chapter;

(3) Withdraw approval or deny approval of educational

institutions for failure to meet prescribed standards;

(4) Examine, license, and grant, deny, or revoke the licenses of qualified applicants;

(5) Establish reciprocity agreements with other states that have standards similar to those in Hawaii to alleviate the shortage of licensed radiographers and radiation therapy technologists; and

(6) Consult with the board as deemed appropriate."

SECTION 5. Section 466J-2, Hawaii Revised Statutes, is amended to read as follows:

"**§466J-2 [Board of radiologic technologists; appointment, powers and duties.] Radiologic technology advisory board; appointment; duties.** The [governor] director shall appoint and may remove [in the manner prescribed in section 26-34 a board of] a radiologic [technologists,] technology advisory board, to be placed in the department [of health] for administrative purposes.

The board shall consist of [nine] seven members[.], who shall serve in an advisory capacity to the department. The appointed membership shall be composed of two persons licensed to practice medicine pursuant to chapter 453 and certified by the American Board of Radiology[,]; four persons with at least five years' experience and certified in the practice of [radiologic

technology,] radiography, two of whom shall be persons engaged in the hospital practice of [radiology,] radiography; and one person who practices [radiologic technology for therapeutic purposes, and one person from the general public.] radiation therapy technology.

[The governor shall reduce the terms of those appointed so as to provide for the expirations of an equal number of terms each year. The director of health or the director's designated representative shall be the ninth, ex officio voting member of the board.]

The board shall:

(1) Select its own [chairman;] chairperson;

[(2) Adopt, amend, or repeal such rules pursuant to chapter 91 as are necessary to effectuate the purposes of this chapter;

(3) Determine minimum standards for and approve such educational institutions which provide a course of instruction in radiologic technology which meets the requirements of this chapter;

(4) Withdraw approval or deny approval of educational institutions for failure to meet prescribed standards;

(5) Examine, license, and grant, deny, or revoke the

licenses of qualified applicants;

(6) Keep a record of all its proceedings; and

(7) Make an annual report to the governor.]

(2) Advise the department on the adoption of rules to effectuate the purposes of this chapter;

(3) Assist the department in determining the minimum standards for and approving those educational institutions that provide a course of instruction in radiologic technology that meets the requirements of this chapter;

(4) Advise the department on the withdrawal of approval from or denial of approval to educational institutions that fail to meet prescribed standards;

(5) Advise the department on the examination and licensure of qualified applicants; and

(6) Advise the department on matters pertaining to the granting, denial, or revocation of licenses.

Members of the board shall serve without compensation, but shall be reimbursed for expenses; including travel expenses, necessary for the performance of their duties."

SECTION 6. Section 466J-3, Hawaii Revised Statutes, is amended to read as follows:

"**§466J-3 [Executive secretary; other assistants.** (a)] Staff. Subject to chapters 76 and 77 the department [of health] may employ and remove such administrative and clerical assistants as the [board may require and prescribe their powers and duties.] department deems necessary to implement this chapter.

[(b) The department shall employ an executive secretary of the board whose position shall be subject to chapters 76 and 77. The executive secretary shall be:

(1) Employed with due regard to the secretary's fitness, thorough administrative ability, and knowledge of and experience in the field of radiologic technology;

(2) Under the supervision of the board, and shall administer this chapter and the rules and orders established hereunder and perform such other duties as the board may require;

(3) In charge of the offices of the board and responsible to the board for the preparation of reports and the collection and dissemination of data and other public information relating to radiologic technology.]"

SECTION 7. Section 466J-4, Hawaii Revised Statutes, is amended to read as follows:

"**§466J-4 Licenses required.** No person shall practice or

offer to practice as a [radiologic technologist] radiographer or as a radiation therapy technologist without an appropriate license previously obtained and maintained in good standing in compliance with this chapter and the rules of the [board. After July 1, 1974, it shall be unlawful for any person not appropriately licensed under this chapter to practice or offer to practice radiologic technology.] department.

Every person licensed as a [radiologic technologist] radiographer or as a radiation therapy technologist shall be subject to an annual license fee (initial and renewal) of $10. The annual period shall commence on July 1 of each year, and the failure of any licensee to pay the licensee's fee shall be grounds for revocation of the licensee's license. All fees collected by the [board] department shall be deposited into the general fund."

SECTION 8. Section 466J-5, Hawaii Revised Statutes, is amended to read as follows:

"**[§466J-5 Radiologic technologists and radiation therapy technologists; qualifications, licenses, examination.** (a) An applicant for a license to practice as a radiologic technologist or as a radiation therapy technologist shall submit to the board written evidence, verified by oath or affirmation, that the

applicant:

(1) Has satisfactorily completed a course in an approved school for radiologic technologists or an approved training program for radiation therapy technologists;

(2) Has completed an approved high school course of study or the equivalent thereof as determined by the appropriate educational agency.

