The History of The American Registry of Radiologic Technologists

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Dedication

The accomplishments of the ARRT are due to the many dedicated individuals who have served the ARRT as members of the Board of Trustees, members of consultant committees, as registrants of the ARRT and as ARRT staff. It was impossible to mention in this history of the ARRT all those who have played significant roles in the advancement of the profession's certification organization. This is particularly true of those having taken major leadership roles in recent years. It can only be hoped that a future version of the ARRT history will be able to acknowledge their contributions after the years provide appropriate perspective.

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Introduction

On November 8, 1895, William Conrad Roentgen, professor of physics at the University of Wurzburg, Germany, discovered and described x-rays. According to Eisenberg, the first clinical application of x-rays in the United States took place at Dartmouth College on February 3, 1896. That same year, advertisements began to appear for "roentgen studios" offering both medical x-rays and x-ray photography. Since radiography was initially considered a new specialty in the field of photography, many of the workers who were actually engaged in making radiographs were photographers or physicians who practiced photography as a hobby. By the early nineteen hundreds, the need for specialized medical practice in x-rays was becoming apparent. Surgeons and other physicians who earlier had used x-ray in their practices began to find that they simply did not have time to become proficient in x-ray while maintaining their general practice. They began referring patients to physicians who had elected to specialize in making and interpreting radiographs and performing fluoroscopic examinations. In time, these radiologists became too busy interpreting radiographs and fluoroscopic shadows to spend time manipulating the cumbersome equipment. They began to employ nurses or technical assistants to make the exposures.

America's involvement in the first world war escalated the demand for both radiologists and technical assistants. According to Lauer, in 1917 the U.S. Army Medical Corps established short, intensive educational programs to train medical officers as "roentgenologists" (radiologists) and enlisted men as "manipulators" (technicians). Two manipulators were trained for every one roentgenologist. In 1918, twenty-five roentgenologists and fifty manipulators were being trained each month at Camp Greenleaf, Georgia.

When the war ended, some Army trained technicians joined their civilian trained counterparts in seeking careers in the growing x-ray field. Most postwar technicians were employed under the supervision of medical doctors. However, some went into business for themselves operating x-ray laboratories. These laboratories were becoming a matter of great concern to physicians as the 1920's approached.

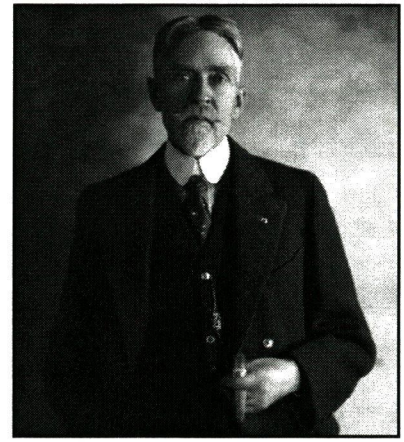
Chapter One
1920~1929

Overview

The '20's would see the creation of the first national professional organization for x-ray technicians, the appointment of the first x-ray technician registry board and staff, the administration of the first competency examination and the certification of the first registered technician. It would also see the adoption of the new registry's official emblem. The Registry would end the decade with 643 certificates in good standing.

1920

According to Hoing, twenty-five years after Roentgen's discovery, a group of 13 technicians from nine states of the union and one province of Canada met with Ed C. Jerman at the Victor X-Ray Company in Chicago for the purpose of organizing a society of x-ray technicians to be known as The American Association of Radiological Technicians (AART), forerunner of the American Society of Radiologic Technologists. Mr. Jerman was elected as the first President of the AART. In founding the AART, Ed Jerman advocated development of a professional code of ethics among technicians and high ideals of loyalty to the profession and to radiologists. Many radiologists voiced their approval of that organization. In 1920 the Radiologic Society of



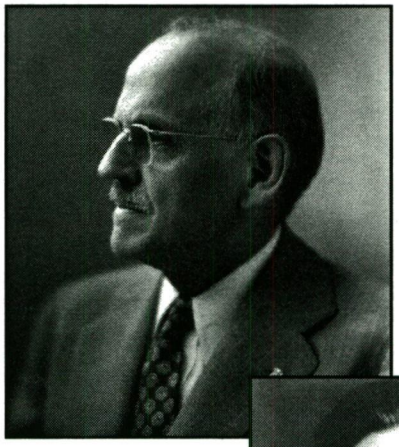
Ed. C. Jerman

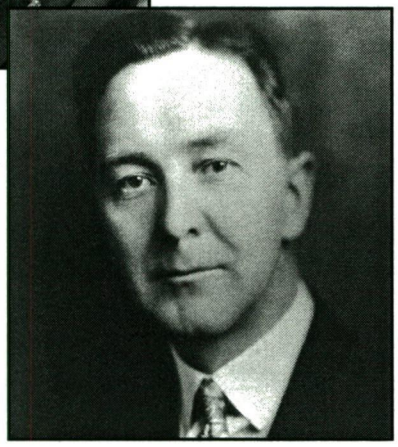
North America (RSNA) and the American Roentgen Ray Society (ARRS) were the two main professional organizations for radiologists. The ARRS was the senior of the two, having been established in 1900. According to Eisenberg, the ARRS was considered an Eastern organization and the RSNA had been formed in 1915, primarily as an organization of radiologists in the Western states who had felt left out of the ARRS. At the annual meeting of the RSNA in 1920, a committee recommended the establishment of a registry for the purposes of certifying technicians meeting certain qualifications. The leadership of the RSNA felt that by establishing standards of education, experience and ethics as well as a scope of practice for technicians and recognizing, through certification, those meeting the standards, lay interference in the practice of radiology could be reduced. However, not all radiologists were happy about the prospect of certifying technicians. Many felt that technicians would use their certification as a bargaining chip in wage negotiations. Despite some opposition, the RSNA voted in December, 1920 to proceed with the plan to certify x-ray technicians and recommended that the ARRS be invited to participate. The participation of both radiological organizations in a plan for the certification of technicians was a clear indication that the registry was intended to be national in scope. Interestingly, while some medical groups developed the technician certification function within the professional society, in the radiological sciences the technician's professional society (AART) and the certification organization were developed separately.

1922

Committees of the RSNA and the ARRS, working jointly, presented a plan to be set in operation immediately. The new organization would be named The American Registry of Radiological Technicians (ARRT). The chief reasons for the establishment of the Registry would be to "raise the ideals of this class of medical technicians, to recognize the value or worth of their service, and in the end to prevent frauds and deceptions on the public."

The original Registry Board consisted of Edward W. Rowe, M.D. of Lincoln, Nebraska, President; Byron C. Darling, M.D. of New York, New York, Vice President; and Benjamin H. Orndoff, M.D. of Chicago, Illinois. Mr. H.S. Tyler of Omaha, Nebraska, brother of RSNA President A.F. Tyler, acted as Executive Secretary.





Above: Edward W. Rowe, M.D. First President of the ARRT

At right: Benjamin H. Orndoff, M.D. Member of the original Board

Ed Jerman was appointed Examiner. Jerman was the logical choice for that position. According to Hoing, he had been associated with the Victor X-Ray Company (which later became the General Electric X-Ray Company) since 1917 and had been a pioneer in the advocation of proper training for technicians. At Victor he had developed an educational program through which a highly specialized group was trained so that the medical profession might receive the benefit of the results of his many years of effort to perfect all phases of radiological technique.

The Registry's first official address would be 305 Arthur Building, Omaha, Nebraska, home of the Radiological Publishing Company where the Tyler brothers published RADIOLOGY, the official journal of the RSNA.

By the Fall of 1922, the Registry was up and running. Rules and Regulations, eligibility requirements, application forms and examination materials had been printed. The requirements stated that "applicants shall be twenty-one years old, male or female. They shall have the equivalent of two years high school education and that of a trained nurse. They shall have served as x-ray technicians at least two years under direct medical supervi-

sion, counting their bona fide training period. The Rules defined "equivalent of a trained nurse" as "a technician, male or female, who has served at least two years under medical supervision." The application form required information about age, education, experience, plus a physical description including height, weight and a photograph. The names and addresses of three physicians, preferably radiologists, were required for references. The applicant was also required to sign the following agreement:

> "I hereby agree to work at all times under direct medical supervision, and under no circumstances to give out written or oral diagnosis or work independently, whether in any private hospital or institutional laboratory."

An application fee of $10.00 was payable at time of application. The examination consisted of two parts, a practical examination of ability and a written examination. The practical examination consisted of a prescribed set of radiographs made by the examinee. The radiographs were submitted to the Registry office with the application forms. The written portion consisted of 20 essay type questions. The written examination was administered by a radiologist designated by the Board. After administration, the essay questions were sent to Examiner Jerman for grading. The applicant had to answer 60 percent of the questions correctly to pass the examination. Jerman also evaluated the radiographs, presumably on a pass/fail basis. It was necessary to pass both the written and practical portions to pass the total examination. Those who passed would be registered for one year and would have to pay a $1.00 yearly re-registration fee to remain in good standing thereafter.

The first technician certified by the ARRT was Sister M. Beatrice Merrigan of St. Anthony's Hospital, Oklahoma City, Oklahoma. Sister Beatrice took the examination on November 17, 1922. Her examination was graded by Ed Jerman on December 10, 1922 and she was notified of her certification by letter dated December 26, 1922 from Executive Secretary H.S. Tyler.

Sister M. Beatrice Merrigan, R.T.
First Registered Radiographer
(Shown here in 1970 photo)

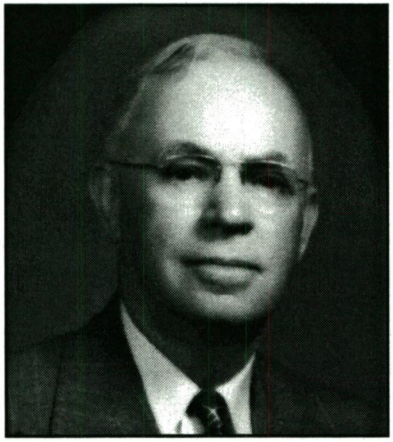
1923

In December, the Registry acted to arrange

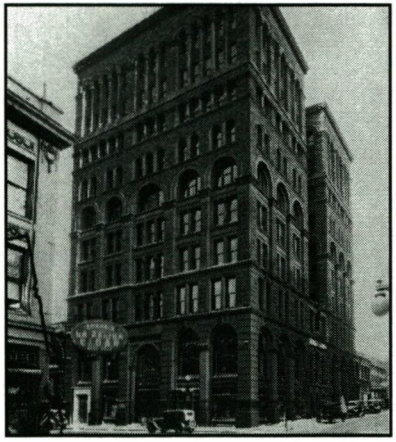
a change in the office of the Executive Secretary from Omaha to St. Paul, Minnesota. That move was the end result of a dispute between the RSNA and the Tyler brothers over control and ownership of *Radiology*. The courts found for the RSNA and publication of *Radiology* was transferred by the RSNA to the Bruce Publishing Company of St. Paul. Mr. J.R. Bruce, President of Bruce Publishing, replaced H.S. Tyler as Executive Secretary for the ARRT. Unfortunately, the former Executive Secretary refused to relinquish his records and continued to arrange for examination of applicants for registration.

1924

In June, records consisting of correspondence and applications only were relinquished by Mr. Tyler to the St. Paul office. Many valuable records were



J.R. Bruce
ARRT Executive Secretary 1923-1933



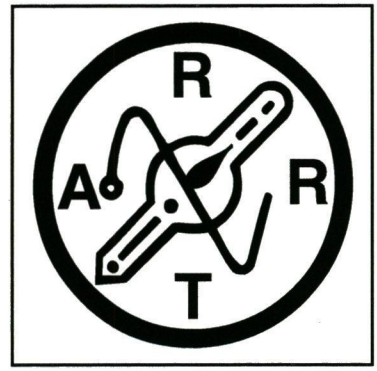
Guardian Life Building, St. Paul
Registry's Home 1923-1926

presumed to have been lost or misplaced in the move from Omaha to St. Paul. However, 1924 ended on a high note when the new Executive Secretary reported to the Registry Board at its December meeting that a system for recording applications and arranging for examinations had been established and that registration of technicians had more than doubled in volume within the year.

1926

The AART voted to invite only registered technicians to become members of the professional society. That same year, the Registry voted to continue

having three regular members on its Board and to continue the services of Mr. Jerman as Examiner and Mr. Bruce as Executive Secretary. The Board also adopted an official insignia to be made a part of the letterhead and to be made available, at cost, to registered technicians in the form of a pin. Unfortunately, the identity of the emblem's designer is no longer known. The emblem consisted of representations of a Roentgen-ray tube and a sine wave. Alternating currents and voltages follow the changing values represented by the sine wave. Two alterations were shown, thus forming a complete cycle. The initials of the organization completed the emblem.



Original ARRT emblem, 1926

1927

The future of the Registry seemed promising given the results of a survey of radiologists which indicated a ten to one vote in favor of continuation of the Registry. A head count and analysis of registrants conducted that year showed 432 registrants of whom 80 (18%) were men and 352 (82%) were women. Of the women, 64% were nurses and 43% were Catholic sisters.

2429 University Avenue, St. Paul Registry's Home 1926-1932

1928

The Rules and Regulations of the Registry were revised to make the Rules more clear and give a definite understanding of the exact status of the registered technician. The method of renewal was also changed. Prior to that time,the seal on the certificate had been replaced annually with a new seal signifying the year upon payment of the renewal fee. Beginning this year

only one seal was issued, that on the original certificate, and the renewal record of each technician was made on a card bearing the renewal year and the original date of the certificate. The card was intended to acknowledge the payment of the renewal fee and also to indicate that the technician whose name it bore was in good standing for that year. That same year, Jerman published his *Modern X-ray Technic*, the seminal x-ray technology text which would remain a valued reference for several decades.

1929

In July, the first issue of the journal *The X-ray Technician* was published by the AART. It contained a section devoted to the Registry, a tradition that would continue with brief interuptions through the present time.

By the close of the '20's, the activities of the Registry had fallen into a steady routine. Individual Board members continued to review the applications. Examinations were still being administered by physician volunteers at or near the examinee's place of employment. Mr. Jerman was still grading all examinations personally. Mr. Bruce continued to conduct the business of the Registry along with his other work which included publication of *The X-ray Technician* for AART and *Radiology* for RSNA.

Chapter Two
1930~1939

Overview

The '30's began as a time of economic depression for the Registry as well as for the nation as a whole. However, the decade would later witness a renaissance in the organization resulting in radical changes including reorganization and incorporation of the Board, technician representation on the Board, a full time, salaried Executive Secretary, change of name and a new business address. It would also see the emergence of group examinations and the beginnings of a process for the accreditation of x-ray technology training courses. The count of certificates in good standing would grow to 2404.

1930

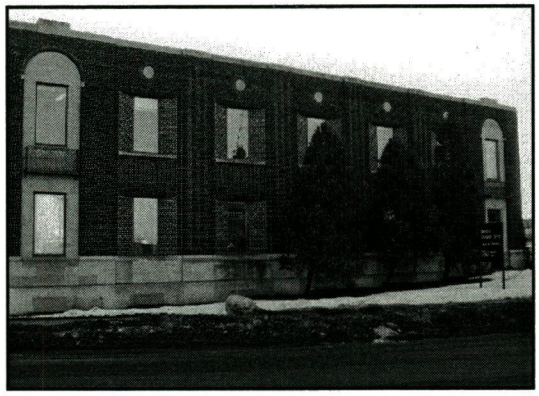
Ed Jerman resigned as Examiner due to failing health. Subsequently, the RSNA appointed a fourth radiologist to the Board and the Examiner's duties were parceled out among the Board members. That year the AART changed its name to the American Society of Radiographers (ASR). According to Hoing, the change was made to avoid confusion of its organization with the ARRT.

1932

Jerman was invited to attend ARRT meetings to serve as a liaison between the ARRT Board and the ASR Board. Finances were becoming a problem for the Registry. Financial assistance from the RSNA, which had previously been provided, was curtailed. Income from renewal fees had dropped because the general national economic distress had resulted in lowering of technician's salaries and loss of jobs making it impossible for many to pay their renewal fees. The number of paid registrations had dropped from 886 in 1931 to 788 in 1932, a decrease of nearly nine percent.

1933

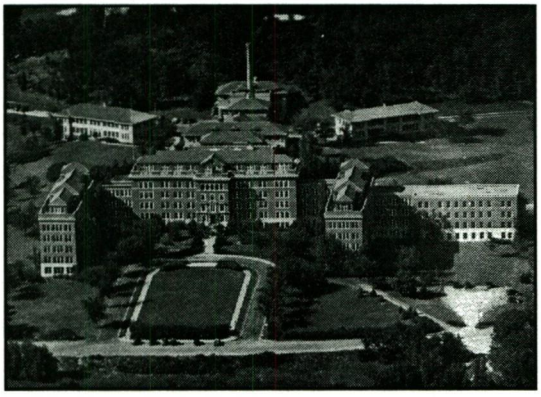
The Registry paused to take stock of itself. Robert Arens, M.D., President of the Board, aided by his associates on the Board; Drs. Jackson, Podlasky and Pohle, made a survey of the Registry and its activities. Although the application fee was $10.00 and the renewal fees had been doubled to $2.00 per year, the Registry was not breaking even financially. Over the country at large, the prestige of the Registry was beginning to fail partly due to problems with the examination procedures, the lack of meaning to the annual renewal routine and the laxity in maintaining the ethical standards which the certificates of registration were supposed to represent. Application requirements were loose. No references were required other than the physician's signatures on the application form. The written sections of the examinations were supervised by any available local physician, usually the applicant's own employer. The examination questions had become well worn. Five sets of questions of five questions each had been used over a period of years until complete copies of all questions could be secured by anyone prior to taking the examination. Renewal of registration consisted of sending in a fee and receiving a card. No attempt was being made to see whether



2642 University Avenue, St. Paul
Registry's Home, 1933

Alfred B. Greene, R.T.
Executive Director, 1934-1965

or not registered technicians were living up to the agreement they had signed when they first applied for examination for registration. There continued to be confusion between the American Registry of Radiological Technicians and the American Society of Radiographers. Ed Jerman's health continued to fail until he was unable to continue his work as liaison between the Society and the Registry. He was replaced as liaison by Alfred B. Greene, R.T., Secretary-Treasurer of the Society and editor of *The X-ray Technician*. Greene had come to the profession in a round-about manner. After service in World War I as a tank commander in France he had returned to the United States and enrolled in the University of Minnesota, receiving a B.Sc. degree in electrical engineering in 1924. Shortly after graduation, Greene had fallen ill with tuberculosis and was confined to the Glen Lake Sanatorium, a 700 bed county tuberculosis institution at Oak Terrace, Minnesota. While confined as a patient at Glen Lake he began to make himself useful in the x-ray department and was hired as an apprentice technician in 1929. He passed the ARRT examination for registration in 1932 and became senior technician in charge of the Glen Lake x-ray department in 1933.



Glen Lake Sanatorium
Registry's Home, 1934-1942

Nearing the end of 1933, the Registry Board realized that something had to be done to revitalize the Registry. Special meetings were held and a program of renaissance begun. The Board voted to hire Mr. Greene in the part-time position of Executive Secretary effective January 1, 1934. The Registry office would move to donated space at the Glen Lake Sanatorium where Mr.

Greene would continue to hold his full-time job in the x-ray department as chief x-ray technician.

1934

Believing that Mr. Greene could run the Registry office in a streamlined manner with a corresponding reduction in cost, the Board gambled on reducing the application fee to $7.00 and the renewal fee to $1.50 to make participation affordable to more technicians. Drastic changes were also made in the application and examination procedures. Physicians whose signatures appeared on a candidate's application would be contacted for a written endorsement. Specific requirements were established for preliminary education and x-ray training. The old examination questions were discarded and a new master list compiled, which consisted of several hundred questions, each one carefully selected and considered both for its content and its understandability by the applicant. From the master list, new sets of questions were selected for each new group of applicants, making it unlikely that any two groups of examinees would have exactly the same examination. The new examinations consisted of ten groups of three questions each, the applicant having a choice of two questions out of each three, making a total of 20 questions to be answered. Because of the nature and choice of questions, it was thought practical to raise the passing grade from 60 to 75 percent.

To eliminate the possibility of collusion between examinee and examination supervisor, a rule was adopted whereby the the local supervisor of the written examination was to be a radiologist not associated with the department in which the examinee was employed. The previous practice of making public the actual grades received in the examination was abandoned because of the possibility of creating problems between persons of different seniority working in the same department.

Another important piece of work that had to be done was the updating of all the Registry's old files. An effort was made to contact all the former applicants who had never completed their registrations, and also those who had been certified but had allowed their registration to lapse. Lists were published of all those who could not be contacted by mail. This effort brought scores of technicians back into good standing in 1934, some of whom paid accumulated renewal fees from as far back as 1925.

The Registry had previously ceased replacing certificates yearly but it had not established a way of indicating their current validity. This was corrected by a new renewal process which included not only payment of fees but a signed renewal agreement testifying to the applicant's adherence to ethical tenets. For those not employed and those engaged in other than x-ray work a special form was used to provide the Registry with the data necessary to decide whether the applicant should be carried in good standing. Those accepted for renewal were provided with a dated pocket card and a seal to affix to their certificates. The card indicated whether the technician was a "regular" or "associate" registered technician. Persons in associate status could be given regular status upon presentation of proof of acceptable employment.

In May the Society changed its name again. The American Society of Radiographers became the American Society of X-Ray Technicians (ASXT). According to Hoing, it was thought that the new name would promote greater harmony within the radiological profession and would prevent confusion among the public. The Society began requiring proof of good standing with the Registry as a prerequisite for membership. Therefore, it became imperative for the Registry to place limits on how long a registrant could remain behind in payment of renewal fees before being dropped from good standing. Consequently, a new rule was implemented under which three months grace would be allowed following the January 1 renewal date, after which the individual would be dropped from good standing. If the individual did not apply for reinstatement within two years of delinquency he or she would be dropped from the rolls altogether and could thereafter be reinstated only by making a new application and retaking the examination.

Thus, with the new era, the files of the Registry became clearly classified as to who was in good standing, those in arrears, those dropped, lost to mail contact, resigned, deceased and those with incomplete registrations. The success of the Registry's renaissance was apparent from its financial report for 1934 which showed an end of year balance of $500.00 as compared to a reported loss of $500.00 in 1933.

1935

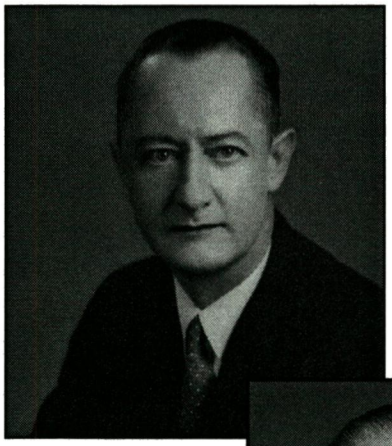
There was considerable discussion about the legal relationship between the

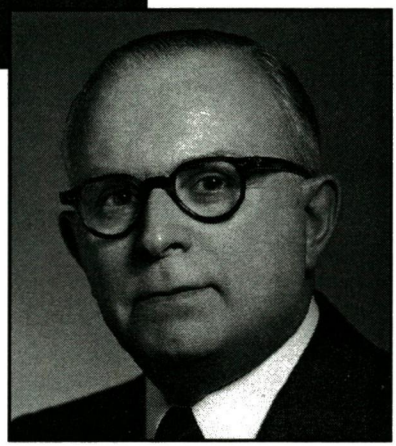
Registry and the RSNA. Since Board members were appointed by the RSNA, the Registry was technically one of its committees and as such was subject to their jurisdiction. The parent body was in turn legally responsible for any acts of the Registry Board. The RSNA was unwilling to retain this legal responsibility. It became incumbent upon the Registry Board to establish its independent legal status.

1936

The Registry Board, with Ernst A. Pohle, M.D. as President and David S. Beilin, M.D., George M. Landau, M.D. and Leo G.Rigler, M.D. as Trustees, considered all angles of the situation and weighing the advice they had received, decided that from every viewpoint the most workable plan was the incorporation of the Registry as an independent organization with the RSNA and the ASXT as joint sponsors.

The new plan called for a Board of six members; four to be selected from the membership of the RSNA and two from the ASXT. The former were to serve four years each, a new appointment to be made each year, while the Trustees from the ASXT, also appointed one each year, would serve two-year terms.



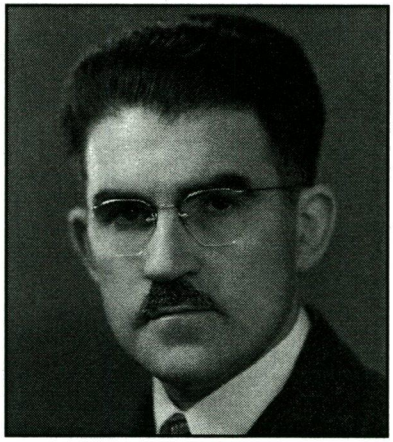


Above: Ernst A. Pohle, M.D. President at the time of Incorporation, 1936

At right: David S. Beilin, M.D. Vice President at the time of Incorporation, 1936

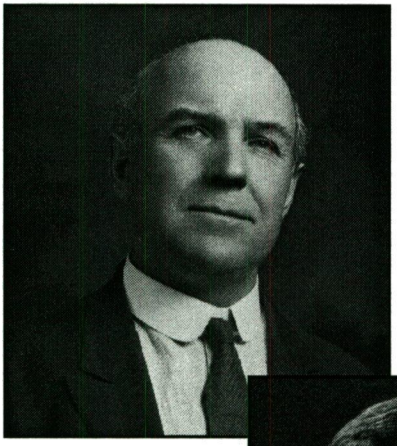
Articles of Incorporation and Bylaws were drawn up and the new corporation came into being at a special meeting in Chicago on June 24, 1936. Officers of the Corporation were elected as follows: President Ernst A. Pohle, M.D., professor of radiology at the University of

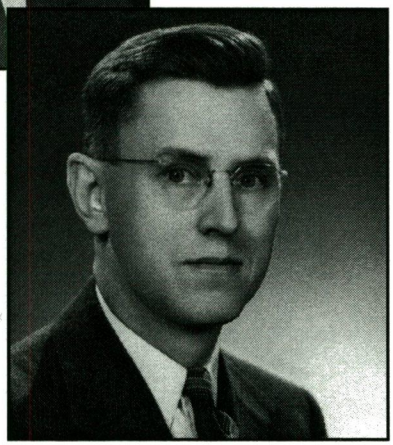
George M. Landau, M.D.
Secretary-Treasurer at time of Incorporation, 1936



Leo G. Rigler, M.D.
Trustee at time of Incorporation, 1936

Wisconsin; Vice President David S. Beilin, M.D., radiologist at Augustana Hospital, Chicago; Secretary-Treasurer George M. Landau, M.D., radiologist at Chicago Memorial Hospital; and Trustee Leo G. Rigler, M.D., professor of radiology at the University of Minnesota. The Trustees appointed by the ASXT were Thomas W. Lough, R.T. of Seattle, Washington, and Roy E. Wolcott, R.T. of Champaign, Illinois, to serve for one and two years, respectively. Alfred B. Greene, R.T., of Glen Lake Sanatorium, Oak Terrace, Minnesota was retained as Executive Secretary.





Above: Thomas W. Lough, R.T. Original Technologist Trustee, 1936

At right: Roy W. Wolcott, R.T. Original Technologist Trustee, 1936

Lough and Wolcott were true pioneers in radiologic technology. Wolcott held Registry certificate #10 and had trained under

Ed Jerman at the Victor X-Ray Company. Lough was a charter member of the nation's first x-ray technician society. He was registered in 1925 and was serving as ASXT President when appointed to the Registry Board. He was the first of over two dozen past Presidents of the ASXT who would serve on the Registry Board of Trustees.

Many changes were necessary to establish the new corporation as the Articles of Incorporation specified. One important change was in the name. Prior to its incorporation, the Registry had been known as the American Registry of Radiological Technicians. It was incorporated as the American Registry of X-Ray Technicians (ARXT). A new certificate was designed to be issued to the newly registered technicians. However, the old certificates retained their validity and could be exchanged for new ones as the holders wished. The name change was consistent with a previous action of the Society which, in 1934, had changed its name from the American Society of Radiographers to the American Society of X-Ray Technicians. To better coordinate the purposes and programs of the two organizations, the start of the fiscal year of the Registry was changed from January 1 to July 1 to coincide with the fiscal year of the ASXT. This would permit the annual meeting of the Registry to be held in conjunction with the annual convention of the Society. However, the calendar year was kept as the year for Registry renewal purposes. The first meeting of the Registry Board in which the Society was represented by two appointees to the Board was held on November 27, 1936 in Chicago.

1937

The first joint meeting of the ARXT and the ASXT was held in Denver, Colorado in July. Al Green would later write, "These joint meetings have done more to cement the bond of loyalty between technician and radiologist than any other project the Registry could have undertaken."

The classification of associate registered technician was abolished and registration on an equal basis was granted to all technicians whether employed by radiologists or nonradiologists, provided that the latter were Doctors of Medicine (M.D.s) in good standing. This excluded from registration those employed by osteopaths, chiropractors and other practitioners who were not M.D.s. The classification of "affiliated registered technician" was retained to allow the renewal of certificates of technicians who fulfilled all

requirements except that of direct medical supervision and who were engaged in x-ray work solely on behalf of distributors of x-ray equipment or accessories. The Registry began to accredit training courses for x-ray technicians. It announced that: "Any radiologist who is a diplomate of The American Board of Radiology, who conducts a course of training for x-ray technicians of not less than one year, and in connection with hospital facilities of not less than one hundred twenty-five beds; and whose course otherwise complies with the requirements of the Registry Board, may apply to said Board to have such course placed on the Approved List."A list of 20 accredited training courses was published in the October, 1937 issue of *The X-ray Technician.*

1938

In January the Board voted to allow technicians with ten or more years of actual technical experience to apply for registration regardless of their high school education provided that their other qualifications were adequate. Subsequent experience showed that this group demonstrated a higher percentage of passers than any other class of applicants.

The Board considered its relationship to the Committee on Education and Registration of the ASXT and voted to empower that Committee to act as liaison between the ARXT Board and the training school radiologist with authority to furnish information on the Registry's training course requirements. This marked the beginning of a long period of cooperation between the Registry Board and the group which eventually would evolve into the ASXT Committee on Education.

The Board also took official notice of the emergence of a trend toward state regulation of technicians. It noted that the Registry, as a corporation, had a legal right to grant a certificate but that the certificate had no legal weight as far as the regulation of technicians by state law was concerned. It was the opinion of the Board that state control was on the way and that the Registry should take steps to find a place for itself if the trend continued. That opinion would prove to be prophetic, although somewhat ahead of its time.

In April the Board moved to require that applicants be required to be United States citizens or have applied for first papers. It was noted that citizens of Canada applying for registration with the ARXT would not be subject to this

rule since their place of occupation was in Canada.

The Board discussed procedures for conducting group examinations at annual meetings. The first group examination for registration of x-ray technicians was held in Madison, Wisconsin in June, 1938 in conjunction with the 13th Annual Meeting of the American Society of X-Ray Technicians. Also in June the Registry Board began a series of discussions with the American Medical Association (AMA) with the objective of having the AMA recognize training courses for x-ray technicians.

In November the Board passed a resolution to amend the Registry Bylaws to prohibit registrants from owning x-ray equipment.

1939

In June the Board discussed the licensure of x-ray technicians by the state of Kentucky. It was the sentiment of the Board that the Registry should propose that Kentucky accept the Registry examination as equivalent to the state licensing requirements but that the Registry would not accept the Kentucky licensing examinations in lieu of routine registration with the ARXT.

At its September meeting the Board voted to add a clause to the agreement which applicants signed on the application blank to the effect that they agreed not to own or share ownership in x-ray equipment.

The Board also voted to end the "ten year" rule under which applicants with ten years experience but lacking a complete high school education had been allowed to take the examination for registration. The Board ruled that this provision would be in effect only until July 1, 1942.

Chapter Three
1940~1949

Overview

Although clouded by World War II, the '40's were a time of continued growth for the Registry marked by several significant events including elevation of the position of executive secretary from a part-time to a full-time basis, relocation of the Registry office, change in sponsoring radiologist organizations, appointment of the first female trustee to the Registry Board and a general upgrading of eligibility requirements. During this period the Registry would get out of the school accreditation business and enter the arena of curriculum development. The count of certificates in good standing would grow to 6445 by the end of the decade.

1940

In July the Registry published new qualifications of applicants for registration which read as follows:

> "Applicants for Registration shall be citizens of the United States or, if foreign-born, shall have taken out First Papers for citizenship. Citizens of Canada may apply for Registration providing they are employed in Canada.
>
> Applicants shall not be less than twenty-one nor over fifty years of age; may be male or female; must be of good moral character; and shall have had a high school

education, or the equivalent thereof, as evidenced by certificates approved by the ARXT Board of Trustees. All applicants shall have had at least two years experience, including training, in x-ray departments acceptable to the Board of Trustees.

Any x-ray technician having ten or more years of actual experience, but unable to fulfill the requirements as to age and education as outlined above, may submit an application for Registration which may be accepted at the discretion of the Board of Trustees. This provision will expire on July 1st, 1942.

X-ray technicians owning, or sharing ownership of x-ray equipment actively in use for radiographic or therapeutic purposes are not considered eligible for Registration.

The Registry Board may also reject the applications of technicians employed in an institution declared unethical by medical organizations; or who are employed under the direction of physicians or radiologists not members of local or national medical organizations.

The Board of Trustees may adopt other Rules and Regulations from time to time defining more specifically the foregoing qualifications."

1941

In June the Board voted to change requirements for examination for registration effective July 1, 1942. Under the new requirements, the two years of training plus experience required for registration had to be under the supervision of a recognized radiologist. The time spent in training and experience under a non-radiologist would be counted as only half value to that spent under a radiologist, and interpolated accordingly in determining an applicant's eligibility for registration.

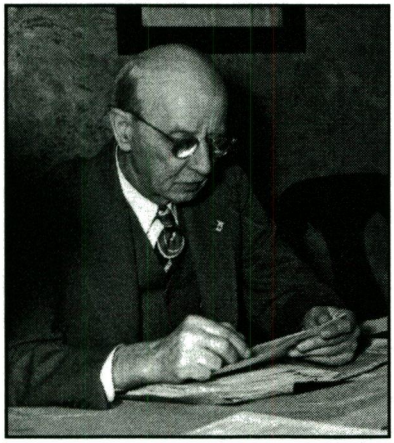
1942

The Board reviewed the three month training program for x-ray technicians being conducted by the U.S. Army at Fitzimmons General Hospital in Denver under the direction of Trustee-elect Kenneth D.A. Allen, M.D. and determined that the program was so intensive that it could be considered equivalent to an approved twelve month civilian program. Therefore, technicians who completed that program or a comparable program conducted by the Army or Navy could qualify for Registry examination after twelve months added experience in an x-ray department supervised by a recognized radiologist. That ruling provided the only exception to the established requirement for two years of training and experience.

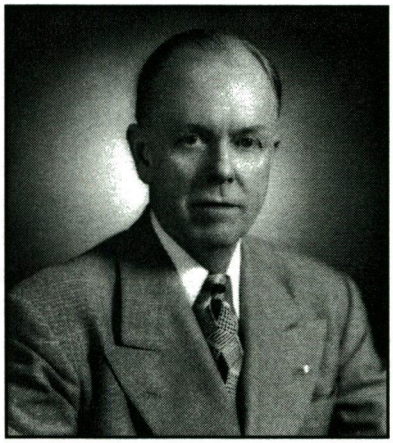
At the November meeting of the Board, Executive Secretary Alfred B. Greene, R.T., announced that he was resigning his position at the Glen Lake

Sanatorium to devote his entire time to the duties of the Registry. The Registry office had been operating out of donated space at Glen Lake since 1934 when Greene became Executive Secretary. Initially the Sanatorium had provided the Registry with an unfinished subterranean room consisting of three dirt walls and a dirt floor covered with a steel grate. Later, the institution had donated space in an abandoned elevator shaft which was shared with the out-patient department. By 1942 the Registry operations had grown to the point where additional space and a full time executive were required.

In December the Registry Board reconvened to consider a proposal to transfer the sponsorship of the Registry from the RSNA to the American College of Radiology (ACR). The Registry Board believed that the ACR would be a more appropriate sponsor of the Registry than the RSNA. The Board heard evidence that the RSNA was willing to relinquish sponsorship and that the ACR was willing to assume it. The Board enacted a resolution approving the change in sponsorship and drafted an amendment to the Registry Bylaws to be submitted to the Directors of the RSNA and to the Executive Committee of the ASXT. The amendment was subsequently submitted to and approved by both the RSNA and ASXT. The four radiologist trustees submitted their resignations as RSNA representatives on the Registry Board and were subsequently appointed by the ACR as its representatives. The first ACR appointees to the Registry Board of Trustees were John M. Keichline, M.D. of Huntington, Pennsylvania; Kenneth D.A. Allen, M.D. of Denver, Colorado;



John M. Keichline, M.D.
One of the first four Trustees
appointed by the ACR



Kenneth D.A. Allen, M.D.
One of the first four Trustees
appointed by the ACR

Warren W. Furey, M.D.
One of the first four Trustees
appointed by the ACR

Darmon Rhinehart, M.D.
One of the first four Trustees
appointed by the ACR

Warren W. Furey, M.D. of Chicago, Illinois and Darmon A. Rhinehart. M.D. of Little Rock, Arkansas. The ASXT would continue as a co-sponsor of the Registry. Its representatives on the Board at that time were Roy W. Wolcott, R.T. of Champaign, Illinois and Walter S. Andersen, R.T. of St. Louis, Missouri.

1943

On January 1st the Registry's official address became 2909 Raleigh Avenue, Minneapolis 16, Minnesota, the address of the suburban bungalow where the Executive Secretary rented a small apartment.

In March the ASXT asked the Registry to consider an amendment to the ARXT Bylaws to provide for an increase in the representation of the Society on the Registry Board of Trustees. The proposal was discussed but action was postponed to a later date when the sponsorship of the Registry by the ACR had taken effect and future policies could be foreseen.

2909 Raleigh Avenue, Minneapolis
Registry's Home, 1942-1945

On May 6th the American

College of Radiology officially replaced the Radiological Society of North America as co-sponsor, with the American Society of X-Ray Technicians, of the American Registry of X-Ray Technicians.

Later that year Erminda R. Clarke, R.T. of Lincoln, Nebraska was appointed to the Registry Board by the ASXT. Although the vast majority of registered technicians and members of the ASXT were women, Ms. Clarke was the first female to serve on the Registry Board of Trustees.

Erminda R. Clarke, R.T.
First Female Trustee

1944

The Registry withdrew from the school accreditation business by turning over the inspection, approval and listing of training courses to the Council on Medical Education and Hospitals of the American Medical Association. This was the culmination of a five-year effort by the Registry to get the AMA to accredit schools of x-ray technology.

1945

It became necessary for the Registry office to be moved again because the Registry's space requirements had outgrown Mr. Greene's apartment. Mr. Greene rented a large house in Minneapolis and moved the Registry office onto the second floor. The Registry's official address became 2900 East Minnehaha Parkway Minneapolis, 6, Minnesota. Mr. Greene subsequently purchased the house and the Registry office would be his second floor tenant for the next nine years.

2900 East Minnehaha Parkway, Minneapolis
Registry's Home 1945-1954

1946

At its June meeting, the Board passed a resolution to amend the Bylaws to require that applications for examination be signed by the applicant's employer, the radiological supervisor, and by the counselor appointed by the ASXT in the state from which the application originated. Previously, applications had to be signed by four references: employer (medical supervisor), radiologist in charge of the department and two other radiologists. At that meeting, which was held in conjunction with the annual meeting of the ASXT, the Board was privileged to attend the first annual Jerman Memorial Lecture dedicated to the founder of the ASXT who also had served as the Registry's first examiner. The lecture entitled "Radiographic Study of Anatomic Sections" was delivered by H.O. Mahony, R.T., one of Jerman's early students.

1947

The Board instructed the Executive Secretary to prepare a tentative curriculum for accepted training schools to be recommended for general use to standardize approved training. The Board also voted to upgrade eligibility requirements effective July 1, 1951 to require that at least one year of the two years of required training or experience be under the direction of a diplomate of the American Board of Radiology or a recognized radiologist of equal qualifications regardless of the amount of time spent working for a non-radiologist.

1948

The Board enunciated its policy on state licensing and state registration by declaring that no direct action would be taken by the Registry in cases involving attempts to establish state licensing but that circumstances requiring action would be referred to the ACR, the Advisory Committee of Radiologists to the ASXT and to local radiological societies. However, the Board went on record as being opposed to state licensing and state registration of x-ray technicians.

1949

The Board reviewed the nature and purposes of G.E.D. tests and agreed that the passing of a G.E.D. test be accepted as the equivalent of high school

education whether or not an applicant was eligible to receive a high school certificate or diploma under state rules. The Board also adopted a resolution to amend the Bylaws to remove all age restrictions on candidates for registration.

Chapter Four
1950~1959

Overview

The "fabulous '50's" will be remembered as the decade of the educator on the Registry Board. It saw the emergence of a new generation of education-oriented leaders from both sponsoring organizations which led to an era of unprecedented cooperation between members and committees of the ACR, ASXT, AMA and the ARXT. It saw increased technician representation and influence on the Board, greater involvement of the Registry in the formal education of technicians, a tightening of educational requirements and a modernization of the Registry's systems for examination construction, administration, grading and reporting. The multiplicity of new activities necessitated increased delegation of authority and responsibility to the Registry office and the elevation of Mr. Greene's position from Executive Secretary to Executive Director. It also necessitated the movement of the office from Mr. Greene's house into a downtown office building. During this decade the Registry also assumed an international role by implementing reciprocity agreements with two foreign credentialing agencies and issuing its first policy statement on unionization of x-ray technicians. The number of registrants would more than triple to a total of 22,481 certificates in good standing at the end of fiscal year 1958-59.

1950

About 1000 new applications for examination were being received at the Registry office each year. They were recorded and scrutinized by Registry staff and then sent in batches of ten or twelve to individual Board members for approval or disapproval. A rotating system was used and two Trustees would see each batch. If disagreements or other problems occurred, applications would be held for discussion by the entire Board at its next meeting. Examination grading was handled in a similar manner. The state-of-the-art examination was in two parts, written and practical. The written portion consisted of 22 essay-type questions. The practical part consisted of 9 radiographs produced and submitted by the examinee. The written examinations were sent in batches to individual Trustees for grading. The Trustee who graded each batch was designated the "examiner" for that particular batch. The Executive Secretary graded the radiographs.

At its May meeting the Board considered a recommendation for registration of technicians engaged in therapy work only. It was pointed out that the chancellors of the ACR were on record as being opposed to any special classifications. The Board decided that the time had not arrived when action should be taken on this suggestion.

At that meeting the Board was informed that the Registry office had again outgrown its available working space. It voted the expenditure of $3500 to construct a dormer off the second floor of Mr. Greene's home to provide the needed expansion space.

In the summer of 1950, A. Bradley Soule, M.D. of Burlington, Vermont joined the Board. Soule had served as advisor to the ASXT Education Committee and was a strong advocate of the hospital-based training program, believing it to be the only sure way for a financially disadvantaged high school graduate to get an education leading to a career in the allied health sciences. In the years to come Soule would prove to be a true friend of the technician and his influence would continue long after his four years on the Registry Board.

1951

At its June meeting the Board discussed the merits of an objective-type examination consisting of true-false, matching, and multiple-choice questions

and its adaptability to Registry use. It was decided that each Trustee would prepare 25 questions of the multiple-choice type to be studied at the next meeting of the Board. The technician Trustees volunteered to submit additional questions prepared by selected members of the ASXT.

The Board also discussed requests that special classifications be established to permit certification of technicians trained only in x-ray therapy and photoroentgenography. Photoroentgenography was an imaging modality involving still photography of a fluoroscopic screen. It was used primarily in chest survey work and represented a limited scope of practice within the radiography speciality. The Board voted to consider no special classifications at this time.

In December the Board discussed the adoption of a schedule of nationwide group examinations to replace the individual assignments used in the past. It was agreed that routine group examinations would be held in April and November, with exceptions being made when it was desirable to have an examination in connection with a technician meeting. The Board also discussed the objections, both their own and others, to the existing type of Registry examination. It was voted unanimously to adopt an examination consisting in part of objective-type questions, the remainder to be of the essay type. A ratio of 50% objective and 50% essay questions was agreed upon, with no choice of questions being given to the examinee. It was further agreed that more questions pertaining to anatomy, positioning and techniques would be used than formerly, with less than 10% of the total examination being devoted to therapy. A specimen was drawn up to be used in the spring examinations.

At that meeting the Board also considered a proposal for the preparation, in advance, of an acceptable bill for the state licensure of x-ray technicians for use by proponents of state licensing should their efforts to secure legislation reach a stage where passage of an unsatisfactory law seemed probable. It was the opinion of the Board that preparation of such a bill in advance of actual need would contradict, tacitly, the Registry's stand against state licensing. However, a model bill could be prepared later should passage of a bad bill seem imminent.

1952

In May it was announced that the Board of Chancellors of the American

College of Radiology and the Executive Committee of the American Society of X-Ray Technicians had approved a proposed reciprocal agreement between the Canadian Association of Radiological Technicians and the American Registry of X-Ray Technicians and a similar reciprocal agreement between the British Society of Radiographers and the American Registry. In response to a written request for reconsideration of its position on the certification of technicians trained exclusively in radiation therapy, the Board reaffirmed its former stand that until standards had been established for the training of therapy technicians there could be no basis on which to certify them.

1953

The Board again confirmed its earlier stand that until the precepts of adequate training for therapy technicians were defined there would be no basis on which to certify x-ray therapy technicians.

The Board passed a resolution to amend the Bylaws to provide that effective July 1, 1957 at least one year of training in a school approved by the Council on Medical Education and Hospitals of the AMA, or by any organization recognized by the Registry as qualified to approve training schools, be required as a prerequisite to registration. It was ordered that this resolution be submitted to the Board of Chancellors of the ACR and the Board of Directors of the ASXT for approval.

The Board also recommended that the Executive Secretary obtain from educational authorities the proper procedure for grading objective-type examinations in keeping with common practice.

The Executive Secretary reported that the Registry had again outgrown its office space. The growing weight of the Registry's equipment and personnel was beginning to threaten the structural integrity of Mr. Greene's house. The Board authorized the location of rental space in a downtown office building.

At its December meeting the Board noted that the ACR Board of Chancellors had failed to approve the proposed amendment to the Registry Bylaws which would have required all applicants for registration to be graduates of an approved school. The Board agreed that no further action would be taken to promote acceptance of the resolution at this time but that such

a move would have merit after more had been accomplished in the establishment and standardization of schools.

The Board established its firm policy on enforcement of application mailing deadlines. The Board accepted without dissent a ruling that no application for examination postmarked after March 31 would be accepted for the May examinations; and September 30 would be the postmarking deadline for acceptance of applications for the November examinations. The Board agreed to back the Executive Secretary in denying any and all exceptions.

1954

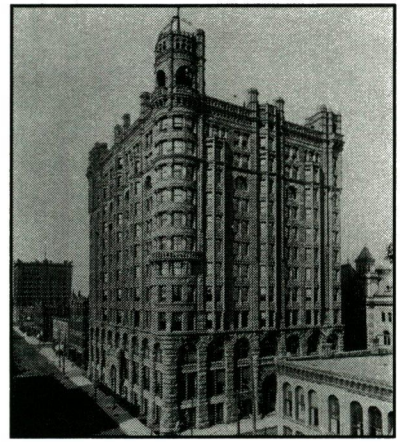
John B. Cahoon, Jr., R.T. of Durham, North Carolina joined the Registry Board of Trustees following three years of service on the ASXT Board of Directors. The previous year his *Formulating X-ray Technics* had been published by the Duke University Press to wide acclaim but not without some controversy. Pre-publication publicity had mentioned the inclusion of "New National Board Questions and Answers" which some readers took to mean that the book contained the Registry examination questions and answers. Cahoon refuted those allegations, explaining that the questions and answers in his book were actually study questions taken from the Duke University course in x-ray technology.

In May the Executive Secretary reported on the mechanism and availability of IBM grading systems based upon machine-readable answer sheets for future use when the volume of examinations indicated such a need. The Board then appointed a committee headed by Chester A. Warfield, M.D. and consisting of Trustees Ray MacInnes, R.T., John Cahoon, R.T., Richard Olden, R.T. and Clark Warren, R.T. of the ASXT Education Committee to work on converting the essay portion of the examination to objective format.

The Executive Secretary reported on the steps being taken to secure registration with the federal government of the term "Registered Technician" and its abbreviation, "R.T.," in the name of the Registry. The Board agreed that changes in wording should be made in the application and renewal forms and that a new certificate should be designed and submitted to the Board for approval. The changes in wording would emphasize the conferring of the right to use the "R.T." on those certified by the ARXT.

Later that year, the Registry office was moved from Mr. Greene's home to a

suite of three rooms on the 11th floor of the Metropolitan Life Building, a circa 1880 "skyscraper" in downtown Minneapolis. For the first time, the Registry did not have to share space with a family or another organization. That move also marked the beginning of the mechanization of the Registry office when the Board authorized the purchase of motor driven printing, addressing and dictation equipment for use in the the new quarters.



Metropolitan Building, Minneapolis
Registry's Home, 1954-1960

1955

At its February meeting the Board compiled and approved new objective-type examination questions and assembled an examination for use at the May 1955 administration with all questions of the multiple choice type. It was agreed that there would be no division of the examination into parts and that a passing grade of 60 would be enforced, subject to revision for later examinations should circumstances so warrant.

At that meeting the Board heard that the American College of Radiology had again expressed opposition to establishing a Registry classification for therapy technicians but favored study and a report from the Registry on a plan for the training and certification of isotope technicians.

At its May meeting the Board heard a presentation by Trustee James Lofstrom, M.D. of a plan for a pilot course for radiotherapy technicians in conjunction with Wayne State University and financed with funds from the American Cancer Society. The Board approved in substance the plan for the pilot course but with the understanding that the Registry would not be mentioned as an official sponsor and would take no official action in regard to it, but would welcome a report on the success of the course as a guide to their future policy regarding therapy technicians.

The Board reviewed the results of the May examinations. Statistics were shown giving the results for those having formal training and for those without, and also a breakdown of the actual grades on each question for all those having had approved training. Lists were provided showing the

grades obtained by the graduates of each individual approved training school. The resulting percentage of failers on that examination was considered to be satisfactory to the Board. It was decided that for the November 1955 examinations 1000 answer sheets would be graded to establish the mean by which a passing grade could be determined. It was stipulated, however, that at no time should the percentage of failers exceed thirty percent.

A special meeting of the Board was held in December for the purposes of amending the Bylaws and transacting some other business. The most important of the Bylaw changes was an upgrading of training requirements which called for at least one year of experience, including training, under the direct supervision of a diplomate of the American Board of Radiology or a recognized radiologist of equal qualifications plus a second year under radiological supervision or two or more years of full-time general medical x-ray experience under the direct supervision of a non-radiologist M.D.

At that meeting the Board established a new policy to cover situations where a student received training successively in two different approved schools. It was the decision of the Board that if the training in the first school was of a recommended nature and the departure from the school was under favorable and approved circumstances that it would be permissible for the training to be split between two schools and full credit given for each. For record purposes, the student would be considered a graduate of the school where training was completed rather than of the school where training was begun.

The Board discussed The American Radiography Technologists (ART), a new organization based in Enid, Oklahoma. The ART was offering examination and certification to x-ray technicians, but did not appear to have the support of any recognized professional organizations.

The Board was informed that the *"Essentials of an Approved Training School for the X-ray Technicians"* as prepared and submitted to the AMA by a joint committee of the ACR and the ASXT had been approved without change or questions by the House of Delegates of the AMA.

The Board discussed the process for evaluating training schools for approval and agreed that the inspection forms should contain material in regard to therapy training and that therapy training in some form should be required

as a prerequisite to approval. This decision was based on the fact that fundamentals of therapy were a part of the basic curriculum which had been recommended for training schools and also part of the Registry examination. It was also thought that this consideration of therapy training, although somewhat minor at this time, would pave the way for a more standardized and complete consideration of therapy training at a later date.

The Executive Secretary reported to the Board on his efforts to obtain exclusive use of the "R.T." as a symbol of registration by the ARXT. Mr. Greene expressed doubt that such an exclusive right could be had and recommended that consideration be given to the use of an alternate symbol. He suggested that stress be laid on the fact that the original "R.T." was construed to mean "radiological technician" although at the present time "registered technician" is the term of choice. No alternate title was suggested although ARXT and XRT were pointed out as possibilities. It was the Board's unanimous opinion that a copyright for registration should be obtained at once on the symbol "ARXT" and also on the design of the insignia used on the ARXT emblem.

Mr. Greene reported on the results of the November 1955 examination. The general grades were noted to be lower than in previous years but the performance of training school graduates was markedly superior to the performance of examinees without formal training. The Board agreed that the examination in May 1956 should be conducted with an expectancy of 25 percent failing. It was voted that a complete list of grade results as submitted by the Executive Secretary be reproduced and sent to the directors of all the training schools as a guide to the efficiency of their courses and a means of comparison to other training schools.

1956

In May the Board established new deadlines for mailing applications and attaining eligibility. The Board voted to set back the postmarking deadlines for applications for the fall and spring examinations to September 15 and March 15, respectively. It was also agreed that the deadline for attaining eligibility for the fall and spring examinations would be January 7 and July 7, respectively.

After reviewing the results of the May 1956 examination the Board decided that no value was gained by giving an entire examination report to each

radiologist having a training school. In the future, each radiologist would be presented only with the results obtained by his graduates rather than the entire list.

A new woven shield emblem designed by Mary Higgins, R.T. of Philadelphia, Pennsylvania was presented to the Board for consideration. The Board approved the design and instructed the Executive Secretary to have the new emblems produced for sale to registrants. Ms. Higgins' design, along with the older round woven patch emblem, would remain in production for the next four decades.

At a regular meeting in November the Board considered the possibility of having equal technician and radiologist representation on the Board. No opposition was voiced, but no definitive action was taken.

The Board again discussed the American Radiography Technologists of Enid, Oklahoma and agreed that the ARXT would take no action against the group, but would continue to adhere to it's own high standards of qualifications and ethics.

The Board discussed the recent Institute for X-Ray Technicians held in Chicago and future Institutes planned for other locations. The first Institute was sponsored by the American Hospital Association (AHA) in cooperation with the ACR and the ASXT. William C. Stronach, Executive Director of the ACR, and Richard A. Olden, R.T., Chairman of the ASXT Board of Directors, were associate coordinators. Although it was agreed that the Institute was of no direct concern to the Registry, it was recognized that any program which aided in preparing technicians for registration was of some interest.

A proposal for dealing with candidates who had failed the examination three or more times was presented by Trustee Chester A. Warfield, M.D. of Fort Wayne, Indiana and subsequently adopted by the Board. It called for the introduction of a special form on which the technician's continuing education and experience could be enumerated and an expression of current competence obtained from the present employer. Dr. Warfield was very interested in examination development and had devoted a great deal of his personal time to assisting candidates to prepare for examination and reexamination. He had taught refresher courses at ASXT meetings and authored several articles, short texts and study guides for x-ray technicians. Later, a fellow Trustee would write, following Warfield's retirement from the

Board, "Chet Warfield went off as President of the Registry July 1st. He had been on for eight years and has done more to make the examination a scientific instrument than any one person in its past history."

1957

Trustee-Elect Richard A. Olden, R.T. of Baltimore, Maryland joined the Registry Board in June after having previously served the ASXT as member and Chairman of both the Education Committee and the Board of Directors. Olden had received his x-ray training in the U.S. Army prior to World War II and was known as a stern taskmaster who got things done. As Education Committee Chairman, he had been the driving force behind the completion and publication of the *"Basic Minimum Curriculum for use in Approved Schools of X-ray Technology"* which was accepted and endorsed by the ACR, the ARXT and the AMA in 1954. He had also directed the preparation and publication of a supplementary *"Teacher's Syllabus for Schools of X-ray Technology"*, a complete teaching outline and guide for the entire didactic portion of the training program. In 1955 Olden and his Committee collaborated with representatives of the ACR, AMA and ARXT in a complete revision of the AMA *"Essentials of an Accredited School of X-ray Technology"* which was accepted and adopted by the House of Delegates of the AMA in December 1955. Olden was also instrumental in organizing the first Institute for X-Ray Technicians and would serve as Institute coordinator for several years. The work of Olden and his contemporaries would provide a firm foundation for professionalism in radiologic technology.

At that meeting the Board considered a suggestion that a question-by-question analysis be made of examination results to determine the efficiency of each question.

There was also considerable discussion of increasing technician representation on the Board. No real opposition was expressed but some Trustees felt that there was more of a psychological need than an actual need for more technician representation. It was agreed, however, that the Senior Technician Trustee should be empowered to sign the certificates of registration as co-signer with the Senior Radiologist Trustee.

It was also announced that the emblem design and insignia of the Registry, and also the initials for the symbol (ARXT) had been accepted for registration by the Division of Registration and Patents in Washington, D.C. and that

official certificates would be received from that agency in the near future.

The Board discussed the possibility of reproduction of past examinations by private and commercial enterprises and instructed the Executive Secretary that in addition to strong wording to prevent reproduction of Registry questions as such, the actual copyright be taken on each set of questions to minimize the reproduction of the material in the exact form of the Registry questions which would be conducive to memorization.

The Board considered the inequalities of training and experience under non-radiological supervision. Based upon that discussion they voted to upgrade eligibility requirements effective July 1, 1960 to provide that no training or experience be credited toward meeting the requirements for registration except that obtained under the direct supervision of a diplomate of the American Board of Radiology or a medical radiologist having equal qualifications.

The Board was acquainted with communications pertaining to unionism which had been brought to the attention of the Registry. It was their unanimous decision that unionization should be the concern of the ACR and the ASXT and that the Registry Board would, henceforth, take no part in these matters as an organization and would refer all such communications to the sponsoring organizations.

Dr. Warfield gave an extensive report on the plans and preparations for the Technician Institute to be held in Denver, Colorado in November 1957. He explained that while the Registry would attempt to exert no directive influence on either the formation or conduct of the Institute it would be listed as a cooperating agency since any activities relative to the legitimate training of x-ray technicians is of intimate concern to the Registry. It was also approved by the Board that the registered technicians attending the Institute be asked to serve as "guinea pigs" during the course of the Institute by taking an earlier form of the Registry examination on an anonymous basis as a validity check on the examination content.

In keeping with the usage of other organizations and the intended meaning of the title "Executive Director," the Board adopted a resolution to amend the Bylaws to strike out the term "Executive Secretary" wherever it appeared and substitute the term "Executive Director."

The Board also discussed and agreed to the propriety of the holding of office on the Registry Board by Technician Trustees, and adopted a resolution to amend the Bylaws to separate the positions of Secretary and Treasurer and allow the Senior Technician Trustee to hold the position of Secretary while the Senior Radiologist Trustee would be President. The position of Treasurer would still be held by a Radiologist Trustee.

Increased technician representation on the Registry Board was again discussed and resolutions were presented to bring this about. Several ideas were proposed, one of which would provide for an increase in the number of Technician Trustees to three. Another proposed equal representation of three radiologists and three technicians. Still another version proposed that the number of Trustees and their ratio between the ACR and the ASXT be left flexible and at the discretion of the Board. There was an obvious lack of agreement as to which of these three recommendations was the best and the final decision was that an increase in technician representation had been approved in principle but that implementation of the increase would be decided later.

1958

At its February meeting, the Board attempted to define "radiological supervision" but did not succeed in arriving at a definition acceptable to a majority of the Trustees. The Board could only look forward to the time when all applicants for registration would be graduates of approved two year training programs.

The Executive Director reported on the failure of the Registry to secure a copyright on the R.T. designation. It was pointed out that no such title or degree could be copyrighted by anyone. It was explained that the initials (ARXT), as included in the official emblem which had been registered in Washington, D.C., were the Registry's exclusive property.

The Board reviewed the scope of the examination which had been compiled for administration in May 1958 and because of the uncertainty of what the passing grade would be on an examination of this revised scope and size, it was voted that the passing grade be determined on a curve with a percentage of failers approximate to, but not less than, 20%. The Executive Director was advised that a breakdown sheet should be sent to all those failing the examinations. It was agreed that a breakdown of other candidates

should be sent to the training school directors only on request, and that the same limitation in distribution would apply to the report on grades attained by the individual training school graduates. The Board voted against general distribution of the training school comparative reports.

The matter of increased technician representation on the Registry Board was again discussed and the Board passed a resolution to amend the Bylaws to increase the representation by the ASXT on the Board of Trustees from two to three.

The Board was jolted by Mr. Greene's announcement that he was resigning his position as Executive Director effective July 1, 1960. He pointed out that it would be necessary to secure a replacement candidate at an early date, since it would require a considerable period of time to orient and train a replacement to be acquainted with all the procedures of the office. It was agreed that the present Executive Director would serve in the role of consultant or advisor after the official appointment of the new Director if it was desirable for a short period of time. It was agreed that a more definite announcement as to plans for a replacement would be made by the Board at its next meeting. There was some discussion on moving the office from Minneapolis, possibly to Chicago, when the change in Executive Director was made, but no definite action was taken.

Prior to the June Board meeting it was announced that both sponsoring organizations had approved the Bylaw amendment which increased technician representation on the Board of Trustees. Edward W. White, R.T. of Albany, New York was appointed by the ASXT to fill the third technician position on the Board and the terms of Technician Trustees Cahoon and Olden were extended for one year. All three Technician Trustees had previously served on the ASXT Education Committee.

In June the Board discussed the form and content of the Registry examination with a test expert from Southern Methodist University who commented that the form of the examination and the structure of the questions were good. He left the Board a detailed list of recommendations for the future composition, analysis and structure of the examination.

The Board considered the statistics and results of the examination of May 1958 and ruled that in the future the passing grade would be 75 and listed grades would be determined on the basis of a curve.

The Board discussed revising the Registry's definition of "radiological supervision" and adopted a motion which provided for five visits per week for a minimum of ten hours per week. It was agreed that this suggested definition of supervision be submitted to the Board of Chancellors of the ACR and to the Board of Directors of the ASXT for their opinion as to its acceptance.

The Board discussed the resignation of the Executive Director which had been tendered at the February, 1958 meeting. The Board suggested that Mr. Greene remain in his position as Executive Director until the age of 65 with suitable arrangements being made for his retirement and replacement in the interim. Mr. Greene would be empowered to select a candidate to become his assistant and the candidate recommended by Mr. Greene would be presented to the Board for final acceptance. The selected candidate would be warned of a possible move of the Registry office at the termination of Mr. Greene's employment. As Mr. Greene agreed to these terms they became an act of the Board.

1959

At its January meeting the Board reviewed the recommendations of the ACR Committee on Technician Affairs on the definition of "radiological supervision." Those recommendations called for three visits per week for a total of not less than ten hours per week. The Trustees made it clear that while they favored five visits per week they considered that three visits constituted a more practical provision at the present time. The Board voted to delay the advocation of a resolution requiring that all candidates for Registry examination be graduates of an approved training school. However, it did adopt a resolution to amend the Bylaws to require that effective July 1, 1962, a school for x-ray technicians recognized by the American Registry of X-Ray Technicians be at least two years in duration.

It was announced that the Registry office would have to move again in the near future because the Metropolitan Building had been earmarked for demolition for urban renewal. The Board generally agreed that plans should be made to retain the office in Minneapolis for at least the next five year period which would complete the tenure of Mr. Greene as Executive Director.

The Board considered and approved a suggestion that Trustees having special abilities be permitted to attend meetings as consultants at

Registry expense following the expiration of their terms of office as Registry Trustees.

The Board discussed the status of registered technicians employed under the supervision of osteopathic physicians. Since the Bylaws were explicit in requiring registered technicians to work only under the supervision of M.D.s, an R.T. employed under osteopathic supervision would be ineligible for renewal of registration.

Clark R. Warren, R.T. of Detroit, Michigan joined the Registry Board at its July meeting replacing John Cahoon, R.T. whose four year term had expired on June 30. Warren, Cahoon and Dick Olden, R.T. had been called the "three musketeers" of the ASXT throughout the 1950s. Each had chaired the Education Committee and had held the offices of President and Chairman of the ASXT Board of Directors prior to being appointed to the ARXT Board of Trustees. Each of the three would later be selected to deliver the Jerman Memorial Lecture; Cahoon in 1960, Olden in 1961 and Warren in 1964. Warren was destined to serve on the ARRT Board of Trustees for nine years and later become the Registry's first outside consultant in x-ray technology. Unofficially, the "Sage of Detroit", as Al Greene named him, would also serve as friend and wise counsel to the Registry staff for nearly two decades.

The Executive Director reported that while the demolition of the building in which the Registry office was located was a certainty, there was no exact date set when it would take place. The Board recommended that he investigate the cost and plausibility of constructing a building to be owned by the Registry, or sharing occupancy in one of the large converted residences in the nearby residential district of Minneapolis.

After reviewing examination statistics showing the superior performance of graduates of two year training schools over those graduating from schools of lesser duration and candidates without formal training, the Board went on record as approving a recommendation of the ACR Committee on Technician Affairs that was to be presented by its chairman, Dr. A.B. Soule, to the ACR Board of Chancellors which provided that:

> "(1) As of July 1, 1962 only schools of x-ray technology two years or more in length will be eligible for approval by the Council on Medical Education and Hospitals of the A.M.A.; (2) As of July 1, 1964, eligibility for registration shall be limited to graduates of training schools approved by the Council on Medical Education and Hospitals of the A.M.A."