(b) The board shall adopt rules pursuant to chapter 91 to further define and regulate the practices authorized for radiologic technologists and for radiation therapy technologists.

(c) The applicant shall be required to pass the appropriate examination specified and administered by the board; provided that the board may accept in lieu of the examination a certificate of another agency or organization which certifies radiologic technologists or radiation therapy technologists, if such certificate was issued on the basis of an examination reasonably equivalent to the examination administered by the board.

(d) A person who, on July 1, 1974, is actively engaged or was actively engaged in this State in the last five years in the practice of radiologic technology and has satisfactorily completed a course in radiologic technology in an approved school

for radiologic technologists or has had three years of practical experience and training in radiologic technology shall, without a requirement of examination, receive a license.

(e) The applicant applying for a license to practice as a radiologic technologist or as a radiation therapy technologist shall pay a non-refundable fee of $10 to the board, plus the cost of an examination. All fees received by the board and moneys collected under this chapter shall be deposited with the director of finance to the credit of the general fund.

(f) Any person who holds a license to practice as a radiologic technologist shall have the right to use the title "certified radiologic technologist", and the abbreviation C.R.T. No other person shall assume such title or use such abbreviation or any other words, letters, signs, or devices to indicate that the person using the same is a certified radiologic technologist.

(g) Any person who holds a license to practice as a radiation therapy technologist shall have the right to use the title "certified radiation therapy technologist", and the abbreviation C.R.T.T. No other person shall assume such title or use such abbreviation or any other words, letters, signs, or devices to indicate that the person using the same is a certified radiation therapy technologist.

(h) The form of every license shall be prescribed by and issued in the name of the board.] **§466J-5 Radiographers and radiation therapy technologists; qualifications, licenses, examination.** (a) An applicant for a license to practice as a radiographer or as a radiation therapy technologist shall submit to the department written evidence, verified by oath or affirmation, that the applicant:

(1) Has satisfactorily completed a course in an approved school for radiologic technology or an approved training program for radiographers or radiation therapy technologists;

(2) Has completed an approved high school course of study or the equivalent thereof as determined by the appropriate educational agency.

(b) The director shall adopt rules pursuant to chapter 91 to further define and regulate the practices authorized for radiographers and for radiation therapy technologists.

(c) The applicant shall be required to pass the appropriate examination specified and administered by the department; provided that the department may accept in lieu of the examination a certificate of another agency or organization that certifies radiographers or radiation therapy technologists, if

the certificate was issued on the basis of an examination reasonably equivalent to the examination administered by the board.

(d) The director shall adopt rules pursuant to chapter 91 to enable licensed radiographers and licensed radiation therapy technologists from other states having standards that are comparable to those in Hawaii to obtain licensure without the need for examination.

(e) The applicant applying for a license to practice as a radiographer or as a radiation therapy technologist shall pay a non-refundable fee of $10 to the department, plus the cost of an examination. All fees received by the department and moneys collected under this chapter shall be deposited with the director of finance to the credit of the general fund.

(f) Any person who holds a license to practice as a radiographer shall have the right to use the title "certified radiographer", and the abbreviation C.R. No other person shall assume this title or use its abbreviation or any other words, letters, signs, or devices to indicate that the person is a certified radiographer.

(g) Any person who holds a license to practice as a radiation therapy technologist shall have the right to use the

title "certified radiation therapy technologist", and the abbreviation C.R.T.T. No other person shall assume this title or use its abbreviation or any other words, letters, signs, or devices to indicate that the person is a certified radiation therapy technologist.

(h) The form of every license shall be prescribed by and issued in the name of the department."

SECTION 9. Section 466J-6, Hawaii Revised Statutes, is amended to read as follows:

"**§466J-6 Persons exempted.** (a) Any provision in this chapter to the contrary notwithstanding, a license shall not be required for licensed medical practitioners in radiology, licensed doctors of dentistry, dental technicians, dental hygienists, and students in an approved school for [radiologic technologists] radiographers and radiation therapy technologists and in schools of medicine, podiatry, dentistry, or chiropractic, when [such] the persons are operating x-ray machines under the direct supervision of a licensed radiographer, licensed radiation therapy technologist, or a qualified person pursuant to this chapter.

(b) The board may issue special temporary permits upon request to unlicensed [technologists] radiographers working in

shortage areas."

SECTION 10. Section 466J-7, Hawaii Revised Statutes, is amended to read as follows:

"**§466J-7 Radiologic technology education programs.** (a) An institution desiring to conduct an education program to prepare certified [radiologic technologists] radiographers or certified radiation therapy technologists shall apply to the [board] department and submit evidence that it is prepared to meet such standards as shall be established by law and by the [board.] department.

(b) From time to time as deemed necessary by the [board,] department, it shall be the duty of the [board,] department, through [its] the department's authorized representative, to survey radiologic technology education programs in the State. Written reports of the surveys shall be submitted to the [board.] department. If the [board] department determines that any accredited radiologic technology education program is not maintaining the standards required by law and by the [board,] department, notice thereof in writing specifying the discrepancies shall be immediately given to the institution conducting the program. A program [which] that fails to correct these conditions to the satisfaction of the [board] department

within a reasonable time shall be discontinued after a hearing held in conformance with chapter 91."

SECTION 11. Section 466J-8, Hawaii Revised Statutes, is amended to read as follows:

"**§466J-8 Denial, revocation, or suspension of license.** (a) The [board] department shall have the power to deny, revoke, or suspend any license issued [by the board] or applied for in accordance with this chapter, upon proof that the person:

(1) Is guilty of fraud or deceit in procuring or attempting to procure a license to practice as a [radiologic technologist] radiographer or as a radiation therapy technologist;

(2) Is mentally incompetent;

(3) Is guilty of unprofessional conduct; or

(4) Has [wilfully] knowingly or repeatedly violated this chapter.

(b) Before denying, suspending or revoking any license, the [board] department shall furnish the licensee a notice in writing as prescribed by section 91-9 and shall afford the licensee an opportunity to be heard in person and by or with counsel. Any order denying a license, or suspending or revoking a license shall be rendered not later than fifteen days after the hearing,

and any aggrieved person may appeal the order as provided in chapter 91."

SECTION 12. Section 466J-9, Hawaii Revised Statutes, is amended to read as follows:

"**§466J-9 Violations of chapter; penalties.** It shall be a misdemeanor for any person, including any corporation, association, or individual to:

(1) Sell or fraudulently obtain or furnish any [radiologic technologist's] radiographer's or radiation therapy technologist's diploma, license, renewal, or record or aid or abet therein;

(2) Practice radiologic technology as defined by this chapter under cover of any license or record illegally or fraudulently signed or issued unlawfully or under fraudulent representation;

(3) Practice radiologic technology unless licensed to practice under this chapter;

(4) Use in connection with [his or her] the person's name any designation tending to imply that [he or she] the person is a certified [radiologic technologist] radiographer or a certified radiation therapy technologist unless licensed to practice under this

chapter;

(5) Practice radiologic technology during the time [his or her] the person's license issued under this chapter is suspended or revoked;

(6) Violate this chapter[.] or any rules adopted by the department."

SECTION 13. Section 466J-10, Hawaii Revised Statutes, is amended to read as follows:

"**§466J-10 Injunctive relief.** The practice of radiologic technology by any person who has not been issued a license under this chapter or whose license has been suspended or revoked or has expired is declared to be inimical to the public welfare and to constitute a public nuisance. The [board may,] department, through the attorney general, may apply for an injunction in any court of competent jurisdiction to enjoin any person who has not been issued a license, or whose license has been suspended or revoked, or whose license has expired from practicing radiologic technology. Upon the filing of a verified petition in court, the court or any judge thereof, if satisfied by affidavit, or otherwise, that [such] the person is or has been practicing as a [radiologic technologist] radiographer or as a radiation therapy technologist without having been issued a license, or after the

person's license has been suspended or revoked, or has expired, may issue a temporary injunction, without notice or bond, enjoining the defendant from further practicing as [such radiologic technologist] a radiographer or radiation therapy technologist. A copy of the verified petition shall be served upon the defendant and the proceedings shall thereafter be conducted as in other civil cases. If it [be] is established that the defendant has been or is practicing as a [radiologic technologist] radiographer or radiation therapy technologist without having been issued a license or has been or is practicing as a [radiologic technologist] radiographer or as a radiation therapy technologist after the defendant's license has been revoked or has expired, the court, or any judge thereof, may enter a decree perpetually enjoining the defendant from further practicing as a [radiologic technologist] radiographer or as a radiation therapy technologist. In case of violation of any injunction issued under this section, the court, or any judge thereof, may summarily try and punish the offender for contempt of court. [Such] The injunction proceedings shall be in addition to, and not in lieu of, all penalties and other remedies provided in this chapter."

SECTION 14. Chapter 466J, Hawaii Revised Statutes, is

amended by adding a new section to be appropriately designated and to read as follows:

"**§466J- Transition; radiologic technologists and radiographers.** By July 1, 1990, the director shall issue licenses to practice radiography to those persons who were licensed as radiologic technologists under this chapter prior to the effective date of this Act. A person licensed as a radiologic technologist under this chapter prior to the effective date of this Act, shall be permitted to practice radiography without a radiographer's license until June 30, 1990; provided that the person's license to practice as a radiologic technologist is not revoked or suspended by the department."

SECTION 15. Statutory material to be repealed is bracketed. New statutory material is underscored.

SECTION 16. This Act shall take effect upon its approval.

INTRODUCED BY: _____