The Board also voted that the examination for November 1959 would employ machine scannable answer sheets. Questions for that examination had been compiled by reusing questions formerly used and by the development of new ones. The Executive Director and staff were committed to the task of adapting the questions for use with the new machine readable answer sheets.

In September, 1959 the following Code of Ethics was published and distributed to all registrants:

Code Of Ethics

"In consideration of the granting to me of a Certificate of Registration, or a renewal, thereof, by The American Registry of X-Ray Technicians, and my attendant right to use the title 'Registered Technician' and its abbreviation, 'R.T.(ARXT)' in connection with my name, I do hereby agree to perform the duties of an x-ray technician, whether as a worker, teacher, or supervisor, only under the direction or supervision of a duly qualified Doctor of Medicine. I also agree to conduct myself at all times in a manner appropriate to the dignity of my profession consistent with the Principles of Medical Ethics of the American Medical Association.

I will not act as owner, co-owner, advisor, or employer in connection with any type of enterprise having anything to do with the medical use of x-rays unless it be as an Affiliated Registered Technician and subject to the limitations of such certification.

I will not interpret radiographs or fluoroscopic shadows, treat or advise patients as to x-ray diagnosis or treatment; nor will I train students in x-ray technology unless under the direct supervision of a duly qualified Doctor of Medicine who specializes in radiology; and I will abide by this Code of Ethics, and all other present and future Rules and Regulations of the American Registry of X-Ray Technicians as long as I retain my certificate."

In years to follow, all applicants for examination for registration and applicants for renewal of registration would be required to agree to abide by the Code of Ethics as published.

Chapter Five
1960~1969

Overview

The '60's would provide ten hectic years of rapid growth and change. The Registry began the decade by constructing and occupying its own building and ended it with plans for a building expansion project to accommodate further growth and changes. The organization's name would change from The American Registry of X-Ray Technicians to The American Registry of Radiologic Technologists. The Executive Director would change as Al Greene would retire and be replaced by Roland McGowan. The composition of the Registry Board would be changed from majority representation by radiologists to equal representation by radiologists and technologists. Another change would allow any Trustee to hold any office on the Board. Outside consultants would attend Board meetings to assist in the development of examinations. The Registry's historical stance against registrants being employed by osteopaths would swing 180 degrees to accept both employment and training of radiologic technologists under the supervision of Doctors of Osteopathy. Special provisions for foreign-trained technologists would be enacted and implemented while on-the-job training would become a thing of the past for aspiring registrants in x-ray technology. Programs of examination and certification in nuclear medicine and radiation therapy technology would be implemented. The Registry would not

only increase its participation in the educational programs of other organizations but would create and implement a program of its own, the Alfred B. Greene Program of Continuing Education in Radiologic Technology. The registrant count would more than double during the decade to a total of 55,941 certificates in good standing as of June 30, 1969 including 54,974 in x-ray technology, 690 in isotope (nuclear medicine) technology and 277 in radiation therapy technology.

1960

In January the Board reviewed its progress to date in preparing standards for the training and examination of radiation therapy and isotope technicians. It was agreed with some note of despair, that there were too many differences of opinion as to not only the standards of training for these technicians but also as to the field in which they belonged. The sentiment of the Board was that the Registry should take no action in regard to the certification of these technicians until there was more agreement as to the basis on which they would be certified.

The Board reviewed plans for a proposed Registry building and a comparison between the costs of renting existing buildings and the cost of having a building constructed for the Registry to be leased from the builder as well as the cost of the Registry constructing and owning a building. It was the opinion of the Board of Trustees that it was a sound economic move for the Registry to construct and own a new headquarters building. A motion to that effect was subsequently approved unanimously. The Board of Trustees who voted for the building project were:

Sydney F. Thomas, M.D., President, Palo Alto, California; Chester H. Warfield, M.D., Vice President, Fort Wayne, Indiana; Robert D. Moreton, M.D., Treasurer, Fort Worth, Texas; Richard A. Olden, R.T., Secretary, Baltimore, Maryland; John A. Evans, M.D., Trustee, New York, New York; Clark R. Warren, R.T., Trustee, Detroit, Michigan; Edward W. White, R.T., Trustee, Albany, New York

In June, the Board reviewed recent developments in the state licensure of x-ray technicians and reiterated its 1948 position of opposition to such licensure.

The Executive Director reported on the progress on the new Registry building being constructed in Minneapolis. The architect had set up his drafting

table and was at work in the old Registry office drawing up construction plans. A general contractor had been hired and had promised occupancy about August 1. Building Committee members Richard Olden, R.T. and Chester Warfield, M.D. presented a resolution authorizing a first mortgage on the new building of $50,000 and authorizing the Executive Director to sign all necessary documents pertaining to the mortgage. The motion passed unanimously.

The Board inspected and approved unanimously the newly issued *Curriculum and Teacher's Syllabus* for two year schools of x-ray technology which had been prepared and published by the ASXT Education Committee. The ACR Board of Chancellors had previously approved the recommendation that training courses in x-ray technology be two years in length in order to be approved by the AMA. However, the Chancellors had not agreed to set a date when it would be required that applicants for registration be graduates of approved training schools.

On August 1, 1960, right on schedule, the Registry occupied its new building at 2600 Wayzata Boulevard, Minneapolis, Minnesota. On August 18 the Registry held a grand opening and building dedication ceremony. Many dignitaries were in attendance including Marjorie C. Tolan. R.T., President of the ASXT; Earl E. Barth, M.D., President of the ACR and A.N. Taylor, Ph.D. Secretary of the Council on Medical

2600 Wayzata Boulevard, Minneapolis Registry's Home, 1960-1989

Dedication of ARRT Building, August 18, 1960
From left: Clark R. Warren, R.T.; Alfred B. Greene, R.T.; Chester Warfield, M.D.; Marjorie C. Tolan, R.T.; Earl Barth, M.D;, A.N. Taylor, Ph. D.

Education and Hospitals of the AMA.

1961

In February the Board considered a request from the ASXT to equalize the number of Radiologist and Technician Trustees on the Registry Board. Although the ASXT had suggested that the number of Radiologist Trustees be reduced from four to three for economic reasons, it was the feeling of the Board that Registry work would be best accomplished if the number of Technician Trustees were increased to four making a Board of eight. The Board prepared a resolution to amend the ARXT Bylaws to allow equal technician and radiologist representation.

The Board reviewed progress on the establishment of categories of certification for isotope and therapy technicians and issued the following statement:

> "The American Registry of X-ray Technicians is on record confirming that the certification by the American Registry of X-Ray Technicians of therapy and isotope technicians is a duty that they will assume after a curriculum and teacher's syllabus have been prepared by the American College of Radiology Commission on Technician Affairs and the American Society of X-Ray Technicians."

At its June meeting, the Board welcomed the return of Richard A. Olden, R.T. to the Board after a short absence. Olden had been re-appointed by the ASXT to a new four-year term to fill the fourth technician position authorized by the Bylaw amendment enacted by the Board at its previous meeting.

The Board also considered the problem of foreign-born technicians who had trained in AMA approved schools in the United States but who were ineligible for ARXT examination and certification because they were not U.S. citizens. The Board approved the following policy:

> **Requirements For Foreign Students**
> "Foreign students having been accepted and trained in approved schools of x-ray technology in the United States may be eligible to apply to take the official examination of the American Registry of X-Ray Technicians. They must meet all requirements except that of citizenship. If examination is passed, they may receive a certificate indicating this proficiency. If they should later meet the citizenship requirement through a regular application for registration, this certificate may be used in lieu of another examination."

The Board again struggled with the definition of a "recognized radiologist" for purposes of supervising the training and experience of candidates for examination for registration. The Board wanted a definition which would

include Canadian certified radiologists as well as American board eligible radiologists. After much re-writing, the Board came up with the following definition:

> **A Recognized Radiologist**
> "The Registry Board considers a recognized radiologist for purposes of x-ray technician training to be a Diplomate of the American Board of Radiology, a Certified Specialist in Radiology of the Royal College of Physicians and Surgeons of Canada or a radiologist serving his fourth year toward obtaining certification."

The Board reviewed its policy concerning certification of paroled convicts and reinstatement of the certificates of previously registered individuals who had been incarcerated and paroled. The Board ruled that the Registry would not certify applicants nor reinstate previous certificate holders who had been convicted of a felony until such time as the entire sentence including parole had been completed and civil rights had been restored.

The Board took note of new activities of the American Radiography Technologists of Enid, Oklahoma. The ART was widely distributing a brochure which offered benefits such as an insurance program. This was perceived as a potential problem in that hospital administrators might be confused about the distinction between technicians certified by the ARXT and those of the ART.

The Board also reviewed complaints from physicians that there had been too much emphasis placed on pathology questions in recent Registry examinations. Some felt that technicians should not be taught pathology since such knowledge might lead a technician to attempt to diagnose pathological conditions. The Board noted that it had not expected a technician to diagnose pathological conditions, but only to demonstrate the best view for the radiologist to observe the pathology. The Board concluded that the actual problem was one of terms used and that it could be solved by moving the pathology questions into the medical terminology category.

1962

In February the Board considered a recommendation of the ASXT Board of Directors that only graduates of AMA-approved schools be allowed to write the Registry examination after a projected date of July 1, 1964. In response, the Board stated that "at such time as there are enough AMA-approved schools of x-ray technology to provide a sufficient number of graduates to satisfy the needs of radiology, the Registry will institute the requirement that

applicants for certification shall be graduated from such schools."

The Board again discussed the training, examining and certifying of radioisotope and radiotherapy technicians. The ACR Commission on Technician Affairs had done some work on the recognition of the radioisotope technician and other medical specialties were showing interest also. The ASXT Education Committee had drafted a curriculum for radiotherapy technicians but there had been no follow-through because of disagreement among therapeutic radiologists about what an x-ray therapy technician should do. The Board concluded that it was not the function of the Registry to establish a curriculum for a new specialty but to examine in a new specialty only after the ASXT established a curriculum on which an examination could be based.

The Board moved and approved a motion which would authorize the Executive Director to renew the certificates of registered technicians employed by regular members of the American Osteopathic College of Radiology (AOCR). It was also moved and approved to enact changes in the Bylaws as necessary to implement that motion. The above actions followed a plea by Registry President Robert D. Moreton, M.D. on behalf of some osteopathic radiologists he had met while roping cattle in his home state of Texas.

The Board discussed the possibility of preparation of future drafts of the examinations in advance of Board meetings and decided to delegate authority for preparation of each new examination draft to the Registry office which would be responsible for providing each Trustee with a copy of the examination in advance of the meeting.

Ralph J. Bannister, R.T. of Burlington, Vermont joined the Registry Board at its July meeting to replace Ed White, R.T. whose term had expired. Bannister was technologist supervisor at the Mary Fletcher Hospital School of X-Ray Technology under the radiological supervision of A. Bradley Soule, M.D. and held an appointment as instructor in x-ray technique at the University of Vermont College of Medicine. He had served as member, chairman and advisor to the ASXT Education Committee and, since the inception of the AMA x-ray school accreditation program, had served as school survey coordinator for the ASXT in cooperation with Dr. Soule's ACR Committee on Technician Affairs. The team of Soule and Bannister deserve much of the

credit for setting up the early school accreditation machinery and making it run.

The Board again considered proposals for examining and certifying in radioisotope technology and in radiation therapy technology and decided that separate examinations and certificates should be developed for radioisotopes and therapy. The Board reviewed the current "*Curriculum and Teacher's Syllabus for Schools of X-ray Technology*" and determined that the syllabus contained the elements of curricula for both radioisotope and radiotherapy specialties within its coverage of x-ray technology. That curriculum had previously been approved by the AMA. It was moved and unanimously approved that the Registry should examine qualified individuals for certification in the radioisotope and radiation therapy categories using an expanded outline of the radioisotope and radiotherapy material in the Syllabus as the basis for curricula. The projected date for the first radioisotope technology examination was set for November 1963. The first examination in radiation therapy technology was scheduled for November 1964. The examinations were to be held annually in conjunction with the regularly scheduled fall examinations in x-ray technology. The radioisotope curriculum and the radiotherapy curriculum would be presented to the next executive meeting of the ACR and then submitted to the AMA for approval as the curricula approved by the ASRT.

Because the Registry would soon begin to examine and certify in categories of radiologic technology in addition to x-ray technology, the Board prepared, moved, seconded and approved a resolution to amend the Bylaws to change the name of the corporation from The American Registry of X-ray Technicians (ARXT) to The American Registry of Radiologic Technologists (ARRT). This represented a full circle in the abbreviated name of the organization from 1922, when it was founded as the ARRT (American Registry of Radiological Technicians) to 1936 when it was incorporated as the ARXT (American Registry of X-Ray Technicians) to 1962 when it became the ARRT again.

1963

On May 25 the Board met for the first time as The American Registry of Radiologic Technologists. Trustees appointed by the ASXT would henceforth be called technologist trustees. Registrants would henceforth be

called registered technologists and their specialty would be indicated by an initialed suffix to the R.T. designation. For example, a technologist certified in x-ray technology only would use RT-X(ARRT) following his or her name. One certified in radioactive isotopes could use RT-I(ARRT). One certified in radiation therapy could use RT-T(ARRT). A technologist who attained certification in all three specialties would be able to use RT-XIT(ARRT) in connection with his or her name.

The Board considered the latest request from the ASXT for an upgrading of the requirements for examination for registration in x-ray technology. In response, the Board declared that, effective July 1, 1966, the ARRT would accept for examination only applicants who had completed a course of training in a school of x-ray technology approved by the Council on Medical Education and Hospitals of the AMA and the Commission on Technologist Affairs of the ACR.

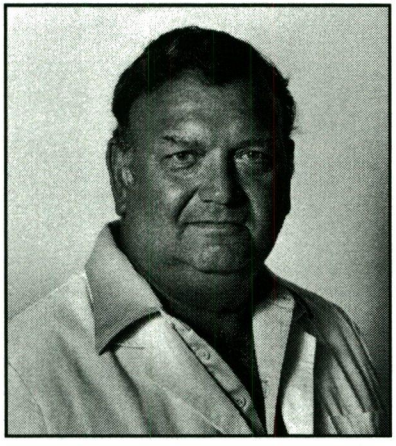
With the date of the first examination in radioisotope technology fast approaching, some of the Trustees expressed mixed feelings over whether the ARRT should continue to go it alone or join other organizations on an ad hoc committee on certification in radioisotope technology which would be meeting at Montreal in June 1963. That committee would be made up of two representatives from the American Society of Clinical Pathologists (ASCP), two from the Society of Nuclear Medicine (SNM), two from the American Society of Medical Technologists (ASMT), two from the ASXT and one each from the ACR and the ARRT. It was no secret that some of the attending organizations had been planning their own programs for certifying radioisotope technologists and were not too happy about being beaten to the punch by the ARRT. The Board voted to send a representative to the meeting to offer the Registry's cooperation in every way, but to present the following principles for agreement to the committee:

"1. That a single standardized examination be established for certification of all isotope technologists.
2. That a universal standard of grading be agreed upon which would apply to all sources of certificates.
3. That a uniform time of the examination be agreed upon.
4. That standards of eligibility be uniform and acceptable to all parties concerned.
5. That the examination be given by and under the supervising arrangements made by The American Registry of Radiologic Technologists."

The ARRT eligibility requirements for examination for registration in

radioisotope technology were published in the May 1963 issue of *The X-ray Technician* as follows:

"1. Graduation from an AMA-approved program in x-ray technology, plus the successful completion of a 13-week course in radioactive isotopes as prescribed by the ACR, ASXT, and ARRT; or
2. Certification as an x-ray technologist by the ARRT, plus the successful completion of a 13-week course in radioactive isotopes as prescribed by the ACR, ASXT, and ARRT; or
3. Certification as a medical technologist by the Registry of Medical Technologists (ASCP), plus the successful completion of a 13-week course in radioactive isotopes as prescribed by the ACR, ASXT, and ARRT, or other isotope training equivalent or better; or
4. Registration as a professional nurse with two years of college credit or a baccalaureate degree, plus completion of a 13-week course in radioactive isotopes as prescribed by the ACR, ASXT, and ARRT, or other isotope training equivalent or better; or
5. A B.S. degree with a major in biology, chemistry, or physics, including at least 60 clock hours of a basic course in human anatomy and physiology; plus the successful completion of a 13-week course in radioactive isotopes as prescribed by the ACR, ASXT and ARRT, or the equivalent or better; or
6. The successful completion of a course of at least one year in radioisotopes acceptable to the ARRT; or
7. Graduation from a four-year high school course, or the equivalent, plus at least five (5) years of full time (40 hr/wk) experience in a radioisotope laboratory or department acceptable to the ARRT; or
8. Certification as an x-ray technologist by the ARRT, plus at least two (2) years of full time (40 hr/wk) experience in a clinical radioisotope laboratory or department acceptable to the ARRT.



Donald G. Braatz, R.T., First Registered Nuclear Medicine Technologist

Note: As of July 1, 1965, Sections 7 and 8 will not apply.

These requirements may be subject to change should unforeseen conditions of training or experience occur which are not covered by the above."

Following publication of the requirements, applicants rushed to be among the first to possess the RT-I (ARRT). Copies of the basic suggested curriculum for the training of isotope technologists were made available by the ASXT office and 13-week courses began to appear where none had been before. The first examination for registration in

isotope technology was held on November 1, 1963. 148 technologists passed that examination and were certified effective December 1, 1963. Donald G. Braatz, R.T., an Air Force technologist stationed in Alabama, was issued ARRT isotope certificate #1.

On May 28, the ASXT membership passed a resolution to change the name of their organization to the American Society of Radiologic Technologists (ASRT) effective July 1, 1964.

1964

In the January 1964 issue of *Radiologic Technology*, its newly renamed journal, the ASXT published its proposed minimum radioisotope and radiotherapy curricula both of which were awaiting final approval by the ACR and the AMA. Each of the curricula described a 12-month course and its prerequisites.

At its February meeting, the ARRT Board was informed that the Board of Registry of the ASCP was examining in radioactive isotopes and that the Society of Nuclear Medicine was proposing an examination of its own. The Board expressed hope that any differences in thinking between the ASCP, the SNM and the ARRT would be resolved in a friendly manner. In an attempt to reconcile some of those differences, the Board met with Nellie Mae Bering, M.T.(ASCP), a member of the ASCP Board of Registry, for a discussion of the eligibility requirements, examination contents, prerequisites for training and other aspects of the ASCP and ARRT examinations for technologists in nuclear medicine. It was mutually agreed that every effort would be made to establish parity between the ASCP and ARRT that would make the examinations comparable.

The eligibility requirements for the initial examination for registration in radiotherapy technology were published in the March 1964 issue of *Radiologic Technology* as follows:

> "Candidates must have completed an acceptable two-year course in radiotherapy technology or must have completed an acceptable one-year course and met one of the following additional conditions:
>
> 1. Graduation from a two-year program in x-ray technology approved by the American Medical Association; or
> 2. Certification as an x-ray technologist by The American Registry of Radiologic Technologists; or
> 3. Certification as a radioisotope technologist by the ARRT; or

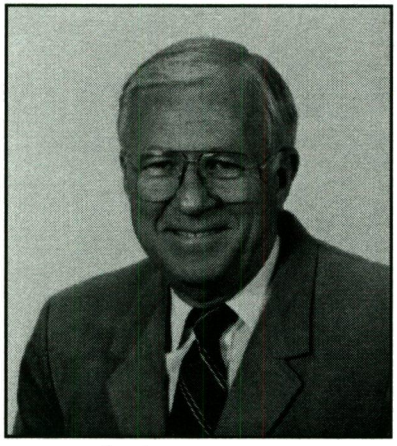
4. Registration as a professional nurse.

Grandfather Clause

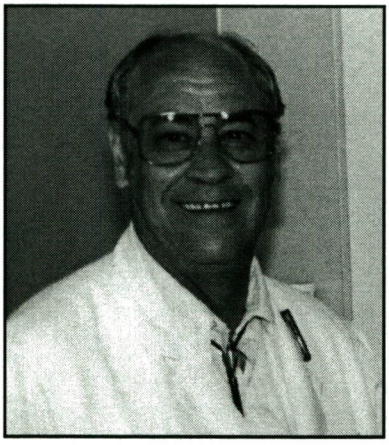
Until July 1, 1966, applicants possessing at least one of the following sets of qualifications will also be accepted for examination in radiotherapy technology:

1. Certification as an x-ray technologist by the ARRT plus at least three years of full-time (40 hours per week) experience in a radiotherapy department acceptable to the ARRT; or
2. Certification as a radioisotope technologist by the ARRT plus at least four years of full-time experience in a radiotherapy department acceptable to the ARRT; or
3. Graduation from a four-year high school course, plus at least six years of full-time experience in a radiotherapy department acceptable to the ARRT."

In June 1964 the Board met for the purpose of reaching a final decision on the selection of a successor to the Executive Director. A fact finding com-



Roland C. McGowan, R.T.
Executive Director, 1965-1991



Norbert C. Black, R.T.
First Registered Radiation Therapy Technologist

mittee headed by the President interviewed Roland C. McGowan, B.S., R.T., chief x-ray technologist at Christ Hospital, Cincinnati, Ohio, and found that Mr. McGowan fulfilled the requirements for the job. Mr. McGowan accepted the job and agreed to assume the office of Executive Director on July 1, 1965. Mr. Greene would remain as a full-time advisor to Mr. McGowan until October 1, 1965, the retirement date previously agreed upon, and his services would be available after that date on an advisory basis as required.

The first examinations in radiation therapy technology were administered in

November 1964 in conjunction with the regularly scheduled examinations for registration in x-ray technology and nuclear medicine technology. The first registered radiation therapy technologist was Norbert C. Black, R.T., technical supervisor in the department of radiotherapy at the University Hospital, Birmingham, Alabama. Mr. Black was issued ARRT radiotherapy certificate #1 on December 1, 1964.

1965

In February, the Board agreed on the need for outside help in construction of the examinations in nuclear medicine technology and radiation therapy technology. The Board voted to cover the expenses of consultants in nuclear medicine and radiation therapy to attend future Board meetings and assist the Board with test preparation.

In June the Board considered a request it had received from the secretary of the X-Ray Technician Examining Board of the state of New York for copies of the ARRT examination with a categorical breakdown and item analysis for use in determining whether those passing the examination would be eligible for New York state licensure. Although some Board members expressed their discomfort in cooperating with a state licensing program in any manner, they agreed that not cooperating in this case could prevent ARRT registrants from working in New York State.

On July 1, 1965 Roland C. McGowan assumed the office of Executive Director of the ARRT as scheduled.

1966

At its January meeting, the Board was assisted in the preparation of future examination forms by its first two outside consultants, James J. Nickson, M.D., consultant in radiation therapy, and Walter H. Lange, R.T., consultant in nuclear medicine technology.

The Board agreed to the following statement regarding the state licensure of radiologic technologists:

> "The American Registry of Radiologic Technologists is a national voluntary examining agency. Its purpose has been, and is, the preparation and administering of examinations of sufficient quality to attest to the competency of the technologist. Because of the comprehensiveness and quality of the examination, the certificate is the only one recognized by organized medicine. It is, therefore, presumed that state agencies governing the technologies relating to ionizing radiation may, at

> their discretion, grant a license without further examination to those candidates who have successfully completed the examination of the ARRT. We believe that acceptance of the ARRT certificate by such agencies is desirable in consideration of the technologists living within, or moving to, a state which separately establishes rules and regulations for this technology. The American Registry, therefore, will cooperate with the state licensing authorities to a degree which will not compromise the integrity of the Registry."

Record numbers of new applications were received within the postmarking deadline for participation in the May 1966 examination for registration in x-ray technology. This surge in applications was the result of the policy that beginning July 1, 1966, applications would no longer be accepted from informally trained x-ray technologists.

At its June meeting the Board and invited consultants divided into three groups to construct the November 1966 examinations in x-ray technology, nuclear medicine technology and radiation therapy technology. This event marked the beginning of the use of specialized committees for examination development.

The Board discussed a recent meeting in the office of Dr. A.N. Taylor, Secretary of the AMA Committee on Medical Education and Hospitals, which Dr. Taylor had called to discuss the essentials and curriculum for schools of nuclear medicine technology and the methods for the organization of a body to examine and approve those schools. Representatives of ASRT, ACR, ARRT, ASCP, ASMT and SNM had been present. The Board agreed that all of the above organizations should be involved in the approval of schools of nuclear medicine technology and that there should be considerable interaction between the two examining bodies in nuclear medicine technology.

On July 1, 1966, the Registry entrance door closed on all applicants for examination in x-ray technology who were not graduates of AMA-approved training schools. New application forms were introduced which provided space for both the supervising technologist and radiologist director to certify to the applicant's completion of an accredited program. The program director would also certify to the applicant's high school graduation. It would no longer be necessary for the applicant to provide proof of high school graduation or for the program director to complete a reference form.

For several years the Registry office had been maintaining a numbered file

of accredited x-ray programs based on a list of approved programs published annually by the AMA. That file had been used primarily for statistical purposes. However, the AMA was always at least a year behind in listing new approved schools. Accreditation applications, school inspections and recommendations for AMA approval or disapproval were being handled by Dr. Soule's ACR Commission on Technician Affairs. Beginning in 1966, the traffic in letters and phone calls between the Registry and the Commission became intense as Registry staff scrambled to determine the accreditation status of schools which had not appeared on an AMA list, but had graduates applying for examination for registration.

July 1, 1966 was also the effective date for an upgrading of the requirements for examination in radiation therapy technology. After that date, applicants would be required to complete either a 12-month or 24-month program of full time formal training in radiation therapy technology as prescribed by the ASRT, ACR and ARRT. Training would have to meet the therapy curriculum requirements as published by the ASRT and take place at an institution meeting the requirements for a Major Cancer Management Center. ARRT certification in x-ray technology or nuclear medicine technology or graduation from an AMA approved two year program in x-ray technology were required prerequisites for the 12-month program.

In the September 1966 issue of *Radiologic Technology*, the ASRT published its *"Organizational Guide for Schools of X-ray Technology."* The appearance of this document was very timely in providing radiologists with a "how to" manual on setting up an AMA approved school shortly after on-the-job training became obsolete as a route to ARRT certification.

1967

At its February meeting the Board considered the situation of foreign trained technologists working in the United States who were not covered by a reciprocity agreement, but could not qualify for examination for registration because they were not graduates of AMA approved schools. In response, the Board approved the following resolution:

> "At the discretion of The American Registry of Radiologic Technologists, immigrants to the United States may be eligible for examination if all the following requirements are met:
>
> a) Satisfactory completion of a program of training in radiologic technology con-

sidered to be standard in their country of origin, and
b) Successful completion of the general equivalency high school examination in the English language, and
c) Two years of satisfactory experience in radiologic technology under the direct supervision of a Diplomate of the American Board of Radiology, or a recognized medical radiologist of equal qualifications.

Where training or experience are appropriate, this applies to the examination in X-Ray Technology, Nuclear Medicine Technology and Radiation Therapy Technology. Such applicants must have demonstrated to their supervising radiologist(s) skills and performance equivalent to those expected of graduates of the pertinent two year formal program as described elsewhere in the Registry qualifications."

At that meeting, the Board authorized the use of slide rules by participants in the examinations in nuclear medicine technology and radiation therapy technology. The Board also agreed to participate in the 1967 ASRT Institute for Radiologic Technologists by assuming the expense of printing the Institute flyer and program and the expenses of participating ARRT personnel.

At its June meeting the Board discussed ways to enhance and formalize communications between the ARRT and ASRT and decided that the Technologist Trustee serving in his or her second year on the ARRT Board of Trustees should regularly attend the ASRT post convention, mid-year and the following pre-convention meetings. Previously it had been the custom for the Senior Technologist Trustee to submit a report on Registry activities to the ASRT Board of Directors at the end of the fiscal year and for the Junior Technologist Trustee to present a report of the ASRT Board's concerns and recommendations to the ARRT Board following each regular ASRT Board meeting.

Three outside consultants were invited to participate in examination development activities at the February 1968 Board meeting. They were Antolin Raventos, M.D., consultant in radiation therapy; Walter H. Lange, R.T., consultant in nuclear medicine technology; and Jack S. Krohmer, Ph.D., consultant in physics.

The Board reviewed the preliminary draft of an updating of the ARRT Articles of Incorporation and Bylaws noting needed changes and instructed the Executive Director to prepare another draft for review at the next meeting.

The Board also discussed the state licensure of radiologic technologists and agreed to establish and promote a position of opposition to licensure of technologists. The following statement of policy was adopted:

> "The American Registry of Radiologic Technologists is opposed to state licensure of radiologic technologists because it will not protect the public from unnecessary exposure to ionizing radiation. The protection of the public from unnecessary irradiation for medical uses can be effectively controlled only through the person ultimately responsible for patient care—the physician.
>
> Further, the Registry is opposed to the preparation of a model bill for licensure of radiologic technologists because it implies endorsement of this type of legislation.
>
> Therefore, efforts of concerned organizations and agencies should be directed toward ascertaining that the physicians who are responsible are qualified."

The Board also considered a proposal that the ARRT establish a student-aid program and decided that the Registry should contribute to some form of student aid and that this aid should be directed towards assisting and promoting graduate technologists towards advanced formal education for the purpose of improving and providing teaching technologists. Technologist Trustees Robert Phillips, R.T. and Marjorie Tolan, R.T. were authorized to consult with the ASRT Education Committee as to the need, type of program, and suggestions for administration.

The Board also reviewed and approved the first application under the special provisions for foreign trained immigrant technologists which had been established at its February 1967 meeting.

1968

Loy T. Brown, M.D., Captain, Medical Corps, U.S. Navy joined the Registry Board at its June meeting. Brown was Chief of Radiology at the National Naval Medical Center Bethesda, Maryland and Medical Director of the Bethesda Naval Hospital School of X-Ray Technology. He was the only career military officer to serve on the ARRT Board of Trustees. The Board reviewed the reports of Trustees Phillips and Tolan on ARRT participation in a student aid program. Two possibilities were discussed. One was a post-graduate program under college or university direction. The other would provide funds supporting individuals toward baccalaureate education. The Board agreed on a proposal which would provide funds for 15 students, already ARRT certified, for 120 hours (2 courses) of university instruction at a cost of about $6,000 per year. A committee was then appointed to investi-

gate methods of selecting candidates, criteria for selection and administration of the program.

The Board approved a reciprocity agreement with the Australasian Institute of Radiography to become effective immediately. Under that agreement individuals certified by the Institute would receive registration by the ARRT automatically upon application.

1969

At its January meeting, the Board reviewed arrangements for the planned student aid program as presented by Trustee Phillips and agreed to a program which would provide a course of four weeks study at Northeastern University allowing ten quarter hour credits in subjects intended for graduate technologists with instructional or managerial backgrounds. The Board approved the presentation of the program for 20 students. The program would be named the Alfred B. Greene Program of Continuing Education in Radiologic Technology. The Board also agreed to continue the program for three courses (one a year) as a pilot program to be evaluated at the end of the 3-year period.

The Board voted to upgrade the requirements for examination for registration in radiation therapy technology. Effective July 1, 1974 only graduates of AMA-approved schools of radiation therapy technology would be accepted for examination.

The Executive Director reported a need for additional working space in the Registry office. He suggested that plans be initiated to complete existing expansion space in the next year. The existing expansion space needed only flooring, ceiling and electricity to add an additional 600 square feet of working area to the building. The Board directed that Mr. McGowan consult a professional architect to inspect the existing office space and make suggestions for expansion and improvement, taking into consideration expected future growth and needs.

It was reported that the ACR had not approved the draft revision of the ARRT Bylaws in its entirety. After considerable discussion, the Board decided to request both ACR and ASRT to consider a proposal to change Article VII, Section 2 of the Bylaws to read:

"Each of the officers of the corporation shall be chosen from among the Trustee

> members of the Corporation to serve for a period of one year not to succeed themselves in office."

The effect of the requested Bylaw change would be to allow any Trustee, technologist or radiologist, to be elected to any office on the Board.

At its July meeting, the Board reviewed an architect's plan for increasing working space in the Registry office. The plan provided for an "L shaped" addition along the south and west sides of the existing building and converting the garage area into additional machine room space. The plan would increase the present building by 2188 square feet. The Board approved the plan as presented.

The Board reviewed the *ARRT Code of Ethics* and *ARRT Rules and Regulations* governing the professional employment of registered x-ray technologists and ruled that a physician's signature no longer be required on the form for annual renewal of certification. The Board further decided that renewal of certification be allowed for all registrants employed under the supervision of an acceptable physician. An acceptable physician was defined as a Doctor of Medicine or a Doctor of Osteopathy. The Board discussed a report from Dr. Soule of the ACR Commission on Technologist Affairs regarding the possible approval of schools of x-ray technology located in osteopathic hospitals. The Board decided that graduates of osteopathic hospital schools of x-ray technology would be acceptable for examination for registration provided that such programs were approved by the AMA.

In its final action of 1969, the Board instructed the Executive Director to invite three outside consultants to attend its February 1970 meeting. They were Antolin Raventos, M.D., consultant in radiation therapy; E. James Potchen, M.D., consultant in nuclear medicine; and Clark R. Warren, R.T., consultant in x-ray technology.

Chapter Six
1970~1979

Overview

In the '70's the Registry would reach its 50th birthday with a celebration reaching clear to the White House. X-ray technologists would be retitled as radiographers. The decade would see the Registry again outgrow its work space and require the walls of its headquarters building to be pushed out. The Registry would enter the computer age and become completely independent of outside data processing services. Examination administration and scoring would be subcontracted to an outside testing agency. Committees of outside consultants would be employed to assist in the development of Registry examinations. The Board of Trustees would elect its first technologist president. The new staff position of Director of Psychometric Services would be established by the Board. The Registry would begin cooperation with state licensing agencies leading to the ARRT administering its examinations to candidates for state licensure. Special provisions would be established for military trained technologists. Groundwork would be laid for the establishment of alternative eligibility requirements. Time restrictions would be placed on eligibility for examination and re-examination. Examinations would be equated to provide May and November examinees with a level playing field. The Registry would first expand, then abandon its educational programs in the face of continuing

opposition from one of its sponsoring organizations. The ARRT would upgrade its requirements for examination in nuclear medicine technology. The Registry would commence legal action to dissuade another organization from infringing on the trademark "ARRT." Again, the number of certificates in good standing would more than double during the decade. As of June 30, 1979 the Registry would have a total of 119,521 certificates in good standing including 110,759 in radiography, 6,820 in nuclear medicine technology and 1,942 in radiation therapy technology.

1970

In February the Executive Director reported on the building expansion program. The mortgage on the present building would be paid off in the current fiscal year. Construction of the building addition was proceeding on schedule and would be completed by early spring.

Trustee Robert I. Phillips, R.T., Coordinator of the Alfred B. Greene Program of Continuing Education in Radiologic Technology, reported that 40 applications had been received for the 1970 session. The Board agreed that the program was proving to be more than satisfactory and would be formally evaluated after its third year of operation as originally planned.

The Board discussed at great length the new Joint Review Committee on Education in Radiologic Technology which was replacing the ACR Commission on Technologist Affairs' Committee on Technologist Training in performing program evaluation for the AMA Council on Medical Education.

The Board considered a trend in radiology to develop specialized technologists such as angiography technologists and debated whether or not ARRT examinations should be developed in these areas. It was noted that neither curricula nor formal training programs had yet been prepared. The Board voted to refer this matter for consideration by the ACR and ASRT.

The Board also heard a report on the first meeting of the Interstate Committee on Technician Certification in New York City which the Executive Director and Trustees Mark Mishkin, M.D. and Robert Phillips, R.T. had attended. That meeting had been chaired by Howard Goldman, Director of the New York State Bureau of X-Ray Technology. Out of that meeting came a proposal for a long range plan under which the ARRT examination would become the national examination for all radiologic tech-

nology credentialing agencies. The Board agreed that it should remain flexible toward such proposals, but that under no conditions would the ARRT lower present standards.

In June Trustee Phillips reported that 57 applications had been received for the 1970 Alfred B. Greene Program in Continuing Education. The selection committee had picked 20 participants to be sponsored by the Registry and four others were to attend at their own expense.

Walter H. Lange, R.T. was elected President of the ARRT Board of Trustees and became the first Technologist Trustee to hold that position.

The Registry awarded special recognition to Sister M. Beatrice Merrigan, the first registered technologist, at the grand opening of the new addition to the Registry office building on October 31. Sister M. Armella, R.T. of Missouri accepted a special plaque for Sister Beatrice who was unable to attend because of ill health.

1971

In February the Board reviewed its policy on the re-examination of candidates who had failed the examination on three previous attempts and discussed the need for development of a review course for remediation of those who had failed multiple times. The Board decided to request the Director of Education of the ASRT to proceed with all speed to prepare such a review course. The Board then ruled that effective January 1, 1973, candidates would not be eligible to participate in additional examinations after having failed on three occasions without providing evidence of additional training satisfactory to the Board of Trustees. In addition, the Board ruled that effective January 1, 1973, the schedule of fees for repeat examinations would be changed such that after the third attempt any additional attempts would require payment of a fee of $10.00 rather than the $5.00 fee charged for the second and third attempts.

The Board also voted to offer the examinations in nuclear medicine technology and radiation therapy technology twice per year instead of once per year as was previously the case. These examinations would be held in conjunction with the regularly scheduled spring and fall examinations in x-ray technology beginning in 1972.

The Board reviewed a report on the activities of the new Joint Review

Committee on Educational Programs in Nuclear Medicine Technology and noted that 16 programs had applied for approval and nine had received either conditional or provisional approval. It was also noted that the Nuclear Medicine Committee of the ASRT had developed a new curriculum for schools of nuclear medicine technology. The Board expressed an urgent need for collaboration with the ASCP and the SNM in the examining and certifying of nuclear medicine technologists upon hearing that still another organization was about to begin an examining and certifying process for nuclear medicine technologists. Representatives of the ASMT, the ASCP, the SNM and the ARRT had recently met in Washington, D.C. and out of that meeting had come a proposal that mutually generated guidelines for training and certification in nuclear medicine technology should be developed. The Board discussed the possibility of a conjoint registry and appointed Trustee Walter Lange, R.T. as its liaison to those organizations to explore this possibility.

In July the Executive Director presented the Board with a proposal which would lead to the computerization of Registry records. Mr. McGowan reported on a preliminary discussion with a computer typesetting company in which that company proposed printing the *1971 Directory of Registered Technologists* using computer typesetting. That process would leave the Registry with the names and addresses of all registrants on computer tape. This tape could then be loaded into the database of a computer service bureau and some of the Registry's operations computerized.

The Executive Director presented a proposal for strengthening security in the administration of ARRT examinations by using supervisors independent of radiology or radiologic technology with each supervisor being under contract and paid a set fee. The Board authorized Mr. McGowan to develop a time schedule and cost estimates and to report this proposal at the next meeting.

The Board continued its involvement in educational programs. Four Trustees and the Executive Director were authorized to participate in the 1971 ASRT Institute for Radiologic Technologists in Dayton, Ohio by administering a form of the ARRT examination in x-ray technology and leading a post-examination question and answer session.

The Board voted to continue the Alfred B. Greene Program of Continuing

Education for three more years and to offer it at other locations in addition to Boston. The Board also authorized Trustee Dante DiLella, R.T. to develop a program of effective education for presentation at the new Eastman Kodak marketing center in Rochester, New York. Scholarships of $100.00 were authorized for each of the 24 students who would be selected from applicants for the Alfred B.Greene Program.

In December ARRT President Walter Lange and Registry staff met with W. Newlon Tauxe, M.D. of the ASCP Board of Registry at the ARRT office in Minneapolis to discuss the establishment of a conjoint registry for nuclear medicine technologists. It was generally agreed that the ARRT and ASCP examinations were equivalent and that conjoint examination and certification were desirable and achievable. A preliminary document was drafted for consideration by the boards of both registries. Subsequently the document was favorably reviewed by the ARRT Board.

1972

At its February meeting, the Board paused to note the 50th anniversary of the Registry and authorized the preparation of special commemorative publications and medallions and a standing exhibit and slide show for display at meetings attended by ARRT personnel.

At that meeting the Board considered proposals from outside agencies for administration and scoring of ARRT examinations and accepted the proposal of the Educational Testing Service of Princeton, New Jersey, the largest testing organization in the world. The plan was to be implemented for the November 1972 examinations.

The Board endorsed a proposal for a validity study to be initiated with the May 1972 examinations. A sample of the examinees would be identified and followed through the 1973 renewal process to determine their employment status. Then a questionnaire would be sent to the technologist's supervising radiologist and technologist seeking an evaluation of the technologist's capabilities. That evaluation would then be compared to the individual's examination performance.

The Board discussed the problems of military trained x-ray technologists who had been found ineligible for examination for registration because they had trained prior to the time the military schools were formally approved

by the AMA but were unable to apply for ARRT examination before July 1, 1966 when examination for registration was restricted to graduates of AMA-approved schools. The Board directed Registry staff to extract, organize and complete the records of a sample of such applicants to permit Trustee evaluation of their proficiency and the equivalency of their training to a standard 2-year approved program. Later that year, the Board considered the results of their evaluations and developed the following proposed amendment of the ARRT Bylaws for consideration by the ASRT and ACR:

> "The Board of Trustees proposes an amendment to the ARRT Bylaws which would permit the examination for registration of x-ray technologists trained in the U.S. military services who have completed a program of formal training of at least three months length and a total of at least 24 months training and/or experience in radiologic technology in the service under direct supervision of a board certified or board eligible radiologist, and of these, those who are employed in radiologic technology shall have demonstrated proficiency as evaluated by a board qualified radiologist and a registered technologist, or who are not currently employed in radiologic technology, are able to demonstrate proficiency as evaluated by the radiologist and technologist directors of an AMA approved educational program in x-ray technology. Upon satisfaction of the above requirements, candidate's applications will be reviewed by the Board of Trustees for special consideration for examination."

The Board instructed the Executive Director to seek legal counsel as to whether or not this proposal could be legally restricted to military candidates.

The Registry's involvement in educational programs continued unabated in 1972. The Alfred B. Greene program at Northeastern University was expanded to 30 participants when negotiations for an additional administration at a western location collapsed. The first administration of the Eastman Kodak Program in Effective Education took place on June 5 and another was scheduled for November. Four Trustees and the Executive Director participated in the 1972 ASRT Institute For Radiologic Technologists. However, a cloud was beginning to form over the Registry's educational programs. The Board of Directors of the ASRT was expressing strong dissatisfaction with the ARRT's educational activities because the Society believed that education in radiologic technology was more appropriately the province of the Society as opposed to the Registry. The ASRT Board had recommended that the Alfred B. Greene program be released to the Society for operation under Society direction at the earliest possible time. This proposal was not adopted by the Registry.

The ASRT presented a proposal for majority representation by technologists on the Registry Board which would lead to a Registry Board of six technologists and four radiologists effective July 1, 1973. This recommendation was not adopted.

The ARRT released the end-of-fiscal-year census figures in June 1972 marking its first half century of operation. There were 70,015 registered x-ray technologists in good standing, an increase of 8.4 percent over the count of June 30, 1971. There were 1,932 registered nuclear medicine technologists, an increase of 52 percent over the prior year's count. There were 611 registered radiation therapy technologists, a 45 percent increase over the previous year. Total number of certificates in good standing in all categories was 72,558.

At its July meeting the Board and its consultants in nuclear medicine technology discussed a proposal for conjoint examination and registration in nuclear medicine technology with the Board of Registry of the American Society of Clinical Pathologists and the Board approved the following resolution:

> "Resolved that the ARRT adopt as a stated objective the formulation of common testing, certifying, and registering policies in the field of nuclear medicine technology in cooperation with the Board of Registry of the ASCP."

The Board then appointed Trustees Loy Brown, M.D. and Julian Denny, R.T. and the Executive Director as an Ad Hoc Committee for purposes of liaison with the Board of Registry of the ASCP. The following was presented as a charge to the Committee:

> "Adopt concept and move to implement a common ARRT-ASCP examination by the Educational Testing Service as soon as practical. For first conjoint examination, submit draft of examination to Board of Registry of the ASCP for approval. For subsequent examinations, one representative of ASCP should participate in examination construction and review. Transportation for this consultant at ASCP expense, other costs at ARRT expense.
>
> Agree to accept ASCP approved applicants. Fee structure to be developed by the committee.
>
> Agree to immediate reciprocity. Newly certified should be informed of eligibility to join ASRT, ASCP, SNM and ASMT. They would have privilege to be listed in ARRT and ASMT official rosters for a yearly renewal fee.
>
> Agree to use universal certificate and offer design for ASCP approval. The certificate should show issuance by ARRT and ASCP registries and carry endorsement

of ASRT, ACR, ASMT, and SNM. Certificate to attest to certification in *Nuclear Medicine Technology*.

Agree to use a common pool of questions with subject emphasis based on the recommended teaching hours in the approved curriculum.

Submit the total proposal for conjoint activities to ASCP and each endorsing organization for formal acceptance."

The Board instructed the President to contact the President of the ASCP Nuclear Medicine Technology Registry Board seeking that organization to adopt a similar resolution.

1973

At the February Board meeting the Executive Director reported that as a result of the computerized typesetting of the *1972 Directory of Registered Technologists* and the utilization of the computerized list for generating the 1973 renewal statements on a new mailer, a new system of file maintenance was in operation. It was now possible to have future printouts of the directory, renewal statements or mailing lists without proofreading.

At that meeting the Board reviewed its policy on 3-time failers and unanimously approved a new requirement calling for those failing the examination for the third time to take three months of additional full-time training in an AMA approved school before they could be admitted to the examination again. The Executive Director was instructed to develop a suitable application form and administrative procedures to implement the new requirement.

The ARRT Board voted to continue its education programs for 1973. It was agreed that the ASRT should have input into both programs. The ASRT would be asked to appoint a consultant to serve on the Alfred B. Greene program selection committee and another to serve on the Eastman Kodak program selection committee.

The Board reconsidered its policy on military technologists who had trained prior to AMA approval of their educational programs in light of recent discussions with the ASRT in which it had been suggested that the ASRT Military Liaison Committee be utilized to review the qualifications of those individuals. The following motion was approved:

"That applications from technologists trained in the military prior to AMA approval of their service programs in radiologic technology be submitted by the

> Registry office to the ASRT Military Liaison Committee for an opinion of whether or not each candidate should be given the opportunity to take the Registry examination; and after an application is returned from said committee, the candidate's request be considered as a special case by the full Registry Board."

At that meeting the Board appointed a new committee to develop a program for demonstration of continued competence leading to re-certification.

The Registry Board reviewed a request from the ASRT that an ASRT Board Member report to the ARRT at ARRT Board meetings. In response, the ARRT Board approved a motion that a representative of the ASRT Board and a representative of the ACR be invited to make a report at each ARRT Board meeting and be available for consultation. The Executive Director was instructed to convey appropriate invitations to the ACR and the ASRT.

The Board reviewed a Trustee recommendation that a consultant in physics be used at future meetings to assist with examination construction. It was reported that the American Association of Physicists in Medicine (AAPM) was interested in having some input into ARRT examinations. The Executive Director was instructed to contact the AAPM to request a consultant to attend the mid-year 1974 meeting.

On February 22, 1973, the Executive Director and the Board of Trustees of the ARRT and their spouses had tea at the White House with First Lady Patricia Nixon in celebration of the Registry's 50th anniversary. At one time, Mrs. Nixon had worked as a radiologic technologist.

Throughout 1973 the ARRT continued its efforts to establish conjoint examination in nuclear medicine technology with the ASCP Board of Registry. Representatives of the ARRT, the ASCP and the SNM met in Philadelphia in March 1973 to consider a conjoint examination. Little was accomplished except to agree to another meeting of the same parties in September. That subsequent meeting was never held.

In July the Board discussed the concept of requiring proof of continued competence for continued registration. It was noted that the ASRT Education Committee was active in this area and would be recommending a program to the ASRT Board of Directors. It was the consensus of the ARRT Board that close cooperation with the ASRT in a program of required demonstration of continued competence would be desirable. The Board therefore approved the following statement to be presented to the ASRT

and ACR:

> "The ARRT accepts in principle the idea of recognizing evidence of continued competence and is prepared to evaluate proposals for such evidence submitted by the American Society of Radiologic Technologists and the American College of Radiology at the mid-year ARRT meeting and to make final recommendations to both sponsoring groups."

That statement planted the seeds of a program of mandatory continuing education for registrants in radiologic technology which would come to fruition nearly two decades later.

The Board also reviewed the results of the recently completed validity study which indicated a high positive correlation between success on the ARRT examination and performance in the employment situation as rated by supervisory technologists and radiologists.

The Board noted a continuing discrepancy between pass/fail scores for the May and November examinations. The score for both administrations had been based on failing 17% of the candidates taking the examination for the first time. This had resulted in a higher raw score being required to pass in May than in November. Candidates who took the examination in November and failed, repeated the examination in May and failed again, often received a raw score in May that would have been high enough to allow them to pass the previous November examination. A solution to the problem was proposed by the Educational Testing Service. The solution involved a process called "equating." This process used a group of 40 questions common to both examinations to permit a statistical relationship to be established between the scores of the May and November examinations. That relationship could then be applied to adjust the pass/fail scores of future examinations to eliminate any advantages or disadvantages to individuals due entirely to the time of the examination administration and the composition of the examinee group. The Board voted to begin the equating process by establishing the November 1973 examination as the "anchor form" of the examination.

The Registry continued its involvement in educational programs in 1973, but less enthusiasm was being shown by the Trustees, participants and the sponsoring organizations. Although the Eastman Kodak Program in Effective Education was still popular, applications received for the year's Alfred B. Greene Program of Continuing Education in Radiologic Technology were

barely sufficient to fill the seats. The Board voted to interrupt the Alfred B. Greene program in 1974 for further evaluation. Enthusiasm was also waning for continued ARRT participation in the annual Institute for Radiologic Technologists conducted by the ASRT. Although the ACR had been involved in the Institutes from the very beginning, Radiologist Trustees indicated that the ACR was not interested in continuing its participation if socio-economic issues were to be a part of the program. It was the consensus of the Board that if the ACR and ARRT were to be carried on the Institute program as participants, they should be involved in Institute planning and both organizations would need assurance of this fact before participating in future Institutes.

At the November 1973 examination administration in St. Louis, a registered technologist took the examination in x-ray technology in place of his brother who had previously failed the examination three times. The impersonation was witnessed by other examinees and reported to the Registry. Following an intensive investigation and a formal hearing of charges, the Board revoked the certificate of the R.T. and denied the application of the candidate. That incident pointed out the need for new security measures to prevent "ringers" from participating in ARRT examinations, particularly in light of new rules which limited the number of examination attempts.

1974

At its February meeting the Board approved the applications of the first eight technologists recommended for examination by the ASRT Military Liaison Committee under the arrangement approved by the Board at its February 1973 meeting.

The Board reviewed its past efforts to establish a conjoint examination in nuclear medicine technology with the Registry of Medical Technologists of the American Society of Clinical Pathologists. Since its initial meeting with representatives of the ASCP in 1962, the ARRT had been unsuccessful in every attempt to come to an agreement with the other registry. The Board decided to no longer actively pursue conjoint examination with the ASCP.

The Board discussed a movement for certification in ultrasound technology. Several medical specialties were interested in the new modality. Radiology was particularly interested because imaging was involved. It was noted that most practicing ultrasound technologists were registered x-ray technolo-

gists. Two organizations of ultrasound technologists had been formed and some people were reported to be writing a curriculum and planning to establish a registry. The Board instructed the Executive Director to contact the sonographers and advise them of the interest of the ARRT.

In July 1974, H.A. Mueller, M.D. of Dallas, Texas began the first of his two, 4-year terms on the ARRT Board. He had been preceded on the Board by his wife, Patricia O'Reilly Mueller, R.T., who had served from 1968 to 1972. The Muellers were the only husband and wife to have both served on the Board.

At its July meeting the Board learned that certification in nuclear medicine technology could become further fragmented. The Technologist Section of the Society of Nuclear Medicine was considering a plan to develop its own registry in nuclear medicine technology.

The Board voted to upgrade ARRT requirements for examination in nuclear medicine technology. Effective July 1, 1976, examination would be restricted to graduates of AMA-approved programs and those participating in other formal training programs.

A representative of the ASRT reported that the Society was interested in assuming the sponsorship of the Eastman Kodak Program in Effective Education but that it was not prepared to assume the Alfred B. Greene Program in Continuing Education.

The Executive Director presented a proposal to establish committees to write examination questions, called items, in all three categories of certification. The chairman of each committee would be a member of the Registry Board of Trustees who would receive instruction in the proper style for writing questions at a special seminar presented by the Educational Testing Service. Each chairman would then instruct each new member of his or her committee. The Board approved the proposal and the Executive Director was instructed to make arrangements with ETS to hold the first seminar in early fall. Recommendations for committee members were requested from the ASRT, ACR, ASCP(MT), SNM and the Technologist Section of SNM. The following Trustees were appointed chairmen of the first ARRT Item Writing Committees:

X-Ray Technology	Leslie Wilson, R.T.
Nuclear Medicine Technology	Charles D. Smith, M.D.

Radiation Therapy Technology Dante DiLella, R.T.

The ARRT's historical stance of non-cooperation with state licensing agencies was softened somewhat when Howard Goldman, Director of the New York State X-Ray Technology Licensing Bureau, and Robert Frankel of the Bureau of Radiological Health of the U.S. Department of Health, Education and Welfare (HEW) were allowed to present a proposal for a joint state-ARRT examination in x-ray technology. Mr. Goldman described the National Association of Boards of Radiologic Technology of which he was chairman. The NABRT was being funded by HEW for purposes of obtaining uniform standards and examination among those states which licensed radiologic technologists. Mr. Goldman proposed that the ARRT examination be established as the national examination for both ARRT certification and state licensing. Mr. Frankel expressed the opinion that the concept of a national examination would be desirable and that there were precedents in other professions. It was the unanimous decision of the Board of Trustees that the NABRT should be informed that the ARRT was very much interested in the concept but that the Board must consult with both sponsoring organizations and legal counsel before an acceptable set of criteria could be drawn up for presentation to the NABRT for formal consideration by all state representatives in that group.

1975

The Registry, for the first time, was forced to defend its trademark, ARRT, against infringement by another organization. The National Board for Respiratory Therapy, Inc. had begun to use the abbreviation ARRT to designate "American Registered Respiratory Therapist." The ARRT Board instructed the Executive Director to authorize legal counsel to take whatever action was necessary to cause the NBRT to cease and desist in the use of the initials ARRT.

This was also the year when the ARRT would get out of the education business. In February the ASRT announced that other organizations would not be invited to attend its 1975 Institute planning meeting. Registry participation in the annual ASRT Institute for Radiologic Technologists would cease because the Board had previously decided to withdraw if the ARRT and ACR were excluded from planning meetings. Due partly to continuing ASRT opposition to the Registry's educational efforts, the Alfred B. Greene

Program of Continuing Education was not offered in 1975 and ARRT sponsorship of the Eastman Kodak Program in Effective Education would be discontinued following the November 1975 session.

The ARRT continued its efforts to prevent further fragmentation of certification in nuclear medicine technology by making overtures to the Technologist Section of the Society of Nuclear Medicine. That group had previously been invited to provide input to the ARRT examinations by appointing members to serve on the nuclear medicine technology item writing committee. The President and Vice-President of the SNM-TS attended the February 1975 ARRT Board meeting to discuss the possibilities for a conjoint registry in nuclear medicine technology. They reported that their organization was not interested in taking over the functions of examination and certification, but desired more input into the process. Following that meeting, the Board cast about for ways which might allow the SNM-TS a degree of input to the examinations which would be acceptable to its membership but not violate ARRT Bylaws. It was decided to appoint standing examination committees in all three categories of certification. The committees would be responsible to the Board for reviewing and developing examinations in each discipline. The composition of the committees would be:

Nuclear Medicine Technology	ARRT Trustee as ACR representative ARRT Trustee as ASRT representative SNM Technologist Section representative ARRT Trustee as chairperson
Radiation Therapy Technology	ARRT Trustee as ACR representative ARRT Trustee as ASRT representative ASRT Appointee ARRT Trustee as chairperson
X-Ray Technology	Two ARRT Trustees as ACR representatives Two ARRT Trustees as ASRT representatives ASRT Education Committee Member

In July the Board adopted some amendments to the *ARRT Articles of Incorporation and Bylaws* upon recommendation of legal counsel. Of particular importance were amendments to ARTICLE VII of the BYLAWS which established due process for denial of applications, revocation of certificates of registration, discipline of registrants and appeal procedures.

1976

In February the Board learned that its overtures to the SNM-TS had been in

vain because that organization had decided to form a third registry for nuclear medicine technologists. The Board expressed hope that some mechanism could be established whereby the same examination could be used by all registries.

In June arrangements were made to provide high quality reproductions of radiographs for use in Registry examination booklets beginning with the November 1976 examinations. The Educational Testing Service already had the capability of providing high fidelity printing of photographs in examination booklets. Previously, illustrations in ARRT examination booklets had been restricted to line drawings, charts and graphs.

Also in 1976, the Registry was advised that the AMA Council on Medical Education had delegated responsibility for allied health education accreditation to a newly formed Committee on Allied Health Education and Accreditation (CAHEA). Future publications of the ARRT eligibility requirements would call for completion of a CAHEA accredited program rather than one approved by the Council on Medical Education of the American Medical Association.

1977

At its February meeting the Board learned that the Registry of Medical Technologists had withdrawn from the Board of Registry of the ASCP and had declared their intent to form an independent registry. This could result in there being four separate registries in nuclear medicine technology.

It was reported that the ARRT lawsuit against the National Board for Respiratory Therapy had been settled and that the NBRT had agreed to cease using the initials "ARRT" in connection with the names of its registrants.

In response to many questions and some complaints about the administration of ARRT examinations by the Educational Testing Service, the Registry initiated the practice of assigning official observers to be present at selected ETS test centers during the administration of ARRT examinations beginning with the May 1977 examinations. The observers at that administration were favorably impressed with the ETS test center procedures, particularly the security aspects.

Later that year, the Registry Board held its first formal appeal hearing under

provisions of Article VII of the Bylaws as amended in July 1975. It involved a candidate who had been determined ineligible by Registry staff because he did not appear to have completed the entire educational program in which he was enrolled. Legal counsel for the candidate questioned the staff decision and was advised of the appeal procedure, the first stage of which was a complete review of the candidate's file by the entire membership of the Registry Board of Trustees at a regular meeting of the Board. In accordance with that procedure, the candidate's application was reviewed by the Board at its February 1977 meeting. The Board found the candidate ineligible on the basis of information at hand. Subsequently, counsel was advised of the his client's right to carry his appeal to a higher level by requesting an individual hearing of his case before the Registry Board of Trustees, a subcommittee thereof, or a hearing officer appointed by the Board of Trustees. At that hearing he could present evidence or testimony in person or by counsel. The requested hearing was held in June 1977 in conjunction with the annual meeting of the ARRT Board of Trustees. The candidate and the coordinator of his educational program appeared and gave testimony. The Registry, the candidate and the educational program were all represented by legal counsel. Following that hearing, a majority of the Board voted to approve the candidate's application for examination.

That same year, the Board addressed a problem which had been growing since 1962 when the Registry had changed its name from The American Registry of X-Ray Technicians to The American Registry of Radiologic Technologists. The primary purpose for the name change had been to substitute radiologic technologists, an umbrella term intended to indicate diagnostic x-ray technologists, nuclear medicine technologists and radiation therapy technologists, for x-ray technicians, a term referring to the diagnostic x-ray technician/technologist only. However, some individuals and organizations had chosen to use the word radiologic technologist in reference to the diagnostic x-ray technologist only. This use of the term radiologic technologist had gained wide acceptance. The Board voted to adopt the internationally understood term radiographer to designate the diagnostic x-ray technologist and to continue to utilize nuclear medicine technologist and radiation therapy technologist to designate the other specialties within radiologic technology. Radiologic technologist would continue to be used as the umbrella term encompassing all three disciplines.

The Board also acted to formalize the process of appointment of outside consultants to serve on its examinations committees. Consultants with special expertise would be appointed in all three disciplines. A consultant in radiation physics would be appointed to serve as needed. Consultants would be invited to serve for one year, the invitations being submitted following each annual Board meeting. No consultant's tenure would exceed four years. The consultants appointed for 1977-78 were:

Radiography	Wanda Wesolowski, R.T.
Nuclear Medicine Technology	C.D. Maynard, M.D. Glenn Isserstedt, R.T. C. Craig Harris, M.S.
Radiation Therapy Technology	Harold Silverman, R.T. Carole Sullivan, R.T.
Radiation Physics	Phillip Rauch, M.S.

The ARRT conducted two separate programs to enhance communications with the radiologic technology educational community. The first was the "Dialogue With the Registry," an open question and answer session during the July 1977 ASRT Convention in Washington, D.C. During that session the Registry Trustees and Executive Director responded to questions from an audience of educators, technologists and students. Among the subjects discussed were examination scheduling, test center problems, delay in the release of examination results, relationship of the curriculum guide to the examination in radiography and the release of score reports to schools. The second was a 2-day invitational seminar on Registry examination procedures for radiography educators held in Minneapolis. Workshops in examination construction, subject categories, terminology, references and Registry application procedures were presented by Registry Trustees and staff. Each participant had been asked to bring ten examination questions and a list of textbooks used in his/her program. A mini-registry examination was constructed and administered using the questions provided by the participants. This was followed by a discussion and critique of the examination. A tour of the Registry office was also provided.

1978

At its February meeting, the Board considered the possibility of a future

legal challenge to its policy of denying examination to American trained radiographers who were not graduates of accredited schools regardless of the demonstrated competence of the individual. An ad hoc committee of Trustees was appointed to determine whether or not there was a need for establishing alternate means of attaining eligibility for examination.

At that meeting the Board reviewed and accepted a job description which had been prepared for a new staff position titled Director of Psychometric Services. This individual would be responsible for coordinating the development of the certification examinations. A search committee was appointed to assist the Executive Director in identifying a qualified individual.

The Board reviewed its agreement with the Bureau of Radiologic Technology of the New York State Department of Health. Since 1965, the ARRT had been providing the Bureau with current ARRT examinations and statistics. In turn, the Bureau had agreed to license technologists who passed the ARRT examination without the necessity of taking the New York State licensing examination. The Bureau had unilaterally abrogated the agreement by requiring technologists who passed ARRT examinations to take the state examination for licensure. The Board voted to cease all such cooperation at once.

The Board considered a request from the California Department of Health to establish reciprocal recognition of certification of radiologic technologists. The Board decided not to honor that request. However, the Board voted to approve a request for an agreement of reciprocity of certification in radiography and radiation therapy technology with the Society of Radiographers of South Africa.

The Board considered a request from the ASRT to increase the number of technologists on the Board by the addition of a nuclear medicine technologist and a radiation therapy technologist. It was noted that should this recommendation be accepted the ACR would likely request the addition of two radiologists to maintain the balance present in the composition of the Board. It was the unanimous decision of the Board that the size and structure of the Board not be changed.

It was called to the attention of the Board that some candidates who had applied for and been found eligible for examination had never passed the examination, but had managed to obtain and hold employment on the basis

of being "registry eligible." To put a stop to that practice, the Board ruled that beginning July 1, 1978 candidates would have only three years from the time they attained eligibility to pass the examination for registration. Candidates who elected to postpone an examination for which they were eligible would be subject to the same time limitation as those who did not elect to postpone. The Board also voted to amend the ARRT Bylaws to restrict the number of times a candidate could take the examination to three attempts. The current rules allowed a fourth attempt when a remedial training program was completed following a third failure.

In July the Executive Director presented a proposal to complete the computerization of the Registry. Under the existing system, data processing was done out-of-house by a computer service bureau. Mr. McGowan proposed leasing a minicomputer system which would be sufficient to allow all ARRT files to be introduced to in-house computer storage. Once the change-over to the new system was completed, data processing costs would approximate current costs but provide the many advantages of in-house control. The Board approved the proposal and authorized installation of the new system as soon as possible.

Noting that its refusal to enter into an agreement for reciprocity of certification with the state of California had caused some controversy in that state, the Board decided to issue the following position statement on reciprocity with state licensing boards:

> "The American Registry of Radiologic Technologists, like other national certifying boards, has not, and cannot, enter into reciprocity agreements with individual state licensing boards for the following reasons:
>
> 1. National certifying examinations obviously must reflect nationally accepted educational standards, policies, and procedures developed by the professional community;
> 2. State licensing examinations, policies, and procedures reflect local considerations;
> 3. There is no standardization of licensing examinations among the states;
> 4. Examination structure, content, test specifications vary from state to state;
> 5. A state may or may not recognize the examination of other states;
> 6. The method of establishing pass/fail scores usually has been established on the basis of local considerations;
> 7. Mechanisms for measuring the validity of state licensing examinations may be questionable largely because of the compulsory nature of licensing examinations;
> 8. Licensing examinations are subject to management by political and bureaucrat-

ic regulations adopted and amended by non-professional personnel;
9. Radiologic Technology is usually in a minority representation on state licensing boards and appointments are usually of a political nature;"

It was noted that this position would not preclude the ARRT from continuing to cooperate with state licensing boards which recognized and accepted the ARRT credential in lieu of state examination.

In a related development, the Board was officially notified by the Supervisor of Radiologic Certification of the New Jersey State Licensing Board that her Board had voted to recognize the ARRT certificate in lieu of a state licensing examination.

On July 1 the Registry began recognition of registrants participating in the Evidence of Continuing Education (ECE) program sponsored by the ASRT. Those who earned 100 ECE points within a 3-year award period would be issued a distinctive credential by the ARRT. ECE Points could be earned in a number of ways including participation in ARRT examination seminars.

In July the Board received the report of its ad hoc Committee on Alternate Eligibility Requirements. It was the consensus of that Committee that its future efforts should be directed toward providing authority in the ARRT Bylaws for the Registry Board to give special consideration only to applicants who were technically ineligible for examination because of circumstances beyond their control. The Committee presented the Board with a draft amendment to the ARRT Bylaws to provide authority for implementation of alternate requirements.

A second invitational seminar for radiography educators and practicing radiographers was held at Anaheim, California in July. Stated objectives of that seminar were to get a relevancy evaluation of a representative Registry examination and to obtain performance statistics and a relevancy evaluation of the subcategories of the new ASRT curriculum which had been published in September, 1976 and subsequently endorsed by the Joint Review Committee on Education in Radiologic Technology for utilization by all accredited radiography programs effective January 1, 1979.

In November the ARRT Radiography Examination Committee met in Chicago to develop a preliminary draft of test specifications based on the new ASRT curriculum utilizing information gleaned from the the educational community during the invitational seminars and subsequent dialogue.

By the end of 1978 the input of records into the computer for all ARRT registrants had been completed leaving the Registry fully computerized and completely independent of outside data processing services. The operations previously contracted out which the Registry could now do in-house included keying, addressing of renewal applications, printing candidate rosters, printing end-of-year post examination statistical breakdowns, high speed printing of mailing labels, envelopes and letters and high speed sorting of large mailings.

1979

At its February meeting, the Board was introduced to its new Director of Psychometric Services, Jerry B. Reid, M.S. of University Park, Pennsylvania. He would join the Registry staff on a full-time basis April 1, 1979 following completion of his doctoral dissertation in educational measurement at Pennsylvania State University.

The Board noted that several states had recently indicated an interest in cooperating with the Registry in areas of mutual concern. In response, the Board passed the following resolution:

> "It is hereby resolved that The American Registry of Radiologic Technologists cooperate with the state licensing boards in the implementation and/or execution of state licensing/credentialing/ proficiency examinations for radiologic technologists including examination content, administration, scoring and analysis for those states requesting these services."

In June the Registry hosted a meeting with the Multi-State Advisory Committee for Licensing Radiologic Technologists. Present were representatives from the states of Arizona, California, Florida, Hawaii, Kentucky, Minnesota, Montana, New Jersey, New York, Oregon, Vermont, West Virginia and the Commonwealth of Puerto Rico. Participants discussed the admission of state-approved examinees to ARRT examinations, fees, score reporting and the special needs of the individual states. The President of the Registry Board of Trustees extended an offer from the Registry to admit state-approved candidates for state credentialing to any ARRT examination with the understanding that the results of the examination could be used by the state for purposes of state credentialing but would not qualify the candidate for ARRT certification. Graduates of AMA-accredited educational programs in the licensing states could continue to apply for examination for national registration in the usual way. Recognition of passing the examina-

tion in satisfaction of state examination requirements would remain at the discretion of the state agency.

Following that meeting, representatives of the New York Bureau of Radiologic Technology, the New Jersey Bureau of Radiation Protection, the Kentucky Bureau of Health Services and the Oregon State Board of Radiologic Technology agreed to use the ARRT examination as their state licensing examination effective with the November 1979 examination administration. Representatives of several other state radiologic technology credentialing agencies indicated that they were attempting to get the necessary legislative and/or administrative authority to commit their states to participate.

At the July 1979 meeting of the Registry Board of Trustees, the Director of Psychometric Services presented his first report. Doctor Reid identified areas of need and presented a master plan of major and minor projects to meet those needs in the next two years. He pointed out the need for a job analysis to define what should be covered on the examinations. He emphasized the need for detailed test specifications so that different forms of the same test would measure the same attributes. He recommended the development of a second dimension of test specifications using cognitive levels so that the tests would reflect the levels of knowledge necessary for functioning as an entry level technologist. He reviewed the status of the test item banks and recommended that the banks be aggressively edited. He also recommended that the test item banks be computerized for greater facility in item updating and test construction. The Board accepted all of Dr. Reid's recommendations.

The Board discussed the issue of administrative independence at the July meeting. While the incorporation of the Registry in 1936 established it as a separate organization, the current ARRT Bylaws required that any amendments to the Bylaws had to be approved by the ASRT and ACR. This arrangement was inconsistent with the standards which had been established for certification organizations by the National Commission of Health Certifying Agencies. The Board voted to strike this provision from its Bylaws. The ASRT and ACR subsequently approved the change.

On July 6, 1979, ARRT President-elect Neta Mcknight, R.T. appointed a task force on New Imaging Modalities to monitor such activities as ultrasound

technology and digital imaging.

In September new content specifications for the radiography examination were completed. The new test specifications were based on the September 1976 *ASRT Curriculum Guide for Programs in Radiologic Technology* and incorporated much of the work of the practicing and teaching professionals who participated in the 1977 and 1978 ARRT examination seminars. Copies of the test specifications were subsequently mailed to all accredited radiography programs and their recognized affiliates and it was announced that the May 1980 administration of the examination for registration in radiography would be constructed according to those specifications. The new specifications called for a test containing 250 questions, an increase of 50 questions over the contents of previous forms of the examination.

It was announced that beginning with the November 1979 administration, the examination in radiography would not contain any questions on radiation therapy. Previously, five of the 200 questions in the radiography examination had been devoted to therapy. During the 1950s, the radiography examination had included increasing numbers of questions on therapy, reflecting the involvement of some radiographers in therapy. The establishment of a separate examination in therapy marked the beginning of a gradual phasing out of inclusion of these questions within radiography. This action marked the culmination of that process.

In October the Registry hosted an invitational seminar for radiation therapy practitioners, educators and administrators in New Orleans, Louisiana preceding the annual meeting of the American Society of Therapeutic Radiologists. The seminar consisted of a workshop in which participants were asked to evaluate proposed test specifications and job relatedness of subject categories from the *Syllabus for Radiation Therapy Technology Education* as published by the ASRT. The purposes of that seminar and similar seminars to follow were to involve the educational and professional communities at all stages of the process of developing new test specifications in radiation therapy technology to insure job relatedness and content validity.

In anticipation of the introduction of the 250 question radiography examination format, the Registry requested the Educational Testing Service to perform a time study at the November 1979 examination administration. It was the conclusion of ETS that three hours would be insufficient time for

most examinees to complete a 250 item test. Beginning with the May 1980 administration, all examinees would be allowed four hours in which to complete the test.

Chapter Seven
1980~1989

Overview

In the '80s the Registry would continue to expand into new areas of activity while bringing to fruition programs seeded in the previous decade. It would implement radical changes in its *Bylaws* and *Rules and Regulations*. A Bylaw amendment would provide authority for Special Eligibility Requirements under which technologists who were not graduates of CAHEA-accredited programs could apply for examination on the basis of their having completed training equivalent to that of a graduate. Restrictions on re-examination would be abolished. The Registry would enter into agreements with state credentialing bodies to administer ARRT examinations to candidates for state licensure. At the request of licensing states, the Registry would develop and administer job related examinations for state licensure of technologists performing a limited scope of practice in radiography. The ARRT would complete a job analysis project and develop and administer the first examinations based upon that project in radiography, nuclear medicine technology and radiation therapy technology. Implementation of the job related credentialing examinations would cause the Registry to take a hard look at its reciprocity partners, then abolish all reciprocal agreements with foreign credentialing bodies. The Registry would terminate its working agreements with the Educational Testing

Service when the capabilities of ARRT staff and equipment reached the point where the Registry could do for itself everything ETS had been doing for it since 1972. The ARRT would develop content specifications for an advanced level examination in Cardiovascular-Interventional Technology and prioritize the development of advanced level examinations in four additional modalities. The ARRT would construct and occupy a new headquarters building near the Minneapolis-St. Paul International Airport. On June 30, 1989 a count of certificates in good standing showed a total of 179,941 including 163,630 in radiography, 9,784 in nuclear medicine technology and 6,527 in radiation therapy technology.

1980

At its February meeting, the Registry Board of Trustees adopted a Bylaw amendment to authorize alternate qualifications for admission to the certifying examinations and instructed Registry staff to develop specific criteria for evaluating special cases as authorized by the amended Bylaws. This would mark the first time since July 1966 that anyone other than a graduate of an accredited educational program would be eligible for the radiography examination. Graduation from an accredited program had become the sole eligibility route for radiation therapy technologists in July 1974 and for nuclear medicine technologists in July 1976. The Board also reviewed and accepted the *ASRT Code of Ethics* and voted to refer to that code in a future revision of the *Code of Ethics for Registered Technologists*. The Board voted to collaborate with the University of Minnesota Department of Epidemiology in a study of cancer risk in radiologic technologists. Subsequently, a pilot study, using computerized ARRT records, was undertaken to establish methodology and feasibility for a large scale national project. The pilot study led to a full study under a grant from the National Institutes of Health. This landmark study would continue through the 1990's.

The Board reviewed a report from the Registry's legal counsel which pointed out areas of inconsistency between the *ARRT Bylaws* and its companion document, the *ARRT Rules and Regulations*. It was contended that the *Bylaws* should contain only the authority for the functions of the Registry whereas the *Rules and Regulations* should cover the administration of the programs of examination and certification of radiologic technologists authorized under the *Bylaws*.

Legal counsel also reported that a recent decision by a federal judge had struck down a 56-year-old rule of the Colorado Supreme Court which had closed the state bar examination to applicants who had failed it three times. The judge ruled that the restriction on re-examination violated the 14th Amendment guarantees of due process and equal protection. In the opinion of the Registry's lawyer, the precedent of the Colorado bar examination case was directly applicable to the ARRT. He recommended that the *Rules and Regulations* be amended to remove the restriction on the number of times a candidate could repeat the examination for registration. The Board instructed staff to draft the necessary changes for consideration at the next meeting.

The states of Arizona, Kentucky, Montana, New Jersey, New York, Oregon, Vermont and West Virginia had made formal agreements to use the ARRT examination for state licensure purposes by 1980.

The Board considered a request from the ASRT Military Liaison Committee to establish a test center in Europe for the November 1980 test administration. The Committee estimated that there would be more than 70 Registry-eligible military technologists in Europe in November.

April 1, 1980 marked the first anniversary of the ARRT Division of Psychometric Services. New radiography test specifications were completed and implemented and new radiation therapy test specifications neared finalization. Preliminary work had begun on development of new content specifications in nuclear medicine technology. The *ARRT Item Writing Manual* had been developed and distributed to all accredited radiography, radiation therapy and nuclear medicine technology programs. A new *ARRT Bulletin of Information* had been completed for distribution to all approved applicants for ARRT examination. It provided answers to many questions a candidate might have about the Registry and its examination processes. The Division had also introduced a new score report form which used scaled scores both in the categorical sections and the total test.

In July, the Board considered a formal statement of the purpose of the examinations in radiologic technology. It was noted that there was an urgent need for such a statement in view of the transitional nature of the current test development process. In the past, ARRT examinations were based directly on an approved curriculum and thus represented a program-end

achievement test. Recent trends had taken the Registry toward a job-related style of examination. The Board agreed that "the purpose of the examinations in radiologic technology was to assess the knowledge and cognitive skills underlying the intelligent performance of the tasks typically required of a staff technologist at entry level." This formal statement of purpose for the examinations created a philosophical foundation upon which future test development procedures were based.

Also in July 1980, the Board adopted revised *Bylaws* and *Rules and Regulations* based on draft documents prepared by staff and legal counsel. The new *Bylaws* stated the purposes of the Registry, described its organizational and corporate functions and provided the overall operating concepts, philosophy and authority.

The new *Rules and Regulations* contained the eligibility requirements for the examination and registration of radiologic technologists. Five major changes in eligibility requirements were reflected by the new *Rules and Regulations*.

1. Elimination of restrictions on re-examination.
2. Elimination of the 3-year time limit limit on eligibility for examination and re-examination.
3. Upgrading of requirements for examination in nuclear medicine technology.
4. Elimination of special provisions for foreign-trained technologists.
5. Authority provided for Board consideration of "special cases."

The normal requirements for examination for registration were contained in Article I, Section B of the *Rules and Regulations* and called for successful completion of a program of formal education in radiography, nuclear medicine technology or radiation therapy technology which has been approved by the Committee on Allied Health Education and Accreditation (CAHEA). Authority for consideration of special cases of eligibility was provided by Article I, Section C which stated that "The American Registry of Radiologic Technologists may consider alternate qualifications for admission to the certifying examinations in special cases in which the applicant proves to the satisfaction of the Board of Trustees circumstances precluding satisfaction of eligibility requirements stated in Section B above and proof of qualifications which are equal to or in excess of same."

Examples of circumstances which the Registry would consider under Article I, Section C included, but were not limited to, situations where a can-

didate had foreign training not covered by reciprocity and situations where military duties prevented completion of the CAHEA-accredited educational program specified in Article I, Section B.

The Board instructed Registry staff that, effective immediately, all candidates found ineligible under the regular eligibility requirements would be advised of their right to request consideration as special cases under provisions of Article I, Section C. Also, candidates who had applied for examination and been found ineligible prior to July 10, 1980 could request consideration as special cases under Article I, Section C. Prior to requesting consideration as a special case of eligibility, each candidate would need to have previously submitted a formal application, paid the usual application fee and been determined ineligible under the regular requirements. All requests for consideration as special cases would have to be in writing and include a service fee of $50.00. Registry staff would be responsible for processing all requests for special consideration and for scrutiny and investigation of all documents and statements submitted in support of such requests. Final determination of eligibility for examination for registration would be made by the Registry Board of Trustees.

Subsequently, the Registry published the educational and experience requirements for consideration of special cases of eligibility under provisions of Article I, Section C as follows:

A. A baccalaureate degree in the biological or physical sciences plus three years of acceptable full time experience in the specific discipline within the last seven years, or

   Five years of acceptable full time experience in the specific discipline within the last seven years, plus

B. Formal education in Radiation Protection, Patient Care Skills, Anatomy and Mathematics.

In addition to the above subjects, the applicant must have completed specialized coursework in the discipline in which he/she has applied for examination. The disciplines and required courses are the following:

Radiography-Radiographic Positioning, Principles of Radiographic Exposure and Film Processing

Nuclear Medicine Technology-Instrumentation, Chemistry, Radiopharmacy and Radiobiology

Radiation Therapy Technology-Oncology, Treatment Planning, Radiobiology and Elementary Pathology

In October Task Advisory Committees in radiography, nuclear medicine technology and radiation therapy technology met in Minneapolis for orientation to the ARRT job analysis project. In November and December of 1980, task observations were conducted at the places of employment of a random sample of entry-level radiographers, nuclear medicine technologists and radiation therapy technologists. At each observation site, three to four hours were spent talking with and observing the entry-level technologist. The information gathered in the observations was placed in a standard task statement format, and the individual tasks were then grouped by major areas to form first-draft task inventories for distribution to the three Task Advisory Committees. The Committees would meet in January 1981 to produce a second-draft task inventory. Each task on the respective task inventories would then be rated by a random sample of entry-level radiographers, nuclear medicine technologists and radiation therapy technologists on the factors of frequency of performance, consequence of error, difficulty, and experience level necessary to perform the task.

1981

It was announced that examinations in radiography, nuclear medicine technology and radiation therapy technology would be administered three times per year on the third Thursday of each January, July and October. Previously examinations had been administered semi-annually in May and November. The increase in examination service was made possible by the further computerization of ARRT processes.

In February the Board of Trustees directed Registry staff to begin a review of all reciprocity agreements with foreign credentialing bodies. Under those agreements, technologists who had passed examinations and been certified by the British Society of Radiographers, the Canadian Association of Medical Radiation Technologists, the Australasian Institute of Radiography or the Society of Radiographers of South Africa could be certified by the ARRT without examination provided that they were in good standing with their native organization. The Board noted that the agreements with the British and the Canadians dated back to 1952 while the agreements with the Australians and the South Africans were made in 1968 and 1978, respective-

ly. Since the ARRT examination was evolving into an examination focused on the professional job responsibilities of the entry-level technologist practicing in the United States, there was some concern that the foreign examinations were no longer equivalent.

The Board considered its first 28 applications under the special eligibility requirements authorized under the *ARRT Rules and Regulations* as amended July 10, 1980. The Board approved 18 applications and denied 10. The Board accepted a recommendation from the ASRT that a course in physics be added to the special eligibility requirements.

The Board also considered requests from the ASRT and ACR for the Registry to begin a program of examination and credentialing in diagnostic medical ultrasound. The Board decided that considerations of time and expense would make it impossible for the ARRT to undertake the development of an examination in any new modality in the near future.

The Board reviewed its existing communications outlets. It was noted that a semi-annual *ARRT Newsletter* was being mailed to all accredited educational programs and that a newly revised *Bulletin of Information* was available for mailing to anyone requesting general information on the ARRT. In the past, current information had been provided to all registrants in the *Directory of Registered Technologists*. However, this would be less effective in the future when the directory would be published every other year. The Board agreed that increased public relations opportunities would be needed in the future. The Board decided to become more visible at meetings of medical and allied health organizations by upgrading the exhibit it had constructed for the 50th anniversary celebrations and using it at future national meetings such as that of the RSNA.

The Board also moved to re-establish ARRT Item Writing Committees in each category of examination. The Committees would be separate from the existing Examinations Committees and would consist of five members per Committee appointed by the Board to include both educators and practicing technologists. Each Committee would attend an item writing workshop conducted by the ARRT. Committee members would assemble as a group only for their initial workshop. Subsequent work would be performed at home. Appointments to the Item Writing Committees would be for a one year term with replacements made from time to time as necessary. Item

writers would be required to sign a release for items submitted with appropriate copyrights secured by the Registry.

The Registry Board expressed its intent to move toward policies wherein the annual registration process would function to indicate the continued competence of registrants. The initial step in that direction would be to indicate the status of each registrant as either active or inactive in the *Directory of Registered Technologists* which was published every two years. This would be initiated with the 1982 renewal of registration process.

The Board considered a staff proposal for processing renewal applications for registration on a year around basis with the objectives of cost containment and faster return of credentials. In its formative years, the Registry had adopted the practice of sending out all registration applications at the end of each calendar year with fees payable on the first of January. As the Registry grew, its small staff had to be augmented by overload help in January and February to insure prompt processing of renewals. Prior to the computerization of the Registry in 1979, as many as 20 extra employees were needed. With computerization, it was possible to reduce overload help considerably. However, the sheer volume of paper to be processed eventually prevented further cost containment in the personnel area without materially increasing application turnaround time. It was noted that if each registrant renewed registration annually in the month of his/her birth instead of at the beginning of each new calendar year, there would be very little fluctuation in Registry staff workload due to the processing of renewal applications. This would permit full-time Registry staff to process renewals on a continuous basis, eliminating the need for overload help. The Board approved the proposal effective for 1983.

The European test center for military personnel and other eligible candidates was discontinued following the July 1981 examinations. Testing in Europe had been resumed in November 1980 based upon the expectation that there were at least 75 Registry eligible military technologists in Europe. Only 10 candidates showed up for examination in November 1980. The European test center was continued for the July 1981 administration to provide for the possibility that there were more Registry eligible candidates in Europe than had been indicated by the November 1980 attendance. However, only three candidates appeared for the July 1981 test in Europe. All three had previously taken and failed the examination.

In August the Registry office acquired a Wang word processing system capable of handling both routine correspondence as well as specialized functions for examination development and construction. The entire ARRT library of test questions were entered into the memory of the system permitting the immediate display and printing out of test questions, sections and complete examinations. The history of every test question would be immediately at hand. Construction of new test forms could be done in a fraction of the time previously required and without the introduction of the human error inherent in hand typing test questions and forms. The acquisition of word processing equipment along with the data processing equipment already in place provided the ARRT with the capability of doing for itself everything which the Educational Testing Service had been doing for the Registry since November 1972.

1982

The Registry terminated its working arrangement with ETS immediately following the January 1982 examination administration and Registry staff scurried to prepare for the July 1982 examinations. A new *Examination Supervisor's Manual* and a revised *Bulletin of Information* for examinees were prepared. New application forms and answer sheets were designed and printed. Arrangements were made for optical scanning of the answer sheets. Computer programs were written for equating, printing of score reports and similar functions. Examination supervisors were employed and examination centers established at post secondary educational institutions in 98 major cities. Arrangements were made for rapid shipping of examinations materials to and from the examination centers.

In July the Board considered a staff proposal for an integrated data processing and word processing system in the Registry office. It was becoming apparent that the maintenance of separate data and word processing systems had introduced unnecessary complication and duplication into the Registry office routine. Separate physical space was required for both systems. Each had its own keyboards, memory system and printer. Systems were becoming available to combine word and data processing using a common keyboard and memory system. A state of the art word/data processing system could be leased at a cost lower than the Registry was currently paying to lease separate systems. The Board authorized the lease of a new Wang minicomputer system for delivery and installation in 1982. Key

personnel were scheduled to attend an intensive four day training program to provide an orderly transition to the new system.

In October representatives of the Nuclear Medicine Technology Certification Board and the ARRT met informally in Minneapolis to discuss matters of mutual interest and to provide the NMTCB representatives an opportunity to review the facilities and procedures used for ARRT examinations. All present agreed on the desirability of having only one examination for certification in nuclear medicine technology. There was considerable discussion of possible means to achieve the objective of a single examination. ARRT and NMTCB staff would report to their respective boards on the points of agreement and disagreement which had been identified and would recommend continuation of NMTCB/ARRT dialogue with the ultimate goal of a single examination for credentialing in nuclear medicine technology.

That same month the three Examination Committees met separately at the ARRT office in Minneapolis. The Committees had been restructured to meet and function apart from meetings of the Registry Board of Trustees. Beginning with the February 1983 Board meeting, the function of examination review would no longer be conducted by the Board at its regular meetings but would be conducted by the Examination Committees meeting separately two times per year at the Registry office. Each Committee was structured so as to have various facets of the professional community represented. Each committee included a staff technologist, a chief technologist, an administrator, an educator, a radiation physicist and a physician.

In December it was announced that the Health Resources Administration of the U.S. Department of Health and Human Services had adopted the ARRT standards for certification and the CAHEA standards of accreditation in a preliminary draft of proposed standards for the accreditation of educational programs that train personnel and the certification of persons who perform radiologic procedures as required by Section 979 of the Consumer-Patient Radiation Health and Safety Act of 1981.

1983

In February the Executive Director reported that inclement weather had caused some test centers to cancel and reschedule examinations for both of the last two January administrations (i.e., January 1982 and January 1983).

To eliminate such problems in the future it was proposed that the January examination administration be changed to the month of March. The Board accepted the proposal and decided that effective in 1985 examinations would be scheduled in March instead of January, leading to a March, July and October schedule of administrations.

The Board responded to requests from several state licensing agencies by authorizing the development of an examination covering the tasks performed by someone having a scope of practice limited to radiography of the chest or extremities. Although developed and administered by the ARRT, the intended purpose of the examination would be solely for licensing by states with no certification awarded by the ARRT. The Board directed that the tasks relating to this limited scope examination should be extracted from the task inventory developed for the general radiographer under the ARRT Job Analysis Project and used for test development. Subsequently, a committee was appointed by the Board to assist in the project. The Limited Scope of Practice in Radiography Examination Committee consisted of technologists having experience in the development and management of state licensing programs and ARRT Trustees.

The Board voted to accept some revisions to the *ARRT Bylaws* which had been recommended by legal counsel in light of a recent Supreme Court ruling in which a non-profit professional organization was held liable for antitrust violations of its agents. The increasingly litigious environment was causing the Registry to look at its operations and policies with increased scrutiny.

In April 1983 the Registry Board published its current definition of an active registered technologist as:

> "Presently employed in the field of radiologic technology as a technologist or in a management, commercial, research or educational capacity."

In July the Board discussed a letter which had been received from the ASRT in which the Society recommended that the ARRT modify its Bylaws to include one additional technologist member on the Board. It was the decision of the Board that a response to the proposal from the ACR should be obtained before the Board acted. The President of the Board was instructed to contact the Chairman of the ACR Commission on Human Resources to request ACR consideration of the proposal.

The Board discussed the response it had received from the NMTCB to an ARRT proposal for a system leading to a single credentialing examination for nuclear medicine technologists. After a thorough consideration of its recent discussions and exchange of proposals with the NMTCB, the ARRT Board reaffirmed its intention of staying intimately involved in the credentialing of nuclear medicine technologists. While agreeing to the desirability of having one certifying examination, the Board agreed that many concerns remained to be addressed in any future discussions. The Executive Director was instructed to prepare a response to the NMTCB outlining these concerns.

The Board also discussed a request from a state licensing agency for release of the names of technologists whose certificates had been revoked by the ARRT. The Board decided that when a certificate has been revoked, all states with whom the ARRT has licensure examination contracts would be advised of the action.

The Board also reviewed the cases of three registered technologists who were currently under sentence for felonies. As a result of state investigations into Medicare fraud, they and several other registrants had been convicted of crimes involving the sale of medical x-ray film or silver recovered from used film. Some had been identified in newspaper articles. Others were reported by individuals in the community. A few had contacted the Registry voluntarily and admitted their convictions. Since legal counsel for the Registry had advised that a felony conviction for this type of offense constitutes grounds for revocation of a registrant's certificate under provisions of the *ARRT* Bylaws and *Rules and Regulations*, the Board voted to commence due process to revoke the certificates of all three. This event marked the beginning of a period of increased activity by the ARRT in disciplinary actions.

1984

The Registry redesigned the examination application materials to increase their ease of use by applicants and allow more efficient processing by ARRT staff. The application forms were bound into a new *Bulletin of Information* which provided detailed information on completing the application form and preparing to take the examination for registration in radiography, nuclear medicine technology or radiation therapy technology. The same form could be used to apply for examination in any category. A pre-

addressed mailing envelope was bound into the package.

In February the Board approved the addition of an accountant/bookkeeper position to the Registry staff in consideration of the need for more precise accounting techniques in dealing with an increasing budget and the growing number and complexity of government reports being required with the Registry's assumption of the responsibility of hiring test center personnel for the approximately 100 centers around the country. In actuality, the accounting requirements of the Registry were growing not just in complexity but in volume also with nearly 140,000 registrants sending a renewal check each year.

The possibility of using continuing education as a requirement for recertification was discussed. The Board reviewed a report which had been prepared based upon a literature review on continuing education in the fall of 1983. The Board reviewed a report by legal counsel on possible legal ramifications of mandating continuing education. It was the decision of the Board that continuing education activities should be closely monitored as they related to certification, but that continuing education should not be required for certification in radiologic technology at that time.

The Board considered the need for an advanced level examination in light of the recent job analysis project. That project, with its emphasis on entry-level competence, had revived interest in the concept of an advanced-level examination because the linkage of examination content to entry-level tasks meant that several areas of the approved curriculum would no longer be covered on the examination. The Board moved to appoint a committee of five to study the feasibility of establishing an advanced-level examination.

The Advanced Level Examination Committee met in Minneapolis in May 1984 and made the following determinations:

A. The purpose of the advanced level examination should be self-evaluation of competence at advanced levels. No certification should be awarded and no pass/fail point should be set. Scores should be provided only to the examinees for self-evaluation.

B. The content should be derived from selected areas of the approved curriculum in radiography and other sources but should not be intended to mirror the curriculum. The test should include anatomy-physiology, radiation biology, physics and equipment, quality control concepts, imaging modalities and radiographic procedures. It should NOT include ultrasound, nuclear medicine or radiation therapy.

C. The test should be directed at experienced, certificate holding radiographers, not entry-level technologists.
D. No task analysis should be required because the advanced level examination is not intended for use in selection or promotion decisions.

The Board subsequently accepted the initial report and recommendations of its Advanced Level Examinations Committee and authorized a survey of a significant sample of registrants to ascertain their interest in participating in an advanced level examination if such an examination were made available.

Hope for the establishment of a single examination for the certification of nuclear medicine technologists was rekindled when representatives of the ARRT and the NMTCB met in Chicago in May 1984. It was agreed that differences between the two organizations did exist but that if certain assumptions were determined to be valid, those differences were probably minor. The assumptions were that the ARRT and NMTCB examinations were serving the same clientele and that both examinations were covering the same content areas. Both of these assumptions were discussed by the ARRT Board at its June 1984 meeting in Reno, Nevada. It was suggested that the ARRT and NMTCB examinee populations might not be identical as previously assumed because most ARRT examinees had been trained and employed at institutions where nuclear medicine technology was considered to be primarily an imaging modality. The ARRT task and job analysis had indicated that very few entry-level nuclear medicine technologists were doing any *In Vitro* studies at all. Therefore, the new ARRT nuclear medicine technology test specifications provided no questions on *In Vitro* procedures. This in turn raised questions about the comparability of contents of ARRT and NMTCB examinations. The Board agreed to continue its dialogue with the NMTCB.

A meeting to review the first draft content specifications for the Limited Scope of Practice in Radiography Examination was held at Reno, Nevada in June 1984. All licensing states had been invited and representatives of three licensing states participated. A set of proposed content specifications were prepared for mailing to the licensing states along with the following statement of purpose:

"The purpose of the Examination for the Limited Scope of Practice in Radiography (Chest/Extremities) is to assess the knowledge and cognitive skills underlying the intelligent performance of the tasks typically required of a person restricted to radiography of either the extremities or the chest. The content speci-

fications represent a subset of the specifications developed for the general radiographer during the ARRT Job Analysis Project. The Examination for the Limited Scope of Practice in Radiography was developed at the request of states that offer limited licensing in radiography. The ARRT will administer the examination at a state's request under the appropriate contractual arrangements and will provide the results directly to the state. The examination will not be associated with any type of certification by the ARRT."

Copies of new content specifications for the examinations in radiography, nuclear medicine technology and radiation therapy technology were sent to the directors of all accredited educational programs in August 1984. Those specifications represented the culmination of the ARRT Job Analysis Project which began in 1980 with the objective of documenting the link between examination content and tasks required of the entry-level staff technologist. The examinations to be administered in July 1985 would be constructed according to those specifications. Along with the changes in content coverage, the radiography examination was reduced from 250 questions to 200. As a result, the length of the test administrations would be reduced from four hours to three hours effective with the administrations scheduled for July 1985.

In October, ARRT staff delivered a presentation to the NMTCB on the ARRT examinations program including examination development, assembly, materials, administration, scoring and reporting, development and administration cycle and security. The presentation was part of the sharing of information between the ARRT and the NMTCB directed at bringing a better mutual understanding.

1985

At its January meeting the ARRT Board accepted the content specifications as developed by the Limited Scope of Practice in Radiography Examination Committee and voted to incorporate the following additional language into the statement of purposes of the limited scope examination:

"It is the philosophy of the ARRT that those persons having a scope of practice that is limited to radiography of the chest or extremities must be as knowledgeable in those particular areas as is the technologist whose scope of practice reflects that of the general entry-level staff radiographer as defined by the ARRT Job Analysis Project. That is, if the same task is performed, the same knowledge and cognitive skills underlying the intelligent performance of the task as identified for the entry-level staff radiographer will be required. It is the intention of the ARRT that the depth of understanding required for the intelligent performance of the task not be limited, but rather only that the breadth of content coverage be

limited according to the particular tasks performed."

At that meeting, the Executive Director reported on the first National Conference on Continuing Competence Assurance within the Health Professions which took place in December 1984 under the sponsorship of the National Commission for Health Certifying Agencies (NCHCA) and the Bureau of Health Professions of the U.S. Health Resources and Services Administration.

The Board discussed the status and implications of its existing reciprocity agreements with foreign certifying bodies. It was noted that, effective in July 1985, all ARRT examinations in radiography, nuclear medicine technology and radiation therapy technology would be constructed according to test specifications based on an analysis of the knowledge and cognitive skills required to perform the duties of a staff technologist at entry level in the United States. The Board considered the possible consequences of either continuing or discontinuing certification without examination under reciprocal agreements with foreign organizations. After considerable discussion of the alternatives, it was the consensus of the Board that it would be in the best interests of the ARRT, present and future registrants, the employers of radiologic technologists, and health care consumers in the United States to establish a date after which only individuals passing the ARRT examination could be certified. The Board voted unanimously to adopt the following resolution:

"Effective January 1, 1986 all applicants for ARRT certification must satisfy all of the following:

1. Be of good moral character.
2. Complete an educational program in radiography, nuclear medicine technology, or radiation therapy technology which has been accredited by the Committee on Allied Health Education and Accreditation of the American Medical Association (CAHEA). Applicants found ineligible because they are not graduates of a CAHEA accredited program may request consideration as special cases of eligibility on the basis of training equal to or in excess of the training of a graduate of a CAHEA accredited educational program.
3. Pass the ARRT examination in radiography, nuclear medicine technology, or radiation therapy technology."

Subsequently it was announced that technologists who wished to be considered for certification without examination under existing reciprocity agreements must apply for certification before January 1, 1986.

A standard setting exercise was conducted by the three Examinations Committees at the Registry office in early June to set pass/fail scores for the examinations to be administered in July 1985, the first examination forms to be based on the new test specifications. Later, the same exercises were performed by three ad hoc standard setting committees made up of a geographical mix of staff technologists, chief technologists, educators and administrators in each of the three disciplines. The method selected required the judges to evaluate each test question. The pass/fail point would be set relative to the knowledge required as opposed to being set according to how examinees performed relative to each other as had been done. As planned, the new pass/fail points were subsequently used for the July 1985 administration of the examinations.

The Board reviewed a report it had received from the ACR Commission on Human Resources which stated that the ACR Board of Chancellors was opposed to majority representation by technologists on the ARRT and JRCERT as proposed by the ASRT Board of Directors in 1983. After extensive discussion, by majority vote, the Board decided to set in motion the mechanism for changing the ARRT BYLAWS to reflect a majority representation by technologists on the ARRT Board of Trustees as requested by the ASRT in 1983.

The ACR Commission report also indicated that its Chairman had been charged by the ACR Board of Chancellors to enter into direct negotiations with the NMTCB and ARRT to establish a single examination for certification in nuclear medicine technology. A task force to deal with the political issue of representation on a combined board was being organized.

The Board reviewed the report of its Advanced Level Examination Committee. The Committee had noted that the major job-oriented areas of importance to the radiologic technology appeared to be general diagnostic radiography, computer imaging, angiography and magnetic resonance imaging (MRI). The Board recommended that a task analysis be developed in angiography first since a curriculum had already been established in that area. Staff was instructed to prepare a proposal of the time schedule, approximate costs involved and procedures to be used in performing a task analysis in angiography and to report its findings at the February 1986 meeting.

A newly formatted *Application for Renewal of Registration* form was introduced in July 1985. The form was optically scannable to permit rapid updating of ARRT records without the necessity of keying every renewal to update records. Only incomplete applications or those indicating changes of name or address or conviction of a crime would require manual processing. The form would also permit the gathering of demographic information about the Registry's population which could be tabulated and published on a regular basis.

The Registry began collecting, for the first time, the applicants' social security numbers. The need for that information was becoming apparent as the Registry grew larger and more complex. The key to a good records system is to have a unique identifier which does not change. Previously, the only numerical identifier used in the ARRT records system was a file number arbitrarily assigned to each individual at the time of application for examination. Although it was intended to be unique, the ARRT file number had proved to be an imperfect identifier. On the ARRT application form each applicant had been asked whether he or she had previously applied in any category. For whatever reason, some applicants who had previously submitted an application would check the "NO" box on their new applications. If such an applicant had changed name and/or address since submitting the first application and Registry staff had no reason to suspect the existence of a previous application, that applicant would be recorded as two separate individuals with two different ARRT file numbers. However, an individual's social security number was a truly unique identifier which could easily be stored in a small field of the ARRT computerized record system and readily accessed.

In November 1985 negotiating teams representing the NMTCB and the ARRT and its sponsoring organizations met in Chicago in another attempt to bring about a single certifying examination for nuclear medicine technologists. All parties agreed to the concept that one examination in nuclear medicine technology was a feasible goal. It was also agreed that there were essentially no differences in examination development methodology between the NMTCB and ARRT. Both organizations were committed to a competency-based examination derived from a job analysis and to a logical approach to setting the pass/fail score. However, there was considerable discussion and little agreement on what the structure of the certifying board

should be. Two possibilities for resolution were targeted. They were:

1. ARRT/NMTCB collaborative effort. Use the best of both.
2. Develop a new independent Board.

All parties agreed that the ARRT/NMTCB negotiating teams should work out a proposal to present back to the sponsoring organizations. The parties decided to do the following:

1. ARRT/NMTCB go through fact finding, including comparing certification list and candidate list.
2. Review options for restructuring and identify the ramifications of each.
3. Develop a proposal that reasonably satisfies the needs of participating organization.

There was consensus that the negotiating teams meet as often as necessary to develop the proposal. The group agreed to recess with the intent of meeting within the next twelve months.

1986

The Board of Trustees adopted a 5-year plan leading to the implementation of a job-related advanced level examination in angiography. The angiography examination project would be accomplished in six phases over a five year period according to the following schedule:

PHASE I - This phase would be directed at the identification of a population of registered technologists working in special procedures, development of a survey form, and the mailing and tabulation of the form. The project could be aborted at this point if the survey indicated that there were too few angiographers to justify the development of an advanced level examination.

PHASE II - The second phase would be devoted to an analysis of the knowledge and skills required to perform the tasks associated with angiography.

PHASE III - Preparation of the content specifications upon which the examination would be based.

PHASE IV - Development of items needed for construction of the first examination form in accordance with the content specifications.

PHASE V - Pilot testing of the first examination form.

PHASE VI - This phase would complete the project through analysis and revision of the items tested in Phase V and establish the test item bank.

The first phase of the project was expected to start in August of 1986 when the accumulation of 12 months of data from renewal application scanning would be available to permit the identification of a representative sample of technologists to be surveyed.

The Board reviewed the Special Eligibility Requirements and accepted several staff recommendations for changes in the requirements and procedures for implementing the changes. The Board was in agreement that the requirements were intended to supplement, not circumvent the regular eligibility requirements which called for completion of a CAHEA-accredited education program. The Special Eligibility Requirements had originally been adopted on advice of legal counsel who had warned that denying examination for registration to persons who were not graduates of a CAHEA-accredited program, regardless of their other qualifications, could impact on some Federal and State laws and regulations. The Trustees were in agreement that the Special Eligibility Requirements should be continued to provide a mechanism to permit the examination for registration of technologists who had not completed a CAHEA-accredited program but had qualifications equal to or greater than those of such a graduate. It was the consensus of the Board that the criterion for determination of equivalency of an applicant's qualifications to the qualifications of a graduate of a CAHEA-accredited program should be the curriculum and clinical competencies described in the published *Essentials* and not a set of qualitative and quantitative standards prescribed by the ARRT as in the past. The Board also noted that it had previously determined that the educational standards of some foreign credentialing bodies were equivalent to the standards for accredited educational programs in the United States. Therefore, persons who had completed the educational requirements and passed the certifying examinations of those bodies should be considered to have met the Special Eligibility Requirements. Upon completion of its review the Board authorized the publication of the revised Special Eligibility Requirements and procedures as follows:

"All applicants must have completed an educational program equivalent to the program described in one of the following documents:

Essentials and Guidelines of an Accredited Educational Program for the Radiographer

Essentials and Guidelines of an Accredited Educational Program for the Nuclear Medicine Technologists

Essentials and Guidelines of an Accredited Educational Program for the Radiation Therapy Technologist

Applicants who have completed the educational requirements and passed the certifying examination in radiography or radiation therapy technology of one of the following organizations are considered to have met the Special Eligibility Requirements:

The British College of Radiographers
The Australasian Institute of Radiography
The Canadian Association of Medical Radiation Technologists
The Society of Radiographers of South Africa

PROCEDURES
Applicants who have applied for examination for registration and have been found ineligible under the normal requirements contained in Article I, Section B of the ARRT Rules and Regulations may request consideration under the Special Eligibility Requirements by submitting an Application for Examination Under Special Eligibility Requirements and remitting an $85.00 Special Eligibility Service Fee. All applicants who have applied and have been determined ineligible under the normal requirements are provided with the proper form.
Applicants who have not applied for examination under the normal requirements may apply directly for consideration under the Special Eligibility Requirements by submitting an Application for Examination Under Special Eligibility Requirements and remitting an $85.00 Special Eligibility Service Fee. The proper form is available from the ARRT office.
All applicants must provide documentary evidence to prove didactic and clinical education equivalent to an educational program accredited by the Committee on Allied Health Accreditation and Accreditation (CAHEA) as described in the published Essentials. Documents submitted in support of applications under the Special Eligibility Requirements will be reviewed by Credentials Committees appointed by the ARRT Board of Trustees. However, final determination of eligibility for examination for registration will be made by the ARRT Board of Trustees at a regular meeting of the Board."

In accordance with the new procedures, the Board subsequently appointed a Credentials Committee for each discipline and charged it with evaluating the educational documents of applicants under the Special Eligibility Requirements and reporting the results of each evaluation to the Board.

The Board adopted a schedule for updating the job analysis project every

five years. According to that schedule, at its June 1986 meeting, the Board would appoint new advisory committees to begin the updating process in all three disciplines. That process would be under way with the first meeting of the committees in the fall of 1986 with the objective of producing new content specifications upon which the examinations would be based beginning with the July 1990 administrations. All accredited educational programs would be notified of impending changes in the content specifications about two years in advance of their implementation.

A proposed change in the *Bylaws* was considered which would increase the membership of the Board of Trustees to nine members, five of whom would be registered technologists and four of whom would be physicians. The change was not adopted. The Board also considered a suggestion for altering the make-up of the Board wherein additional organizations might be represented on the Board provided the number of representatives from any single organization did not constitute a majority. In response, the Board approved a resolution calling for the President to appoint an ad hoc committee to review the structure of the Board of Trustees and recommend to the Board any change felt to be appropriate.

The Board also discussed the section of the *Bylaws* which describes conflict of interest of Board members who serve on policy-making boards or committees of other organizations. Although this section only mentioned the AMA, ASRT, CAHEA, JRCERT, JRCNMT and the Board of Chancellors of the ACR, it was noted that this section also contained the phrase "or any similar national professional organizations." Discussion was held as to what other national organizations might be considered as "similar" to the AMA, ACR, ASRT, JRCERT, JRCNMT or CAHEA. The RSNA and SNM were mentioned as possibilities. Subsequently, the Board voted to appoint a committee to investigate this matter and present a report at its next meeting.

The Board discussed the meeting of November 1985 which had been attended by representatives of the ARRT, ACR, ASRT and NMTCB. The Board expressed concern that it had not been made clear at that meeting that the ARRT did not intend to accept a minor role in certification in nuclear medicine technology and that any structure resulting from its negotiations with the NMTCB should contain equal representation and authority by the ARRT. The Executive Director was instructed to communicate that concern to the NMTCB.

The first form of the Limited Scope of Practice Examination in Radiography was administered in March 1986 to candidates for limited scope of practice permits from the states of Maine and Vermont. The tests were administered at the established ARRT examination centers at Augusta, Maine and Burlington, Vermont in conjunction with the regularly scheduled examinations for registration. Score reports for the Limited Scope examinees were sent directly to the Maine and Vermont radiologic technology licensing agencies. The ARRT did not set the pass/fail point nor provide the examinees with any type of recognition for their participation in the examination.

The newly appointed Radiography, Nuclear Medicine Technology and Radiation Therapy Technology Credentials Committees met jointly with ARRT staff in May 1986 to review the applications and educational documents on hand and to develop forms and procedures for use by future applicants in applying for examination and documenting their formal education and clinical competency for consideration under the Special Eligibility Requirements.

At its June 1986 meeting, the Board reviewed the activities and recommendations of the three Credentials Committees. The Board accepted all Committee recommendations. It was noted that of the 19 applications reviewed by the Committees at their May 1986 meeting, six applications had been approved, four had been disapproved and nine had been found to be incomplete but would be reconsidered if the applicants could provide additional documentation of formal training and/or clinical competency.

Also at that meeting, the Board reviewed a letter from the NMTCB which contained that organization's latest proposal to bring about a single credentialing process for nuclear medicine technologists. It was the consensus of the Board that this proposal was not acceptable as submitted because it apparently ignored the ARRT's position that the credentialing process must provide the ARRT with at least equal representation in the policy making body as that of the NMTCB.

The Board also received the report of its Committee on Conflicts of Interest and the recommendations of legal counsel for a revision of the *Bylaws* to avoid conflicts of interest by members of the ARRT Board of Trustees. It was noted that a member of the Board of Trustees who is an officer, employee, director, advisor or trustee of the AMA, ASRT, CAHEA, JRCERT, JRCNMT or

ACR had a potential conflict of interest. The Board accepted the recommendation of legal counsel that the section of the *Bylaws* which refers to specific organizations should be moved to a new section of the *Bylaws* which would deal specifically with eligibility for membership on the Board.

The Board also accepted proposed modifications to the *ARRT Rules and Regulations* which would remove the restrictions on registration of physicians as registered technologists.

The Board considered a proposal for making a donation of funds to the ASRT Educational Foundation, Inc. and adopted the following motion:

> "That a donation of $100,000 be made to the ASRT Educational Foundation, Inc. after July 1, 1986 and another $50,000 be donated after July 1, 1987 for the purposes of developing continuing education programs for registered technologists."

The ARRT, which had discontinued its direct role in developing continuing education activities in 1975 when it shelved its Alfred B. Greene Program of Continuing Education in Radiologic Technology and discontinued its sponsorship of the Eastman Kodak Program in Effective Education, was resuming an indirect role by supporting the development of activities through the Foundation. This action fit well with the movement of the ARRT toward mandatory continuing education as a condition of renewal of registration by increasing the opportunities for technologists to pursue continuing education.

1987

In January, representatives of the NMTCB met with representatives of the ARRT at the Registry office in Minneapolis to continue dialogue on the joint objective of establishing a single credentialing process for nuclear medicine technologists. Each group extended an invitation to the other to attend the next meeting of its examination committee.

The Executive Director reported to the Board at its February 1987 meeting that 13 states had contracts with the ARRT to use the ARRT examinations for state licensing purposes. The Registry had published a handbook entitled *The Role of the American Registry of Radiologic Technologists in State Licensing of Radiologic Technologists* to provide information to other states considering enacting licensure programs.

At that meeting the inadequacies of the ARRT office building in Minneapolis

were discussed as well as the expansion and remodeling programs which had been implemented since 1960 to meet the Registry's growing needs at that location. There was no practical way to expand the existing building beyond its present 6088 square feet. On-site storage space was inadequate and it had become necessary to rent space in a warehouse. The construction of a new facility nearer to the Minneapolis/St. Paul International Airport was proposed to facilitate the ever-increasing traffic of consultants serving on ARRT committees to and from the Registry office. After extensive discussion of the proposal, the Board unanimously agreed to investigate the acquisition of a new office building for the ARRT. President Thomas Harle, M.D. appointed a Building Committee consisting of Richard Colvin, M.D.; Elona McLees, R.T.; Marilyn Holland, R.T., and himself to investigate available alternatives and prepare a proposal for consideration by the entire Board at its June 1987 meeting. The Executive Director was authorized to seek architectural assistance in preparation of preliminary plans for a new building and to negotiate an option to purchase land should a suitable site be found.

In 1987 the ARRT exhibit would be shown at meetings of the SNM, ASRT, AHRA, ASTRO and RSNA. The Board emphasized the importance of continuing to display the exhibit at national meetings and having it staffed at all times by an ARRT Trustee or staff person with Registry forms and publications available for distribution.

In April 1987, the Registry published the results of its 1986 survey of the highest level of education achieved by registered technologists of all categories. Of those indicating full time employment as radiographers, 1% reported a graduate degree as their highest level of education. A BA or BS degree had been attained by 9% of the respondents. 35% had an AS or AA degree. The remainder indicated a high school diploma plus professional education in radiography. Of those employed as full time registered nuclear medicine technologists, 5% had a graduate degree, 35% had a BA or BS degree, 28% had an AS or AA degree and the remaining respondents had high school plus professional education in nuclear medicine technology. Among the full time registered radiation therapy technologists responding, 2% had graduate degrees, 15% had baccalaureate degrees, 36% had associate degrees and the remainder had high school plus professional education in radiation therapy technology.

The Board received the report of its Building Committee in June 1987

including a presentation of preliminary construction plans and cost estimates by an architectural firm. It approved the concept of construction of a new ARRT headquarters building while setting strict budgetary limits on the project.

The Board appointed an Angiography Job Analysis Committee representing various practice settings and areas of the country. The Committee was charged with developing a list of the tasks typically performed by angiographers.

The Board adopted amendments to the *ARRT Rules and Regulations* which had been considered by the Board at its February 1987 meeting. The *Rules and Regulations*, as amended, would be reproduced for inclusion in the *ARRT Examinee Handbook* as revised for August 1987.

The Executive Director reported informal communications with new personnel from the NMTCB who seemed to have an interest in creating one certifying examination in nuclear medicine technology and a willingness to cooperate in discussions toward that goal. It was noted that ARRT representatives would be talking with NMTCB representatives during the RSNA meeting next November in hopes that individual areas could be negotiated to develop proposals to each Board.

By 1987, 17 states had functioning licensing laws for radiologic technologists. Of these, 14 had contracted with the ARRT to use the Registry examination for licensure purposes. The other three states accepted ARRT examination results in lieu of a state examination. Approximately 750 candidates had been scheduled to sit for the July 1987 administration of the examination for the limited scope of practice in radiography. There were more limited permit examinees scheduled for the July 1987 examination alone than would sit for the examinations for registration in nuclear medicine technology and radiation therapy technology for the entire year. A request had been received from Pennsylvania for a special one-time administration to limited scope candidates due to recently enacted legislation requiring licensing by December 31, 1987. A tentative schedule of examination administrations, score reporting and re-examining to comply with the special request was proposed. The schedule included examination administrations on October 15, 1987 for approximately 1,700 people and on January 14, 1988 for approximately 1,000. The Board moved to approve the Pennsylvania

request and the proposed schedule.

Two members of the NMTCB attended and observed the October 1987 meeting of the ARRT Nuclear Medicine Technology Examination Committee at Minneapolis. Two members of the ARRT Board of Trustees attended and observed the November 1987 meeting of the NMTCB Examination Committee at Atlanta. In November 1987 representatives of the ARRT and NMTCB met at Chicago to continue their ongoing dialogue on establishing a single examination in nuclear medicine technology. The NMTCB Committee presented a proposal intended to achieve the objective of a single examination developed cooperatively. It included a rough schedule of activities to be reviewed by the ARRT and NMTCB Boards. The activities would begin with a comparison of ARRT and NMTCB registrant lists in January 1988 and conclude with the first meeting of a new joint committee in April 1989 to work on examination forms to be administered in 1990.

In December 1987, the Angiography Job Analysis Advisory Committee met to develop the first draft of a task inventory that was subsequently approved by the ARRT Board.

1988

At its February meeting the ARRT Board reviewed the latest NMTCB proposal. It was noted that information previously requested from the NMTCB had been received. However, before other subjects could be negotiated with the NMTCB, the financial considerations of a merger would have to be discussed at length. Concern was also expressed over what recognition ARRT would receive in any "joint" certifying process. It was noted that the accelerated schedule for negotiations proposed by the NMTCB could not be met. The Board moved that ARRT staff should continue negotiations with the NMTCB moving into new areas of discussion such as financial arrangements and recognition of registrants.

The Board reviewed the factors leading to the construction of a new building and voted to proceed with the project. It passed resolutions establishing a new Building Committee consisting of Elona McLees, R.T., Salvatore Martino, R.T.; and Jonathan Stolz, M.D. to oversee the land acquisition and building construction.

The Board also accepted a recommendation from the Radiography

Examination Committee that photographs be used to replace written descriptions in positioning items in the examination in cases where the written descriptions were too wordy.

Requests had been received from licensing states to expand the limited scope of practice examination in radiography to include other areas in addition to radiography of the chest and extremities. The Board discussed possible areas for expansion such as radiography of the ear, nose and throat, trunk, spine and podiatric radiography. It was noted that the ASRT was developing a limit scope curriculum and that the JRCERT was considering recognition of limited-scope training programs. Licensing states were surveyed to determine their needs for additional categories in the limited scope of practice examination in radiography. The results of the survey led the Board to approve a motion to develop categories for the limited scope of practice examination in skull/sinuses, spine and podiatric radiography (excluding the knee) for use by state licensing agencies.

Guidelines developed for the protection of health care personnel against AIDS and the focus on precautions for handling blood and body fluids motivated the Registry to evaluate its coverage on the examinations. It was noted that the current content specifications did include such procedures albeit in more general content categories. The Examination Committees were directed to review those sections to assure that coverage of the procedures was sufficient.

In the spring of 1988 representatives of the ARRT participated with representatives of 16 other organizations in the first meeting of the Summit On Manpower. The Summit had been organized by the American Healthcare Radiology Administrators (AHRA) in response to a widely shared perception of a shortage of radiologic technologists in the United States. At that meeting, the Registry contributed extensive quantitative and demographic information on the radiologic technologist community obtained through the process of annual registration. Organizations were asked to make an initial three-year commitment to participate in the Summit.

In June, the Board accepted the recommendations of its Building Committee which included the selection of a building site, building design and architect.

The Board reviewed inquiries received about the possibilities for examining

in some of the new imaging modalities in which radiologic technologists were working such as magnetic resonance imaging (MRI) and computed tomography (CT). The Board authorized a survey of registrants to gather information on the extent of their participation in the new modalities. Survey questions would be printed on the backs of renewal application forms. The survey form would include questions on employment in MRI, CT, mammography and quality assurance.

The Board discussed a request it had received from the American Registry of Clinical Radiography Technologists (ARCRT) for assimilation of its registrants into the ARRT. The ARCRT was an examining and certifying body and professional organization for radiographers which had existed in one form or another since 1955 when its was known as the American Radiography Technologists (ART). Its membership was approximately 2000 at the time of the discussion. In January 1988, the Board of Directors of the ASRT had voted to support the establishment of a task force to investigate and develop a possible mechanism for such an assimilation. The ARRT Board voted to appoint two Trustees and appropriate staff members to a committee charged with communicating with the ARCRT and investigating all aspects of the ARCRT request and reporting its findings to the Board in February 1989.

A representative of the NMTCB met with the Board to review recent correspondence and negotiations between the ARRT and the NMTCB. It was noted that the two organizations shared many goals but that differences became apparent when identity and organizational relationships were considered. The NMTCB identified with the SNM, particularly the technologist section of the SNM. The NMTCB was concerned with maintaining that relationship. In reviewing their common goals, the strengths of both the ARRT and NMTCB were noted. Following its discussion with the NMTCB representative, the Board adopted the following resolution:

> "The President will appoint three Board members to a committee to serve as ARRT representatives in negotiations with the similar committee of the NMTCB, to act as a negotiating committee on behalf of the Board in dialogue with the committee of the NMTCB. The committee is charged with development of a proposal to be presented to the ARRT in final form. The guidelines to the committee are as follows:
>
> 1. Preserve the ARRT name on a certificate;
> 2. Administrative functions need to be pooled together under the current ARRT

administrative structure;
3. Preserve the strength of the current NMTCB board; and
4. Establish a structure in which there must be agreement by both boards in adopting resolutions and policies."

On November 11, 1988, ground was broken for the construction of the new ARRT headquarters building in Mendota Heights, Minnesota.

1989

The Board reviewed the progress of the Angiography Examination Committee including the data received with the angiography job analysis survey. The Board moved to accept the Committee's task inventory. After extensive discussion of the terminology to be used to describe the person performing the tasks, the Board approved the designation of "Cardiovascular-Interventional Technologist" as the name for the individual holding this certificate of advanced qualifications.

A new staff position within psychometric services was created for a Test Specialist. Creation of the new position was necessitated by the increased activities, both under way and planned, related to new examination programs.

The Board considered a request from the ASRT to change the title "Radiation Therapy Technologist" to "Radiation Therapist." It was the decision of the Board that the use of the term Radiation Therapist to denote technologists certified by the ARRT in Radiation Therapy Technology could cause confusion about the roles of the physicians and technologists employed in radiation therapy. Therefore, the Board voted to delay the use of the term radiation therapist in reference to the technologist until such time as the term is more widely accepted in that context by the radiation therapy community.

The Director of Psychometric Services presented data on the comparative performance of graduates of hospital-based radiography programs and graduates of college-based programs on the ARRT examination. The data indicated that the graduates of hospital-based programs tended to perform slightly better than the graduates of college-based programs both in terms of average scaled scores and passing rates.

The Board received the report of the committee which had met with representatives of the ARCRT concerning a proposed absorption of the ARCRT by the ARRT. The Board adopted the following motion by majority vote:

> "That active ARCRT members be accepted as registrants in the ARRT without an additional examination being administered to individuals being transferred. These registrants will be identified as being originally certified by the ARCRT. This window of availability for ARCRT individuals within the three-year track reinstatement process would be one year from the date of this agreement. The transition of assets will be sufficient to cover the costs of this transaction and will be completed by October 31, 1989."

In May 1989 the newly named Cardiovascular-Interventional Job Analysis Advisory Committee (previously called the Angiography Job Analysis Advisory Committee) met to complete its determination of the knowledge and cognitive skills underlying the tasks to be covered in the Examination in Cardiovascular-Interventional Technology. The Committee subsequently converted the information collected into content specifications for the examination.

ARRT staff spent the week of August 14-18, 1989 moving into the new office building. Nearly all Registry functions and services continued as usual during the move. Telephone service was never interrupted. The computer system was disconnected at the old building on August 17 but was reconnected and operational at the new site by the end of the day on August 18.

1255 Northland Drive, St. Paul
Registry's Home, 1989 to present

On September 23, 1989, the new 29,000 square foot ARRT building was formally dedicated. All members of the Board of Trustees were present at the building for the ceremony. An audience of about 100 was welcomed by the Executive Director and Charles E. Mertensotto, Mayor of Mendota Heights. Greetings were personally extended by representatives of several medical and allied health organizations including:

> The American Society of Radiologic Technologists by Joan Parsons, R.T., President, and Phyllis Thompson, R.T., Chairman of the ASRT Educational Foundation

The American College of Radiology by Marie Zinninger, M.S.N. of the ACR Commission on Human Resources

The American Healthcare Radiology Administrators by Howard Schwartz, Immediate Past President

The Association of Educators in Radiological Sciences by Gregory Spicer, R.T., President

The Joint Review Committee on Education in Radiologic Technology by Marilyn Fay, R.T., Executive Director

C. David Teates, M.D., President of the ARRT Board of Trustees, responded to the greetings and presided at the unveiling of a commemorative plaque. The ceremony was followed by an open house with refreshments served and tours of the building conducted by ARRT staff.

At its September 1989 meeting, the Board established the eligibility requirements for the advanced level examination in Cardiovascular-Interventional Technology as follows:

> "The qualification for the examination in Cardiovascular-Interventional Technology will be an R.T.(R)(ARRT), and the certificate that is issued as a result of the successful passing of this examination indicates that this is a certificate of advanced qualifications in Cardiovascular-Interventional Technology. The language on the certificate will state: "The ARRT hereby certifies that (name) has met the requirements and passed the examination, thereby demonstrating advanced qualifications in Cardiovascular-Interventional Technology."

The Board also discussed the development of advanced level examinations in other modalities and voted to prioritize development of new examinations in the following order:

1. Mammography
2. Computed Tomography
3. Magnetic Resonance Imaging
4. Quality Assurance

A Mammography Advisory Committee was appointed. The development of an advanced level examination in mammography was scheduled for a fast-track approach in which many of the steps occurred in parallel rather than sequentially as was the norm. The speed was felt necessary due to the rapid pace of activities at other organizations in developing standards of training and accreditation of facilities.

Dignitaries attending dedication of ARRT Building, September 23, 1989

From Left: Roland McGowan, R.T.; Phyllis Thompson, R.T.; Joan Parsons, R.T.; Howard Schwartz, Marilyn Fay, R.T.; Charles Mertensotto, Marie Zinninger, Greg Spicer, R.T.

Board of Trustees at dedication of new ARRT Building, September 23, 1989

From Left: Johnathan Stolz, M.D.; Richard Colvin, M.D.; Becky Kruse, R.T.; Belinda Phillips, R.T.; Kenneth Stevens, M.D.; Jane Van Valkenburg, R.T.; Salvatore Martino, R.T.; C. David Teates, M.D.

Chapter Eight

1990-1995

Roland McGowan would retire after 26 years of service as Executive Director. He would be replaced by Jerry B. Reid, Ph.D. who had previously served as Associate Executive Director and Director of Psychometric Services. The Registry staff would be reorganized into three separate divisions, a Division of Administrative Services, a Division of Regulatory Services and a Division of Technical Services. The Board of Trustees would also be reorganized to provide for majority representation of technologists on the Board. The first advanced level examinations in Cardiovascular-Interventional Technology and Mammography would be administered. A committee would be appointed to proceed with the simultaneous development of advanced level examinations in Computed Tomography and Magnetic Resonance Imaging. The Board would reverse its previous position on re-examination by placing restrictions on the number of times a candidate could repeat the examination for registration and the length of time eligibility for examination and re-examination could be retained. The impending dissolution of CAHEA would necessitate the Registry to adopt and publish a statement of its interim position on accreditation. The Registry would adopt and implement mandatory continuing education requirements. The Board would also adopt and publish *Standards of Ethics* to describe the procedures followed by the ARRT in evaluating compliance with the ethical standards of professional behavior and the steps to be fol-

lowed in cases of noncompliance. The Board would also adopt and implement a transfer agreement under which a rival credentialing body would be dissolved and its members absorbed by the ARRT. On June 30, 1994 the count of certificates in good standing would reach 235,763 including 191,506 in radiography, 11,223 in nuclear medicine technology, 9,566 in radiation therapy technology, 1,700 in cardiovascular-interventional technology and 21,768 in mammography.

1990

In January the ARRT Mammography Advisory Committee met in Minneapolis to begin the development of an advanced-level examination in mammography. Since the examination was to be developed at an accelerated pace, the task inventory and the content specifications would be developed simultaneously. The examination would be scheduled for administration within the next 18 to 24 months.

At its February meeting the ARRT Board of Trustees voted to begin use of the term "radiation therapist" to refer to those certified by the ARRT in radiation therapy technology effective in June 1992. The discipline would continue to be called radiation therapy technology.

The Board voted to adopt a proposed "Code of Ethics" to replace the "Principles of Professional Conduct" which had previously been published in the *ARRT Rules and Regulations*. The new code was intended to provide guidelines by which registered technologists should conduct themselves in the practice of their profession.

The Board voted to discontinue the Radiation Therapy Technology Credentials Committee in favor of having radiation therapy technology special eligibility cases reviewed by Board members specializing in radiation therapy and to appoint a Board member to attend each meeting of the Radiography Credentials Committee to serve as liaison with the Board.

After a discussion of the need to set a schedule for developing the CT, MRI and QA examinations, the Board agreed that the Cardiovascular-Interventional Technology Technology and Mammography examinations should be completed prior to beginning any additional examination development.

The Board discussed continued professional competence and adopted the

following policy statement:

> "The ARRT supports the concept of continued professional competence and will begin to investigate appropriate mechanisms for implementation."

Subsequently, the President appointed a committee to study the possibility of implementation of mandatory continued professional competence. The committee was composed of Jane Van Valkenburg, R.T., Belinda Phillips, R.T. and David Teates, M.D. Staff was instructed to begin preparation of a survey of a sample of current registrants to determine whether continuing education promotes continued professional competence and whether the ARRT should take measures to assure continued professional competence.

A comparison of the average ages of graduates of accredited educational programs taking ARRT examinations for the first time in 1982 with those of 1989 examinees indicated that the average age of radiography examinees had increased from about 23 years old in 1982 to about 25 in 1989. For nuclear medicine technology examinees, the average age had increased from 26 in 1982 to 27.5 in 1989. The average age for radiation therapy technology examinees had risen from 26 in 1982 to 27.5 in 1989. These changes mirrored the general demographic changes occurring in student populations. The "traditional" student for allied health education programs was changing.

On July 1, 1990, Nancy O. Whitley, M.D. of Baltimore, Maryland began a 4-year term on the ARRT Board of Trustees. Doctor Whitley was the first female radiologist to be appointed to the ARRT Board.

The Radiography, Nuclear Medicine Technology and Radiation Therapy Technology examinations administered in July 1990 were based upon revised content specifications. The revisions resulted from the completion of the first 5-year cycles set for review/revision of the job analysis in 1985.

In November 1990 a special meeting of the ARRT Board of Trustees was held for the purpose of long-range planning. At that meeting, the Board set the following priorities for future planning:

1. Public relations
2. Continuing competency
3. Bylaws revision

A Task Force on Public Relations was appointed to develop recommenda-

tions in that area.

Later in November, ARRT representatives met with representatives of the ACR, SNM and NMTCB during the RSNA meeting in Chicago. The purpose of the meeting was to reopen communication lines between the ARRT and NMTCB and to discuss the areas of impasse between the organizations. It was agreed that the area of governance had been the most difficult problem encountered in previous discussions. This remained as an obstacle to achieving a single certifying examination in nuclear medicine technology since both organizations wanted to remain active in the certification of nuclear medicine technologists.

1991

The Board received the report of its Task Force on Continuing Professional Competence including a model entitled "Competency Requirements for Renewal of Certificate" as presented by Committee Chairperson Jane Van Valkenburg, Ph.D., R.T. The Board voted to establish a program of continuing competency based on that model. The program would be implemented in two phases. The first phase would run from January 1, 1993 through December 31, 1996. During that phase, individuals meeting the continuing education standards on a voluntary basis would receive recognition for their efforts. The second phase was scheduled to begin January 1, 1997. As of January 1, 1997 the renewal of registration of ARRT certificates would require either meeting continuing education requirements, passing one of the advanced level examinations or passing an entry level examination in another discipline.

The Board discussed three proposals which had been presented at the November 1990 ARRT-NMTCB meeting. Option A called for the creation of a Nuclear Medicine Commission which would act as arbitrator if the NMTCB and ARRT failed to agree on policy matters related to the certification process. Option B called for the creation of a Commission to assume the role of guiding examination preparation, content development, task analysis, etc., and the major role in appointing committees. Committees would be appointed from suggestions by NMTCB and ARRT. Option C called for one examination with two certifications by two organizations. It was the consensus of the Board that options A and B were not acceptable. Subsequently the NMTCB was notified of the Board's preference for option C.

In April the Registry announced the availability of its first two advanced level examinations. The first examination leading to a certificate of advanced qualifications in Cardiovascular-Interventional Technology would be administered in July 1991. The first examination in Mammography would be scheduled for administration in October 1991.

Executive Director McGowan was unable to attend the June 1991 meeting of the ARRT Board of Trustees due to illness. It was the only Board meeting he had missed in 25 years on the ARRT staff.

The Board reviewed a request for permission to incorporate the ARRT Content Specifications for the Examination in Radiography into a published textbook. It was noted that some publications had been duplicating the content specifications without permission and others had tried to get around copyright laws by modifying the content specifications slightly in order to publish them. Legal counsel had advised that permission could be granted to reproduce copyrighted work with the stipulation that a notice be included stating that the ARRT does not endorse the publication in which the Registry's copyrighted material is to appear. It was the consensus of the Board that since it was to the benefit of the professional community and the ARRT to have the content specifications widely disseminated, granting permission to such requests was reasonable, provided that the copyright was protected. ARRT staff was directed to develop a contract containing a written statement that use of the ARRT's copyrighted material does not imply any endorsement of the publication by the ARRT. Staff would need to review copy in order to have control of where the copyrighted material is placed in the publication and whether the disclaimer is stated appropriately.

The Board received a report on the May 1991 meeting of the Summit on Manpower which was the last meeting under the original three year commitment. It was noted that responsibility for leadership of the Summit was more evenly distributed among the participating organizations than it had been previously. The Board voted to continue ARRT participation in Summit activities.

The Board scheduled a long range planning meeting for September 1991 and appointed a Task Force on Continuing Professional Competence to develop a plan for future presentation to the Board.

The ARRT sponsored actress Ann Jillian as keynote speaker at the

International Society of Radiographers and Radiologic Technologists Conference of the Americas in Albuquerque, New Mexico in June. In her address, Ms. Jillian described the diagnosis of her breast cancer and the ensuing treatment and expressed her appreciation for the professionals in the radiological sciences who helped her through her ordeal.

Jonathan D. Mishkin, M.D. of Castleton, New York was appointed by the ACR to a four year term on the ARRT Board of Trustees effective July 1991. Dr. Mishkin's father, Mark M. Mishkin, M.D., had preceded him on the Board from 1968 to 1976, making them the only father and son to have served on the Board.

In July 1991 the examination in Cardiovascular-Interventional Technology was administered for the first time. 1,048 candidates participated in the initial examination.

In September the Task Force on Public Relations presented its recommendations at a long range planning meeting of the Board. The goal of the Registry's public relations effort would be to heighten awareness of the radiologic technology profession by identifying the role of a registered radiologic technologist and by emphasizing the importance of being registered. The Board voted to adopt an outline of activities, budget and implementation schedule as proposed by the Task Force.

The Board voted to proceed with the simultaneous development of advanced level examinations in Computed Tomography (CT) and Magnetic Resonance Imaging (MRI). One committee would be appointed to develop both examinations. The committee would be composed of persons qualified in both CT and MRI.

The first examination in Mammography was administered to 4,100 examinees in October 1991.

In December 1991 negotiating teams representing the ARRT and the NMTCB met at Chicago and developed a new proposal for consideration by the NMTCB and ARRT Boards in 1992. That proposal called for a common certification examination in nuclear medicine technology to be developed conjointly by the NMTCB and ARRT by 1995.

On December 31, 1991 Roland McGowan retired as ARRT Executive Director. Mr. McGowan had assumed that position on July 1, 1965 upon the

retirement of Alfred B. Greene. During his nearly 26 years of service to the Registry, McGowan had demonstrated great strength, foresight and initiative in keeping the organization vital and effective in an era of nearly constant social, technological and political change.

1992

Jerry B. Reid, Ph.D., became acting Executive Director on January 1, 1992 following the retirement of Roland McGowan.

At its January 1992 meeting, the Board of Trustees offered the position of Executive Director to Reid and he accepted it effective immediately. The Board discussed the new Executive Director's proposal for reorganization of the staff. The proposal suggested three divisions; a Division of Administrative Services, a Division of Regulatory Services and a Division of Technical Services. Registered technologists would be employed as Assistant Executive Directors to head the Division of Administrative Services and the Division of Regulatory Services. An experienced psychometrician would be hired to replace Reid as Director of Psychometric Services. Virginia Haselhuhn, R.T. would be promoted to the position of Assistant Executive Director for Administrative Services from her previous position of Director of Administrative Services. A nationwide search would be conducted for qualified applicants for the position of Assistant Executive Director for Regulatory Services. The Board voted to accept the proposal.

The Board discussed a letter it had received from the ARCRT asking the ARRT to consider absorbing the 1,400 active members of the ARCRT into the ARRT. The letter noted that the ARCRT would like to dissolve if that action could take place.

The Board of Directors of the ASRT requested that the issue of technologist majority representation on the ARRT Board be placed on the ARRT meeting agenda for discussion. It was the consensus of the Board that a proposal be discussed at the June 1992 Board meeting.

At its June 1992 meeting, the ARRT Board of Trustees voted unanimously to add a fifth technologist to the Board. The fifth technologist would be appointed by the ASRT and his/her term would begin on July 1, 1993. This action culminated a nine year consideration by the ARRT of the idea of majority representation by technologists on the ARRT Board. The Board

composition had moved from three Trustees (all physicians) in 1922 to appointment of the first two Technologist Trustees in 1936 to equal technologist and physician representation in 1961 to majority representation by technologists in 1993.

The Board discussed the Americans with Disabilities Act which had gone into effect in January 1992. It was noted that the ARRT was currently in compliance with that law having begun to offer special arrangements for testing disabled applicants many years prior.

The Board reviewed the format of the current registration renewal forms. Complaints had been received about asking for the name and address of the registrant's place of employment. It was the consensus of the Board that this question should be eliminated from the renewal form. The Board also reviewed data which had been collected in the renewal process. Projected data indicated that 960 registered radiographers were working in radiation therapy even though they were not certified as radiation therapists. It was suggested that those individuals represented potential future examinees in radiation therapy and should be made aware of suitable educational opportunities in radiation therapy. The Board agreed to a future survey of radiographers working in radiation therapy. It was also noted that 70% of ARRT registrants were involved in some type of continuing education.

The Board discussed a meeting between representatives of the ARRT and ARCRT which had taken place in March 1992 in which the ARCRT representatives had appeared amenable to a proposal to dissolve their organization if the ARRT would accept active members of the ARCRT for registration without additional examination. Subsequently, the ARRT Board agreed to develop an agreement under which it would immediately begin the process of transfer of the registration of the approximately 1400 currently active members of the ARCRT to the ARRT in the event that the ARCRT Board should pass a resolution for dissolution. The Registry's goal was the unification of the certification process and the subsequent standardization of certification requirements.

The Board also considered the possibility of limiting the number of times an applicant could repeat the examination. It was noted that, prior to 1980, the Registry had a rule which restricted the number of times an applicant could sit for the examination. That rule was dropped on advice of legal counsel

because of what he considered a precedent setting case in Colorado where a Federal judge had struck down a rule which restricted the number of times a candidate could take the state bar examination. Current legal counsel had advised Registry staff that a restriction could be placed on the number of examinations which could be taken by an applicant if the Board of Trustees provided a rationale that was appropriate from a substantive, professional qualification standpoint. The rationale for again placing restrictions on re-examination was that allowing unsuccessful examinees to continue employment in the field indefinitely on the basis of their being "registry eligible" could be inimical to the standards of the profession as well as the safety of the patient. The Board approved the following policy:

> "Effective July 1, 1994, applicants found to be eligible for examination in radiography, nuclear medicine technology or radiation therapy would be allowed three attempts to pass the certification examination. The examinees would have to complete the three attempts within a 3-year period of time. When either three unsuccessful attempts had been made or three years had expired, the individual would no longer be considered eligible. However, the individual could obtain eligibility to retake the examination one additional time if the individual submitted documentation indicating completion of remedial activities acceptable to the ARRT following the last participation in the examination. The fourth attempt would have to occur within the one-year period following the third unsuccessful attempt. Those failing on the fourth attempt or waiting longer than one year following the third unsuccessful attempt could only become eligible by re-entering and graduating from an accredited educational program."

The ARRT representatives to the May Summit on Manpower reported that while the Summmit was still a valuable forum for the various organizations to discuss issues, it appeared that the manpower shortage had eased and that the primary objective of the Summit had moved from the initial focus on manpower to the area of "professional status."

The Board approved several individuals for the CT-MRI Advanced Level Examination Advisory Committee. The Board approved the development of a job analysis to support an advanced level examination in quality assurance.

The Board discussed the impact that implementation of mandatory continuing education requirements would have on retired technologists. It was felt that many retired technologists would drop their ARRT registration. The Board created a new "retired" category. Persons in that status would be required to pay the annual renewal fee but would not need to acquire any CE credits to remain in good standing. Retired registrants who did not

choose to be placed in the retired category could retain "active" status by meeting the same CE requirements as employed registrants. However, registrants who opted for retired status would have to pass the ARRT examination for registration to be returned to active status.

On July 1, 1992 Mark Raymond, Ph.D., was hired as the ARRT Director of Psychometric Services. Dr. Raymond would replace Jerry Reid who had performed the duties of that position from April 1979 until January 1992 when he was appointed Executive Director.

In October 1992, the AMA announced that its Committee on Allied Health Education and Accreditation (CAHEA) would be dissolved in July 1994. CAHEA had been the agency recognized by the United States Office of Education (USDE) for the accreditation of educational programs in radiologic technology since 1976. Because ARRT eligibility requirements for examination in radiography, radiation therapy technology and nuclear medicine technology called for completion of a CAHEA-accredited educational program, the Registry would be forced to rethink its eligibility requirements in the very near future.

1993

In January an ARRT representative attended a meeting of the ARCRT Board of Directors in Chicago to present a proposal for assimilation of active members of the ARCRT into the ARRT following dissolution of the ARCRT. Subsequent to that meeting, the ARCRT Board announced that it was in general accord with that proposal.

At its January 1993 meeting, the ARRT Board of Trustees discussed a proposed Registrant Transfer Agreement to implement assimilation of active members of the ARCRT as registrants of the ARRT. The agreement provided that transfer registrants would be designated as originally certified by the ARCRT on their ARRT pocket cards and certificates of registration. However, ARCRT members would be eligible to take the ARRT Examination for Registration in Radiography and those passing the examination would be issued credentials identical to those of ARRT registrants.

The Board also discussed the potential for future problems resulting from the impending dissolution of CAHEA. The *ARRT Rules and Regulations* and other published documents would have to be revised to omit reference

to CAHEA. The Board subsequently voted to revise the *ARRT Rules and Regulations* to indicate that:

> "Applicants must have successfully completed a formal educational program accredited by a mechanism acceptable to the ARRT."

The Board discussed a recommendation of legal counsel to form a Minnesota nonprofit corporation and merge the existing Illinois corporation into it and then to dissolve the Illinois Corporation. This would enable the ARRT to benefit substantially from favorable laws with respect to indemnification of corporate trustees and officers as well as to allow any legal proceeding to take place in the state where the corporate office is located. Subsequently, the Board moved to adopt the "Articles of Merger" and "Agreement and Plan of Merger" as drafted by legal counsel.

The Board approved a proposed schedule of activities for updating the job analysis projects for radiography, nuclear medicine technology and radiation therapy with the July 1995 examinations projected to be the first to be based upon the updated content specifications.

The Board also approved steps to make the pocket credential more difficult to alter. Fraudulent use of ARRT credentials for gaining or maintaining employment was becoming increasingly frequent. A new pocket credential would be a part of the professional certification package which the ARRT had begun providing to newly certified technologists in 1992. That package also included a congratulatory statement, a score report, a certificate and gold seal and a cloth patch insignia which identified the discipline of certification.

The Board also accepted a recommendation of the United States Postal Service to designate St. Paul, Minnesota as the ARRT mailing address in place of Mendota Heights, Minnesota. Only the name of the city would be changed. The change was expected to provide better mail delivery to the Registry office. Henceforth, the correct mailing address would be:

ARRT
1255 Northland Drive
St. Paul, MN 55120-1155

On February 13, 1993 the ARRT officially became a Minnesota non-profit organization.

In June the year-long search for an Assistant Executive Director for Regulatory Services ended with the employment of Thomas Kraker, M.Ed., R.T. Mr. Kraker had previously been employed as Chairman of the Department of Radiological Sciences at Boise State University and had served as President of the ASRT in 1987-88.

At its June 1993 meeting, the Board voted to establish a *"Five Year Rule"* on applications for examination effective January 1, 1995. Under that rule, application for examination would have to be made within five years of graduation to be considered under the regular eligibility requirements. The rule would be phased in such that anyone graduating prior to January 1, 1995 would be treated as if graduation had occurred on January 1, 1995.

The Board also adopted updated *Rules and Regulations* and a new document titled *"Standards of Ethics of The American Registry of Radiologic Technologists."* The new document incorporated the ARRT Code of Ethics and described the procedures followed by the ARRT in evaluating compliance with the ethical standards of professional behavior and the steps to be followed in cases of noncompliance. The *Standards* would be included in the appendix sections of the new Examinee Handbook and the Handbook for Advanced Level Examinations. The Board also moved to proceed with the establishment of a three member Ethics Committee of Trustees under the provisions of the *Standards*.

The Board adopted a schedule for development of the proposed advanced level examination in Quality Assurance (QA). A QA Advisory Committee would be appointed in January 1994. Content specifications would be finalized in June 1995. Item development would begin in August 1995. The first examination administration was tentatively scheduled for July 1996.

The Board authorized an updating in the Registry's computer capabilities through purchase of an IBM AS/400 system. The new system would provide the ARRT with updated computer technology to position it for the next several years. The Board also approved the establishment of a new staff position of Director of Computer Services.

The Board authorized a one-year commitment to participation in the Summit on Radiological Sciences (previously the Summit on Manpower) with the fall 1994 meeting being the last meeting. Further participation would depend upon a re-focus of the group's efforts. In July 1993, the mem-

bership of the ARCRT approved the membership transfer agreement as proposed by the ARRT. That agreement was signed by authorized representatives of the ARRT and ARCRT on August 9, 1993.

1994

In January the ARRT Board adopted the following interim position statement on accreditation:

> "The ARRT Rules and Regulations require that applicants for certification in radiography, nuclear medicine technology and radiation therapy must have completed a formal educational program accredited by a mechanism acceptable to the ARRT. An acceptable mechanism is one which:
>
> 1. Is recognized by the U.S. Department of Education as an accreditation agency; and
> 2. Evaluates programs using standards endorsed by the ARRT.
>
> Accreditation agencies attesting to their compliance with the above requirements will be deemed to have met the definition of a mechanism acceptable to the ARRT subject to periodic verification."

It was noted that both the JRCERT and the JRCNMT had applied to the USDE for direct responsibility for educational program accreditation in the areas where they had previously performed program review for CAHEA. Since the Registry had no information indicating USDE recognition of the JRCERT or JRCNMT, the Board decided to protect existing programs and the students in them by extending eligibility to the graduates of all programs having CAHEA accreditation at the time of CAHEA's demise. Graduates from programs that did not hold CAHEA accreditation as of July 1, 1994 would not meet regular ARRT eligibility requirements unless the program was accredited by a mechanism meeting the ARRT's newly identified standards.

The Board discussed the Special Eligibility Requirements under which formally trained technologists who were not graduates of accredited educational programs in the United States could take the examination for registration after a Board determination of the equivalency of their training to that of a U.S. graduate. It was the consensus of the Board that those requirements were providing no benefit to the quality of healthcare. Therefore, the Board voted to discontinue the Special Eligibility Requirements effective January 1, 2000. However, it agreed to investigate an eligibility mechanism for foreign-trained technologists.

The Board reviewed its policy on the use of calculators by examinees.

It was noted that calculators capable of storing formulas and text were readily available. Examinees possessing such a device would have an unfair advantage over those who did not. The Board voted to restrict the types of calculators used by examinees to basic non-programmable calculators effective January 1, 1995. Thereafter, storing information in a calculator for use on the examination would be considered as an attempt to subvert the integrity of the examination process and would be grounds to dismiss an examinee from the administration and to conduct a review of future eligibility.

At its June, 1994 meeting, the Board noted that the USDE had issued interim recognition to the JRCERT and JRCNMT through December 31, 1995. The Trustees decided to set the date through which residual CAHEA-accreditation would last as December 31, 1995.

On July 1, 1994, the American Registry of Clinical Radiography Technologists (ARCRT) ceased to exist. Its active membership was given the opportunity to transfer their registration to the ARRT. In October 1994, 76 registrants originally certified by the ARCRT took the ARRT examination for registration in radiography. By October 31, 1994, 1682 ARCRT registrants had applied for transfer to the ARRT.

1995

The centennial of the discovery of x-rays proved to be a year of significant change for the Registry. The ARRT demonstrated once again its openness to change, its willingness to challenge long-held assumptions, and the strength to discard those assumptions that no longer held and to move ahead.

The total number of registered technologists grew to roughly 220,000, an increase of about 4% during the year. The number of certificates grew to about 270,000 during 1995—an increase of about 7%—reflecting the increased number of individuals holding multiple certificates, particularly in advanced categories. The July 1995 examinations for radiography, nuclear medicine technology and radiation therapy technology were the first to be based upon the updated content specifications. The updated specifications were the result of the review/revision cycle carried out every five years. The number of examinees taking the examination for the first time in 1995 as compared to 1994 fell by 3% for radiography, fell by 6% for nuclear medicine and fell by 10% in radiation therapy. The declining numbers of exami-

nees were reflective of the decreased enrollments in educational programs which, in turn, was in reaction to the decreased number of job vacancies.

The Computed Tomography Examination and the Magnetic Resonance Imaging Examination were administered for the first time in March 1995. For the year, approximately 4,600 took the MRI Examination as first time examinees and about 5,300 took the CT Examination. Approximately three-fourths of the examinees passed on their first attempt.

The job analysis survey in quality management was completed in 1995. The results of the survey were used to determine which tasks to cover on the examination. The first examination was scheduled for 1997.

The ARRT Rules and Regulations require that applicants for examination in radiography, nuclear medicine technology and radiation therapy technology must have successfully completed a formal educational program accredited by a mechanism acceptable to the ARRT. For many years, the accreditation issued by CAHEA was the only one recognized by the ARRT. CAHEA's demise in 1994 stimulated the ARRT to consider other mechanisms. The Board voted in June 1995 that the accreditation mechanisms administered by the Joint Review Committee on Education in Radiologic Technology, the Joint Review Committee on Educational Programs in Nuclear Medicine Technology, the New England Association of Schools and Colleges, North Central Association of Colleges and Schools, Northwest Association of Schools and Colleges, Southern Association of Colleges and Schools, Western Association of Schools and Colleges, and Middle States Association of Colleges and Schools were acceptable to the ARRT.

The ARRT's public relations project which was designed to enhance the image of radiologic technologists in the eyes of the general public, other health care professionals and within the profession itself continued through 1995. A series of three ads appeared in the following publications: *Radiologic Technology, Radiology, Hospitals, Nursing94,* and *Advance for Radiologic Technologists in* 1994 and 1995. The print ads were scheduled to appear in 1995-96 in *The New England Journal of Medicine, Modern Health Care, Respiratory Care, Nursing95, Advance* and *Radiologic Technology.* A poster commemorating the 100th anniversary of Roentgen's discovery of x-rays was produced and widely distributed.

Moral fitness remained an eligibility requirement for initial certification and

continued registration by the ARRT. The number of cases of possible violation of the *ARRT Standards of Ethics* reviewed by the ARRT remained high in 1995.

The mandatory phase of the ARRT's Continuing Education Requirements began January 1, 1995, with the first verification of compliance with the requirements scheduled for 1997. The requirements specified the completion of 24 CE credits every two years or passing an examination in another category.

Epilogue

The rapidly changing health care environment will continue to cause certification to adapt to future conditions. However, 100 years after the discovery of x-rays and 73 years after its founding, the ARRT remains true to its original mission of identifying individuals qualified to practice in the profession.

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Trustee	Armand Brodeur, M.D., St. Louis, MO
Trustee	Mattie J. Tabron, R.T., Washington, DC

1980-1981

President	John P. Clements, M.D., Burlington, VT
Vice President	Raymond W. Horner, R.T., Harrisburg, PA
Treasurer	Bernice T. Vallino, R.T., Belleville, IL
Secretary	Armand Brodeur, M.D., St. Louis, MO
Trustee	Helmut A. Mueller, M.D., Dallas, TX
Trustee	Mattie J. Tabron, R.T., Washington, DC
Trustee	Neta B. McKnight, R.T., Jackson, TN
Trustee	C. Jules Rominger, M.D., Philadelphia, PA

1981-1982

President	Neta B. McKnight, R.T., Jackson, TN
Vice President	Helmut A. Mueller, M.D., Dallas, TX
Treasurer	Leroy R. Sparks, R.T., New York, NY
Secretary	Mattie J. Tabron, R.T., Washington, DC
Trustee	Armand Brodeur, M.D., St. Louis, MO
Trustee	C. Jules Rominger, M.D., Philadelphia, PA
Trustee	John P. Clements, M.D., Burlington, VT
Trustee	James A. Wasseen, R.T., Richmond, VA

1982-1983

President	Armand Brodeur, M.D., St. Louis, MO
Vice President	Mattie J. Tabron, R.T., Washington, DC
Treasurer	James A. Wasseen, R.T., Richmond, VA
Secretary	C. Jules Rominger, M.D., Philadelphia, PA
Trustee	John P. Clements, M.D., Burlington, VT
Trustee	Neta B. McKnight, R.T., Jackson, TN
Trustee	Richard S. Colvin, M.D., Atlanta, GA
Trustee	Silvio E. Ubaldi, R.T., Livingston, NJ

1983-1984

President	James A. Wasseen, R.T., Richmond, VA
Vice President	C. Jules Rominger, M.D., Philadelphia, PA
Treasurer	Richard S. Colvin, M.D., Atlanta, GA
Secretary	Silvio E. Ubaldi, R.T., Livingston, NJ
Trustee	Neta B. McKnight, R.T., Jackson, TN
Trustee	John P. Clements, M.D., Burlington, VT
Trustee	Thomas S. Harle, M.D., Houston, TX
Trustee	Marilyn Holland, R.T., Iowa City, IA

1984-1985

President	Richard S. Colvin, M.D., Atlanta, GA
Vice President	Marilyn Holland, R.T., Iowa City, IA
Treasurer	Silvio E. Ubaldi, R.T., Livingston, NJ
Secretary	John P. Clements, M.D., Burlington, VT
Trustee	James A. Wasseen, R.T., Richmond, VA
Trustee	Thomas S. Harle, M.D., Houston, TX
Trustee	John A. Stryker, M.D., Hershey, PA
Trustee	Jane A. Ward, R.T., Ogden, UT

1985-1986

President	Marilyn Holland, R.T., Iowa City, IA
Vice President	Thomas S. Harle, M.D., Houston, TX
Treasurer	Kenneth R. Stevens, M.D., Portland, OR
Secretary	Jane A. Ward, R.T., Ogden, UT
Trustee	James A. Wasseen, R.T., Richmond, VA
Trustee	Richard S. Colvin, M.D., Atlanta, GA
Trustee	Elona McLees, R.T., Coralville, IA
Trustee	C. David Teates, M.D., Charlottesville, VA

1986-1987

President	Thomas S. Harle, M.D., Houston, TX
Vice President	Elona McLees, R.T., Coralville, IA
Treasurer	Marilyn Holland, R.T., Iowa City, IA
Secretary	C. David Teates, M.D., Charlottesville, VA
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Trustee	Jane A. Ward, R.T., Ogden, UT
Trustee	Richard S. Colvin, M.D., Atlanta, GA
Trustee	Rebecca Ann Kruse, R.T., Portland, OR

1987-1988

President	Elona McLees, R.T., Coralville, IA
Vice President	C. David Teates, M.D., Charlottesville, VA
Treasurer	Kenneth R. Stevens, M.D., Portland, OR
Secretary	Rebecca Ann Kruse, R.T., Portland, OR
Trustee	Jane Ann Ward, R.T., Ogden, UT
Trustee	Richard S. Colvin, M.D., Atlanta, GA
Trustee	Salvatore T. Martino, R.T., Glen Cove, NY
Trustee	Jonathan L. Stolz, M.D., Reading, PA

1988-1989

President	C. David Teates, M.D., Charlottesville, VA
Vice President	Rebecca Ann Kruse, R.T., Portland, OR
Treasurer	Kenneth R. Stevens, M.D., Portland, OR
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Trustee	Richard S. Colvin, M.D., Atlanta, GA
Trustee	Belinda H. Phillips, B.S., R.T., Deland, FL

1990-1991

President	Kenneth R. Stevens, M.D., Portland, OR
Vice President	Jane A. Van Valkenburg, Ph.D., R.T., Ogden, UT
Treasurer	Jonathan L. Stolz, M.D., Reading, PA
Secretary	Belinda H. Phillips, B.S., R.T., Deland, FL
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Trustee	Salvatore T. Martino, Ed. D., R.T., Glen Cove, NY
Trustee	Nancy O. Whitley, M.D., Baltimore, MD
Trustee	Rebecca Ann Kruse, R.T., Portland, OR

1991-1992

President	Jane A. Van Valkenburg, Ph. D., R.T., Ogden, UT
Vice President	Nancy O. Whitley, M.D., Baltimore, MD
Treasurer	Salvatore T. Martino, Ed.D., R.T., Glen Cove, NY
Secretary	Belinda H. Phillips, B.S., R.T., Deland, FL
Trustee	Rebecca Ann Kruse, R.T., Portland, OR
Trustee	C. David Teates, M.D., Charlottesville, VA
Trustee	Kenneth R. Stevens, M.D., Portland, OR
Trustee	Jonathan D. Mishkin, M.D., Castleton, NY

1992-1993

President	Nancy O. Whitley, M.D., Baltimore, MD
Vice President	Salvatore T. Martino, Ed.D., R.T., Glen Cove, NY
Treasurer	Belinda H. Phillips, B.S., R.T., Deland, FL
Secretary	Jonathan D. Mishkin, M.D., Castleton, NY
Trustee	C. David Teates, M.D., Charlottesville, VA
Trustee	Rebecca Ann Kruse, R.T., Portland, OR
Trustee	Hywel-Madoc Jones, Ph.D., M.D.,Boston, MA
Trustee	Edwin J. Dice, M.S., R.T., Gainesville, FL

1993-1994

President	Salvatore T. Martino, Ed.D., R.T., Glen Cove, NY
Vice President	Jonathan D. Mishkin, M.D., Castleton, NY
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Secretary	Hywel-Madoc Jones, Ph.D., M.D., Boston, MA
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Trustee	Edwin J. Dice, M.S., R.T., Gainesville, FL
Trustee	Belinda H. Phillips, B.S., R.T., Deland, FL
Trustee	Edwin L. Palmer, M.D., Boston, MA
Trustee	Robert J. Walker, M.S., R.T., Salt Lake City, UT

1994-1995

President	Jonathan D. Mishkin, M.D., Castleton, NY
Vice President	Belinda H. Phillips, B.S., R.T., Deland, FL
Treasurer	Hywel-Madoc Jones, Ph. D., M.D., Boston, MA
Secretary	Robert J. Walker, M.S., R.T., Salt Lake City, UT
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Trustee	Salvatore T. Martino, Ed. D., R.T., Glen Cove, NY
Trustee	Edwin J. Dice, M.S., R.T., Gainesville, FL
Trustee	Claire E. Bender, M.D., Rochester, MN
Trustee	Rosanne A. Paschal, Ph.D., R.T., Henderson, NV

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The History of the American Registry of Radiologic Technologists 1996-2022

The History of the American Registry of Radiologic Technologists 1996-2022

Researched, written, and edited by
Jerry B. Reid, Ph.D., past ARRT CEO
and
Paul A. Larson, M.D., FACR, past President of the ARRT Board of Trustees

Table of Contents

100 YEARS

A CENTURY OF RADIOLOGIC TECHNOLOGY

In November 1895, Wilhelm Conrad Roentgen discovered mysterious rays that could pass through most substances, casting shadows of solid objects. He named them X-rays, after the algebraic term for an unknown quantity. Soon, medical practitioners were using X-rays to identify bone structures, locate foreign objects in the body, and perform other types of medical imaging.

A year later, Antoine Henri Becquerel began to study radioactivity and look for natural sources of radiation. Marie Curie and Pierre Curie in 1898 discovered two radioactive elements: radium and polonium. By 1901, doctors were testing radium on skin lesions and using it to treat lupus and cancer at the Saint-Louis Hospital in Paris. Roentgen and the Curies would later win Nobel Prizes in Physics.

Their discoveries led to the job of X-ray technician—and now to the profession of radiologic technologist. Today's technologists work throughout health care, performing medical imaging, interventional procedures, and radiation therapy. Follow our timeline to see highlights from the profession's history. And visit arrt.org to see more!

1922

The Radiological Society of North America (RSNA)—with support from the American Roentgen Ray Society and the American Society of X-Ray Technicians (now ASRT)—founds what is now The American Registry of Radiologic Technologists (ARRT).

ARRT administers our first Radiography exam to Sister Mary Beatrice Merrigan. After answering 20 essay questions and submitting 10 required radiographic films, she becomes ARRT's first R.T.

1936

Rose Marie Pegues, R.N., becomes the first Black R.T.

1943

Erminda R. Clarke, R.T., of Lincoln, Nebraska, becomes the first woman to serve on our Board of Trustees.

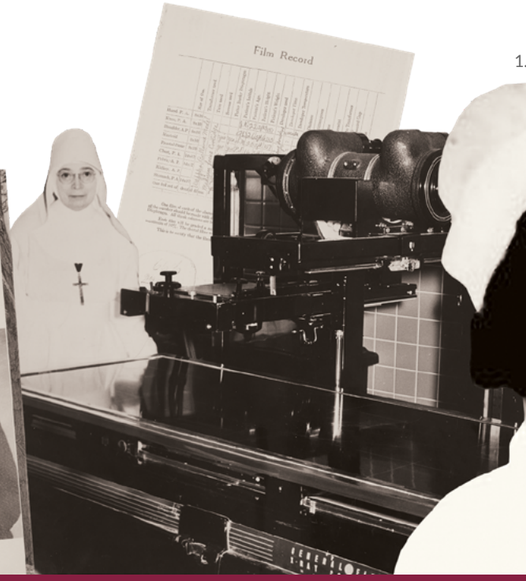
1954

The ARRT exam eliminates sample X-rays. The next year, ARRT drops the essay component and moves to all multiple-choice questions.

1962

ARRT adopts the more inclusive term "radiologic technologist" over "X-ray technician."

1.



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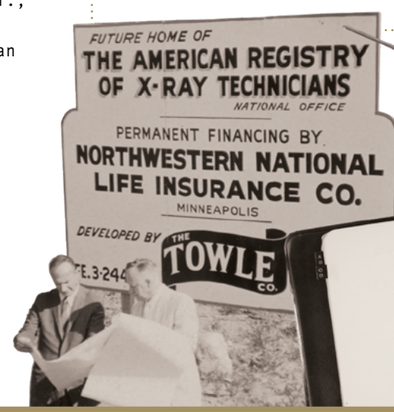

1959
ARRT publishes its first Code of Ethics

1963
First ARRT Nuclear Medicine Technology exam

1964
First ARRT Radiation Therapy exam

1: The Shadowmakers: A History of Radiologic Technology. American Society of Radiologic Technologists, 2020, (Page 45)
2: The Shadowmakers: A History of Radiologic Technology. American Society of Radiologic Technologists, 2020, (Cover 2)
3: Image courtesy of American Society of Radiologic Technologists

1896 Enrico Salvioni invents, Thomas Edison improves the first commercial fluoroscope to take radiographs (X-rays).

1913 William Coolidge invents the hot cathode X-ray tube, which is more dependable than previous versions and can treat deeper cancers.

1914 Marie Curie invents a mobile X-ray unit, enabling medics to scan wounded soldiers near battlefields during World War I.

1928 The Second International Congress of Radiology defines an international unit of radiation exposure—the roentgen—which enables physicists to reliably compare doses and results.

1940s Radiographers conduct chest X-rays in schools, workplaces, and clinics, screening for tuberculosis before patients become seriously ill.

1945 Tests and deployment of atomic bombs help bring an end to World War II, broaden awareness of the effects of radiation, and lead to the use of atomic energy in nuclear medicine.

1958 U.S. cardiologist F. Mason Sones Jr. mistakenly injects the small vessels of a patient's heart with a significant amount of contrast dye. The error ultimately leads to modern cardiac imaging.

1963 The first U.S. cyclotron begins operation at Washington University Medical School. By manufacturing radioisotopes, it reduces the need for natural radioactive sources.

4: The Shadowmakers: A History of Radiologic Technology, American Society of Radiologic Technologists, 2020. (Page 224)
5: The Shadowmakers: A History of Radiologic Technology, American Society of Radiologic Technologists, 2020. (Page 82)
* We no longer issue new credentials for Quality Management and Cardiovascular Interventional Radiography People who hold these credentials can maintain them indefinitely, however, if they continue to meet our ethical standards and other requirements for doing so.

1969

Royce Osborn, R.T., becomes the first Black president of ASRT. Today, ARRT funds a scholarship program that honors him.

1973

To commemorate ARRT's 50th anniversary, First Lady Patricia Nixon—a former radiographer—invites organizational representatives to the White House for tea.

1990

ARRT adopts its Standards of Ethics.

1991

ARRT administers our first "advanced level" (now postprimary) exams.

1995

ARRT adopts biennial continuing education requirements to help ensure that R.T.s stay up to date with their knowledge.

1999

ARRT begins the transition to computer-based exams, enabling candidates to take an exam throughout the year at locations across the U.S.

2005

ARRT launches a certification process for a new role,the Registered Radiologist Assistant (R.R.A.).

2007

ARRT's Board of Trustees approves time-limited certification for all credentials awarded on or after Jan. 1, 2011. The decision leads to the Continuing Qualifications Requirements (CQR) process.

2007

ARRT and the Society for Imaging Informatics in Medicine form the American Board of Imaging Informatics (ABII), which offers certification to imaging informatics professionals.

2022

ARRT and R.T.s celebrate a century of gold standard patient care.

1991
First ARRT Cardiovascular Interventional Radiography* and Mammography exams

1995
First ARRT MRI and CT exams

1997
First ARRT Quality Management* exam

2000
First ARRT Sonography exam

2001
First ARRT Vascular Sonography and Bone Densitometry exams

2003
ARRT splits Cardiovascular Interventional Radiography exam and administers our first Cardiac Interventional Radiography and Vascular Interventional Radiography exams

2004
First ARRT Breast Sonography exam

2005
First ARRT R.R.A. exam

1967 Godfrey Hounsfield invents the CT scanner, which increases by 100 times the amount of information in each image.

1977 Raymond Damadian, M.D., along with Lawrence Minkoff and Michael Goldsmith, perform the first MRI body scan of a human being.

1983 Nuclear medicine specialist Henry Wagner Jr., M.D., uses a positron emission tomography (PET) scanner to take an image of a radioactive tracer in his own brain.

1986 Ultrasound technology improves, resulting in the first 3D image of a fetus. By the late 1990s, 4D ultrasounds can show movement in real time.

1991 John Belliveau presents images of human brain activity using functional MRI, a process that measures changes in blood flow that correspond with brain activity.

1995 DuPont Diagnostic Imaging introduces a system that converts X-rays into electronic data, making it possible to immediately view images on a screen instead of having to develop film.

2008 A new generation CT scanner makes it possible to take images of the heart and coronary arteries in less than one second.

2020 The worldwide COVID-19 pandemic severely disrupts every part of society—including health care as a whole and technologist education programs.

ARRT Staff Leaders

H.S. Tyler: 1922 - 1923

J.R. Bruce: 1923 – 1933

Alfred B. Greene, R.T., FASRT: 1934 – 1965

Roland C. McGowan, R.T., FASRT: 1965 – 1991

Jerry B. Reid, Ph.D.: 1992 – 2022

Liana Watson, DM, R.T.(R)(M)(S)(BS)(ARRT), RDMS, RVT, PMP, FASRT, CAE: 2023 – present

Chapter One

1996-1999

OVERVIEW

Roland McGowan would retire after 26 years of service as Executive Director. He would be replaced by Jerry B. Reid, Ph.D., who previously served as Associate Executive Director and Director of Psychometric Services. The ARRT staff would be reorganized into three separate divisions: Administrative Services, Regulatory Services, and Technical Services. The Board of Trustees would also be reorganized to provide for majority representation of technologists on the Board. The first advanced-level examinations in Cardiovascular Interventional Technology and Mammography would be administered in 1991. Computed Tomography (CT) and MRI would be added in 1995 and Quality Management in 1997. As the decade ended, preparations were underway for examinations in Sonography, Vascular Sonography, and Bone Densitometry. ARRT would clarify language related to primary versus advanced-level examinations.

The Board would reverse its previous position on re-examination by placing restrictions on the number of times a candidate could repeat the examination and the length of time eligibility for examination and re-examination could be retained. The impending dissolution of CAHEA would necessitate that the Registry adopt a new statement on accreditation that would recognize regional accrediting agencies in addition to the Joint Review Committees (JRCs). ARRT would adopt and implement mandatory continuing education requirements. The Board would also adopt and publish *ARRT Standards of Ethics* to describe the procedures ARRT follows in evaluating compliance with the ethical standards of professional behavior and the steps to be followed in cases of noncompliance. The Board would also adopt and implement a transfer agreement under which a rival credentialing body would be dissolved, and its members absorbed by ARRT.

As of early 2000, the count of certificates in good standing would reach 220,573, including 209,750 in Radiography, 10,893 in Nuclear Medicine Technology, 12,300 in Radiation Therapy, 3,940 in Cardiovascular Interventional Technology, 43,194 in Mammography, 19,148 in CT, 11,525 in MRI, and 1,234 in Quality Management. By the end of the decade, about one-third of R.T.s would be certified in more than one category; about 29% would hold at least one advanced-level certification.

1996

Accreditation remained a hot topic in 1996 following ARRT's decision to recognize the six regional accrediting agencies in addition to the Joint Review Committee on Education in Radiologic Technology (JRCERT) and Joint Review Committee on Educational Programs in Nuclear Medicine Technology (JRCNMT) as acceptable to ARRT. An ad hoc committee was formed due

to concerns expressed by the educational community and reported to the whole Board. Following review of the report and considerable discussion, the Board reaffirmed its decision. It noted, "Accreditation's intent is not to assess the competence of individuals, but rather to evaluate the learning environment. The purpose of certification is to assess the competence of the individual." The Board noted that it would monitor the activities of the regional accrediting bodies and the health of the JRCs in response to concerns that college programs would drop their programmatic accreditation and jeopardize the financial health of the JRCs.

The Board also accepted the "Standards for Endorsement of Accreditation Agencies" which stated in part, "*The ARRT Rules and Regulations* require that applicants for certification in Radiography, Nuclear Medicine, and Radiation Therapy must have completed a formal educational program accredited by a mechanism acceptable to ARRT." The document was sent to the ASRT, American College of Radiology (ACR), ACERT, JRCERT, JRCNMT, AHRA, Adverse Event Reporting System (AERS), and regional accrediting bodies.

The mortgage on ARRT's building in Mendota Heights was retired in 1995, and the Board began considering purchasing two additional lots behind the current building for future expansion. Expansion of the parking lot on the current site was approved.

The Board adopted multiple recommendations from the Ethics Committee meeting of October 1995, which addressed the types of sanctions that could be issued, information to be considered in determining the level of sanction in a specific case, public notification of the most serious sanctions, and internal committee processes related to conflict of interest of an Ethics Committee member.

Development of the new Quality Management certification continued with approval of the task inventory, setting of eligibility requirements, and setting of the number of items at 140. The Board also discussed broader issues of eligibility requirements for current and future advanced exams.

The Board discussed an ASRT proposal for a baccalaureate degree requirement for entry into radiation therapy by the year 2000, but no action was taken pending further development of the proposal.

In November, the Board held a long-range planning meeting, facilitated by former Board member Sal Martino, Ed.D. The Board reviewed the strategic plan that was adopted in July 1994 and reviewed and revised the goals. The revisions were adopted at the January 1997 Board meeting.

The number of first-time examinees continued to decline with decreases of 9% in Radiography, 13% in Nuclear Medicine Technology, and 25% in Radiation Therapy Technology compared to 1995.

1997

ARRT celebrated its 75th anniversary with new letterhead, a lapel pin that was given out at

selected meetings during the year, and a 75th anniversary panel for the ARRT exhibit. A website was approved with an initial focus on the anniversary. A time capsule was created to be opened on the 100th anniversary in 2022.

The Board continued to develop practice-specific eligibility requirements for advanced-level examinations with an expected implementation date of January 1999.

The Board noted that special eligibility requirements would be discontinued in 2000, meaning that all applicants must graduate from an accredited educational program. This would be most relevant to technologists educated outside the U.S. and who were currently subject to review by a credentials committee. Those technologists would need to seek advanced placement in U.S. programs to meet ARRT's education eligibility requirement.

ARRT issued a position statement on the baccalaureate degree in radiation therapy. It concluded that "the link between a baccalaureate degree and the requirements for professional practice must be demonstrated before ARRT could consider the baccalaureate degree as an eligibility requirement for certification."

The Board approved developing an advanced-level certification in Sonography that would be available to ARRT Registered Technologists only. The Board chose not to seek a strategic alliance with the American Registry for Diagnostic Medical Sonographers (ARDMS). A negative reaction from some members of the imaging community was noted. The Sonography exam would be developed as a computer-based examination rather than the standard paper-and-pencil format.

ARRT's financial status was becoming increasingly negative after several years of a decreasing number of examinees. The Board approved fee increases effective in 1998 and 1999.

The first Quality Management examination was administered in March 1997, and the pass/fail standard (cut score) was set for that discipline. 70% of examinees passed the examination.

The initial effects of the continuing education (CE) requirements that began in 1995 were noted as technologists were completing their first biennial requirements. Data showed a small increase in the number of technologists dropping their registration, from 6.5% prior to required CE to 7.5% after the CE requirement. However, subsequent information indicated that more than half of the people who were reported as dropped reinstated later in the same year. In addition, 12.5% of technologists went on CE probation with the risk that some of them would also lose their registration.

The number of first-time examinees continued to decline with decreases of 8% in Radiography, 22% in Nuclear Medicine Technology, and 30% in Radiation Therapy compared to 1996.

1998

The Board made a small change to ARRT's mission statement, indicating that the mission is to "recognize individuals qualified" rather than to "identify" such individuals. Corresponding edits

were made in the supporting statements.

Clinical competencies remained an active topic for primary and advanced-level examinations. The Board adopted revised didactic and clinical competency requirements for primary examinations but delayed implementation until Jan. 1, 2002. It continued to develop clinical experience requirements for advanced-level examinations with a revised effective date of 2000.

The Board moved toward computer-based test (CBT) administration for all examinations. It also approved the addition of unscored experimental items, later known as pilot items, with a limit of 10% per examination. Sylvan Prometric was chosen to administer the examinations in computer-based format. The Mammography examination would be the first offered by computer on Jan. 1, 1999, with other examinations anticipated in 2000. The lessons learned with the transition of Mammography from paper and pencil to CBT would be applied to the other examination programs.

Development of the Sonography examination remained on schedule, and the Board decided to create a separate examination in Vascular Sonography with a launch date of 2001. An initial proposal was presented for the development of an examination in Bone Densitometry. Consideration was given to examinations in phlebotomy and electrocardiography, but lithotripsy was rejected as a possible subject. Initial discussions began on splitting out the cardiac section from the Cardiovascular-Interventional Radiography examination.

To avoid confusion with the term "advanced-level examinations," an initial position statement was drafted to clarify that the examinations in Radiography, Nuclear Medicine Technology, and Radiation Therapy Technology are professional level examinations. A second position statement on examination category terminology further clarified the issue by stating:

> ARRT refers to the Radiography, Nuclear Medicine Technology, and Radiation Therapy Technology examinations as primary categories and considers them to be the foundation of certification in the profession of radiologic technology. "Primary" is used in the sense of being of highest importance. The advanced-level examinations build upon and extend the knowledge and skills represented by the primary categories. The existence of certificates of advanced qualifications is not intended to diminish the importance of the primary certifications.

30% of Registered Technologists held more than one certification, up from 5% in 1991 when the first advanced-level examinations were offered.

The number of first-time examinees continued to decline with decreases of 6% in Radiography, 22% in Nuclear Medicine Technology, and 11% in Radiation Therapy Technology compared to 1997. It was noted that the current examinee numbers were similar to those of the late 1980s, but 1998 was also the first year in many that the total number of Registered Technologists decreased.

1999

The mission statement was updated with insertion of the phrase "to promote high standards of patient care in" replacing the words "for purposes of." ARRT changed the terminology "radiation therapy technology" to "radiation therapy."

With increasing computerization of ARRT and development of the internet, ARRT announced that it would no longer print a hard copy of the Directory of Registered Technologists as of 2000. Instead, the information would be available via the ARRT website.

ARRT began to consider mechanisms by which graduates of Canadian programs could be eligible for ARRT certification. JRCERT volunteered to evaluate the Canadian accreditation system relative to the JRCERT system, and ARRT agreed to consider that information in its deliberations. ARRT also began to investigate ways for technologists certified by NMTCB but not ARRT to be eligible for the MRI examination and the feasibility of allowing graduates of accredited sonography educational programs to sit for the Sonography examination.

Computer-based testing in Mammography was implemented smoothly, although a glitch occurred in September due to a software conversion by Prometric. Plans continued for all examinations to be computer-based beginning in 2000. Development of the Sonography, Vascular Sonography, and Bone Densitometry certification programs remained on schedule.

The Board heard initial discussion of advanced-practice technologists and requested that the ASRT forward scope of practice, practice standards and curriculum for the Radiology Practitioner and Radiation Therapy Practitioner. The Board was concerned with the term "practitioner" and felt it was premature to consider exam development.

Although the number of first-time candidates in primary exams again fell compared to the previous year, the October 1999 administration was the largest in ARRT history due to increasing numbers for advanced exams. Only Mammography volume did not increase among the advanced categories. This was felt to be partly due to clinical experience requirements scheduled for implementation in January 2000.

For several years, the world was concerned about computer issues with the change in the century since most dates were stored with only the final two digits. This was known as the Y2K problem. ARRT's computer services department prepared internally and monitored external entities. In the end, it was much ado about nothing, and the year 2000 began without problems.

Chapter Two
2000-2009

OVERVIEW

The first decade of the new millennium would be a period of growth for ARRT. New certification programs would be added in Sonography, Bone Densitometry, Vascular Sonography, and Breast Sonography. For the first time, ARRT would retire an examination, as Cardiovascular-Interventional Radiography was split into two new exams: Cardiac Interventional Radiography and Vascular Interventional Radiography. Those registrants holding the original certification could maintain it without having to earn one of the new certifications. ARRT would also credential a new type of practitioner, the Registered Radiologist Assistant (R.R.A.). The R.R.A. would be the first advanced-level practitioner certified by ARRT; because of that role, R.R.A.s would be required to obtain more CE credits than other technologists. The R.R.A. exam would also include a constructed response (essay) component in addition to the usual selected response (multiple choice) format used for all other disciplines. ARRT began to explore time-limited certification and would initially implement it for Bone Densitometry, but that requirement would be withdrawn until it could be applied to all other modalities. However, the R.R.A. certification was limited to 10 years from the start. Certification of other advanced practitioners would be considered, but none of the proposals would advance to a level that would warrant certification programs. CBT would be a big success, although a change in vendor would be needed. The staff would continue to expand, including the addition of several new leadership positions, and ARRT would become more active in government affairs. After years of discussion and negotiation, ARRT would purchase two lots behind the Northland Drive building and construct a large addition. Examination volume would reverse the declining trend seen in the late 1990s, and an increasing number of registrants would pursue additional certifications, mostly in what would become known as postprimary disciplines.

2000

CBT began for all ARRT certification programs, which allowed candidates to examine on any weekday at nearly 250 locations across the country rather than on only three days per year at about 125 locations. The only drawback for candidates was a $50 increase in the fees to support the increased costs of the new system. Our psychometrics department noted no effect on test scores when items were presented in a randomized vs. nonrandomized order. Candidate satisfaction with CBT was in the 90% range. Psychometrics also reported on computer adaptive sequential testing for informational purposes only.

The certifications previously known as “advanced-level” were increasingly referred to as “postprimary.”

ARRT continued to monitor and study the proposal for a baccalaureate degree for radiation therapists but did not believe that the information provided supported that degree as a certification requirement.

Initial plans for the Bone Densitometry credential indicated that it would be listed as a certificate of “added qualifications in bone densitometry” and limited to five years, with re-examination needed to maintain the qualification. Applicants must have and maintain registration in Radiography, Nuclear Medicine Technology, or Radiation Therapy to be eligible for certification and registration in Bone Densitometry and must meet clinical experience requirements.

The Board approved certification by the NMTCB as a qualification for the MRI examination. However, it clarified that only the MRI certificate would be registered with ARRT. The Board also approved splitting the Cardiovascular Interventional Technology examination into two exams, cardiac and noncardiac, to better reflect the practice patterns of technologists.

The Sonography certification was launched, and ARRT made plans to market the new certification and to promote its acceptance by outside entities. Initial exam volumes were very low.

ARRT recognized the accreditation mechanism of the Conjoint Secretariat of the Canadian Medical Association as acceptable for 2000-2004 and requested that JRCERT repeat its review of the Canadian system in five years. The time frame was later changed to Jan. 1, 1999. The recognition applied to Radiography and Radiation Therapy educational programs but not to Nuclear Medicine Technology educational programs.

The Board completed a long-range planning meeting with an external moderator in November 2000 and scheduled the next meeting for spring 2002.

The trend of decreasing exam volumes in the primary eligibility pathway disciplines continued, with an 11% decrease in Radiography, a 36% decrease in Nuclear Medicine, and a 6% decrease in Radiation Therapy compared to 1999.

2001

ARRT continued with its plans to split the Cardiovascular Interventional Technology examination into a Cardiac Interventional examination and a Vascular Interventional examination. Those who held the current certification would maintain the designation of CV, while those passing the new examinations would be designated as CI and VI. No new applications would be accepted for the CV exam after Dec. 31, 2002, but the exam would remain available for some time to accommodate repeat examinees. The new CI and VI exams would launch in January 2003.

The Board endorsed a new public relations campaign with multiple goals focused on its constituencies. The key message was “ARRT–ensuring quality patient care by certifying qualified radiologic technology professionals.” The organization also sought to correct inaccurate depictions of the radiologic sciences in advertisements, news articles, and other media outlets and to maximize its efforts by coordinating activities with other organizations.

The Bone Densitometry and Vascular Sonography certifications launched, and ARRT offered to administer its Bone Densitometry examination to state licensing candidates under contractual arrangement if the candidates could meet eligibility requirements "similar to those of ARRT." After meeting with ARRT and investigating the development of the Vascular Sonography examination, the Intersocietal Commission on the Accreditation of Vascular Laboratories (ICAVL) voted to recognize the ARRT Vascular Sonography credential as meeting its accreditation standards for technologists in vascular laboratories.

The Board continued to discuss the baccalaureate degree for radiation therapists. It also continued to explore options for internationally educated technologists, with a focus on those educated in the United Kingdom, South Africa, New Zealand, and Australia. The term "international" was deemed preferable to "foreign."

ARRT worked on converting all ARRT files to digitized versions. This would eliminate duplication of paper and electronic files for any that were received on paper and reduce the need for physical storage space. ARRT's computer services department continued to work on a disaster recovery plan and noted that copies of all computer files were already stored off-site.

ARRT decided to apply for accreditation of its Radiography, Nuclear Medicine Technology, and Radiation Therapy certification programs by the National Commission for Certifying Agencies (NCCA). It was noted that such accreditation could require the addition of a public member to the Board.

Examination volumes increased in all disciplines except Mammography. This was especially notable in Radiography with a 4% increase, Nuclear Medicine Technology with a 15% increase, and Radiation Therapy with a 45% increase compared to 2000. This was the first time since the mid-1990s that volumes in the primary disciplines increased.

2002

ARRT recognized the accreditation mechanism of the Australian Institute of Radiography (AIR) as acceptable for radiography and radiation therapy educational programs in Australia, with an effective date of Jan. 1, 2000. ARRT also extended recognition by the Conjoint Secretariat of the Canadian Medical Association to nuclear medicine technology programs effective Jan. 1, 1999.

Staff reported on the feasibility of ARRT owning CBT centers and recommended against that, but ARRT decided to request proposals from other computer-based testing vendors. Only two vendors had the ability to meet ARRT's needs.

ARRT began to develop a certification in Breast Sonography and set eligibility requirements for ARRT certification in Mammography or Sonography. The Board also approved funds to develop a Bone Density Equipment Operators examination for use by licensing states beginning in 2003. By the end of the year, seven states were under contract.

In light of ongoing negotiations between ACR and ASRT regarding the development of a new practitioner, the radiologist assistant (RA), ARRT approved development of a certification program and explored how to handle radiographers certified as radiology practitioner assistants (RPA) by the Certification Board for Radiology Practitioner Assistants (CBRPA). ARRT accepted an invitation to participate in an ASRT task force to develop the role of the RA. As part of its development efforts, ARRT assembled information on the RPA educational program at Weber State University.

After several years of discussion, ARRT disbanded the ad hoc committee on the baccalaureate degree for radiation therapists and considered the issue closed without adopting that degree as a requirement for examination.

After several years of monitoring efforts to establish national technologist licensure through a federal effort known as the Consumer Assurance of Radiological Excellence (CARE) bill, ARRT decided to participate as a member of the Alliance for Quality Medical Imaging (AQMIRT). ARRT explored fusion imaging, particularly related to positron emission tomography (PET) and CT. A consensus conference organized by ASRT and SNMTS stated, "Any registered radiographer with the credential R.T.(R), registered radiation therapist with the credential R.T.(T) or CNMT may operate PET-CT equipment after obtaining appropriate additional education or training and demonstrating competency."

ARRT developed a new marketing message: "Ethics + Education + Examination = The ARRT Equation for Excellence." It also adopted a vision statement: "ARRT strives to be the premier organization for credentialing health care technology professionals in all aspects of diagnostic medical imaging, interventional procedures, and radiation therapy." And it adopted a values statement: "ARRT is a principled and mission-driven organization that values and demonstrates quality, integrity, and objectivity."

First-time examinees in the primary categories increased compared to 2001 by 9% in Radiography and 6% in Radiation Therapy, although Nuclear Medicine saw an 8% decrease. About 20% of all exams were in the postprimary disciplines.

2003

As part of the ongoing discussion about PET/CT imaging, Nuclear Medicine was added as a supporting category for ARRT's CT certification. This required some modifications to the CT exam to include material previously assumed to be assessed by the Radiography and Radiation Therapy supporting categories. PET would be added to the Nuclear Medicine examination if supported by practice analysis data. ARRT recognized NMTCB certification in nuclear medicine technology as a supporting category for ARRT's MRI and Quality Management certification programs.

The new certifications in Cardiac Interventional Radiography and Vascular Interventional Radiography were launched as planned.

ARRT was concerned with the performance of Prometric as the CBT firm, but it initially sought to extend the contract with Prometric through the end of 2004. Later in the year, however, ARRT entered negotiations with Pearson VUE and chose it as the new vendor, effective Jan. 1, 2004.

The Board began initial discussions on the topic of recertification for all modalities. ASRT was noted to be in favor of the concept. Since continuing qualifications were being considered for all disciplines, the Board suspended the requirement for recertification in Bone Densitometry.

The Board added a primary pathway for Sonography certification for graduates of an accredited sonography program with the goal of transitioning to that pathway for all candidates, but it maintained the postprimary pathway for an indefinite period. It also voted to develop a business plan to convert the MRI program to a primary pathway.

With ACR and ASRT adopting a joint position statement on the RA, ARRT moved forward with plans for a certification program and appointed an RA advisory committee.

ARRT launched an online renewal option, with about 10% of technologists initially electing that method. The online method took about six minutes, compared to 19 minutes for the paper-based process.

Examination volumes continued to rebound. Nine-month figures showed an increase of 16% in Radiography, 48% in Nuclear Medicine Technology, and 42% in Radiation Therapy compared to 2002. About 23% of all exams were postprimary.

2004

The Breast Sonography certification launched at the start of the year, and a standard-setting process determined the exam's passing score. In 2004 registration in Mammography was required as an eligibility requirement, but a pathway for Sonographers was planned for 2005.

Progress continued toward developing RA certification. The Board decided that certification and registration in Radiography would be a prerequisite for RA certification and that there would not be a physician assistant or nurse practitioner eligibility route. The RA advisory committee drafted a role delineation document. After initially declining to require RAs to work only under the supervision of a radiologist, ARRT issued a position statement saying, "It is in the best interests of providing high-quality patient care for radiologist assistants to work only under the supervision of such physicians." This statement was in line with the statement of ACR and ASRT.

After many years of long-range planning meetings resulting in smaller changes to the ARRT strategic plan, the Board held a "blue sky" meeting in October to look further into the future, asking what a technologist would look like in 2010 and 2015 and what the R.T. designation should mean at that time.

The change to Pearson VUE as the CBT vendor was successful. Candidate satisfaction rose from 93% to 96%, and several operational issues were resolved.

By the end of 2004, the total number of registrants was about 246,000, and they held more than 350,000 certificates. Radiography represented 66% of the certificates, followed by Mammography at 13%, CT at 7%, MRI and Radiation Therapy at 4%, and Nuclear Medicine at 3%. About 40% of R.T.s held two or more certificates.

2005

Preparations to administer the first RA examination dominated the year. ARRT decided to require at least one year of full-time clinical experience after Radiography certification to be eligible for RA certification. However, that year could be concurrent with the RA educational program. Candidates would need to possess a minimum of a baccalaureate degree awarded by an accredited institution. ARRT expressed its commitment to creating an eligibility pathway for RPAs to become RAs. It made graduates of an RPA educational program that is based in an institution accredited by a mechanism acceptable to ARRT, and/or individuals certified by CBRPA, eligible to sit for the RA exam through the end of 2007. The advisory committee judged that the education and ethics requirements of the CBRPA were substantially equivalent to ARRT's requirements, but there was insufficient information to determine if its examination was equivalent. Although all other ARRT exams were available on a continual basis, the RA exam would return to the "event schedule" format because it would consist of selected response (multiple choice) and constructed response (essay) components. The essay component would require scoring by a panel of experts. Because the term "RA" was in general use for multiple purposes, ARRT chose the designation of Registered Radiologist Assistant (R.R.A.) for those who achieved ARRT certification. The R.R.A. certification would be time-limited to 10 years, with the mechanism for recertification to be determined. CE requirements were set at a minimum of 25 credits per year, with at least 70% related to the RA's area of practice and 50% intended for a physician or physician extender. The first exam was held on Oct. 28, 2005. Four of eight candidates passed the exam and earned the R.R.A. designation.

The Board adopted a statement of purpose for clinical competency requirements that read:

> *The purpose of clinical competency requirements is to verify that individuals certified by ARRT have demonstrated competence performing the clinical activities fundamental to a particular discipline. Competent performance of these fundamental activities, in conjunction with mastery of the cognitive knowledge and skills covered by the certification examination, provides the basis for the acquisition of the full range of procedures typically required in a variety of settings. Demonstration of clinical competence means that the candidate has performed the procedure independently, consistently, and effectively during the course of his or her formal education.*

ARRT recognized ARDMS certification in any category as a supporting category for ARRT's Sonography, Vascular Sonography and Breast Sonography certifications. ARRT launched a pilot study for transitioning Sonography to a primary program and delayed implementation until 2006. NMTCB certification in nuclear medicine technology was accepted as satisfying the same supporting category requirements as ARRT's Nuclear Medicine Technology certification. Sonography certification and registration was recognized as a supporting category for the postprimary eligibility pathway of the MRI certification program.

ARRT received NCCA accreditation for our primary programs of Radiography, Nuclear Medicine, Radiation Therapy, and Sonography. Although we would submit postprimary programs for consideration only if a specific reason was identified, we made plans to submit the MRI and RA programs when appropriate.

Seven important trends to monitor were identified from the blue sky meeting:

1) Demographics of R.T.s
2) Coincidence of education and certification with clinical practice
3) CARE and RadCARE bills
4) State licensing trends
5) Changing patterns of reimbursement and the impact on new professions
6) Acceptance of RAs
7) R.T.s who don't work for radiologists

The Board held an ethics retreat to review the philosophical foundations of ARRT's ethics standards.

2006

ARRT compared the R.R.A. and the RPA and noted some conceptual differences, particularly related to the manner in which responsibilities were defined and the appropriate supervision levels. ARRT turned more of its attention to lobbying federal and state agencies for recognition of the R.R.A. credential and appropriate reimbursement for RA work. The recertification process continued to develop, with plans for an assessment of key information every 10 years and remedial CE courses to address areas of deficiency.

With the R.R.A. concept approved and operationalized, discussions were held with appropriate organizations regarding possible advanced practice technologists in Nuclear Medicine and Sonography.

Four new major staff positions were added: Director of Education, Director of Governmental and Regulatory Agency Relations, Communications Specialist, and Senior Psychometrician. A Chief Financial Officer was hired.

ARRT began to consider requiring a minimum of an associate degree for certification and planned to explore the implications and possible implementation in conjunction with ASRT. Discussions also continued related to a bachelor's degree requirement in some modalities, such as Nuclear Medicine.

The Canadian Medical Association Conjoint Accreditation Services was recognized as an accreditation mechanism acceptable for MRI educational programs.

The Board asked to develop a proposal for assessing and acknowledging qualifications in disci-

plines that are less extensive than ARRT's traditional certification categories. It also reviewed progress on integrating digital imaging into certification programs and acknowledged the need to address roadblocks to more substantive coverage of digital imaging.

ARRT met with the Society of Imaging Informatics in Medicine (SIIM) to discuss ARRT's possible role in a certification program for picture archiving and communication system (PACS) administrators. The organizations decided to proceed as partners in developing an imaging informatics professional certification program.

The Board approved new examination item formats, including hot spots, sorted lists, and selected multiples to be introduced in some exams in 2007.

2007

R.R.A. examination volume increased substantially from 16 in 2006 to 42 in 2007 as program graduates increased and more RPAs took advantage of the opportunity to test. The first-time pass rate increased to 85.7%. CE requirements for the R.R.A. were adjusted to allow more flexibility due to limited offerings, but 50 credits every two years were still required. RPA eligibility was extended to 2010, but RPAs were required to meet the bachelor's degree requirement. ARRT decided to apply for NCCA accreditation of the R.R.A. certification program. ARRT also requested that ASRT select an R.R.A. as its next Board appointee. The Board expressed its concern about the lack of progress toward securing reimbursement for R.R.A.-performed procedures.

Topics for a blue sky meeting in October included increasing use of CT in place of radiography; automation of imaging equipment; increased use of imaging by radiation therapists; fusion imaging; molecular imaging; interventional oncology; interdependence of organizations; and pay-for-performance initiatives by payers. There was a desire to include presentations from futurists at strategic planning meetings and some Board meetings.

With CBT well-established, ARRT would begin to provide a preliminary score report to candidates via the computer screen, with new forms launched in January 2008. There would be no paper copy.

The Board approved time-limited certification for all new certifications awarded on or after Jan. 1, 2011. Requirements to assure continued qualifications must be documented before the end of the 10-year period to continue certification for another 10 years.

ARRT and SIIM formed a new organization, the American Board of Imaging Informatics (ABII), to certify imaging informatics professionals. Each organization would appoint half of the board of ABII.

After years of discussion and negotiation, the Board authorized funds to purchase the two lots adjacent to the current building for expansion and additional money to maintain and repair the current building.

2008

The Board approved a broad outline of Continuing Qualifications Requirements (CQR), establishing the final three years of the 10-year period as the time when technologists would participate in an ARRT-administered assessment to determine areas of needed professional development; document completion of activities to address the identified areas of need; and complete a reassessment demonstrating successful remediation. The nature of the assessment was left broad for future refinement. Later in the year, the three-year period was increased to five years.

ARRT continued to monitor advanced practice initiatives in radiation therapy, nuclear medicine, and sonography, but there were no immediate plans for new certification mechanisms. ARRT endorsed the title of nuclear medicine advanced associate and reopened discussions with the NMTCB to determine if the organizations might collaborate on a certification program.

Specific plans were approved and funds allocated for constructing a 30,000-square-foot addition to the headquarters building, with half to be furnished and half to be unfurnished for future expansion.

Preliminary score reports were provided in the primary disciplines as planned, with no discrepancies noted with the final scores. Satisfaction with Pearson VUE remained high.

ARRT joined a new group to promote reimbursement of R.R.A.-performed procedures: the Coalition on Radiologist Assistants (CORA). With no significant progress on the CARE bill, ARRT began to consider hiring its own lobbying firm.

2009

The Board adopted a definition of unauthorized disclosure of exam information and proposed related revisions to the *ARRT Standards of Ethics*. These actions clarified that examinees may not transmit or receive information "using language that is substantially similar to that used in questions and/or answers on ARRT examinations." They also noted that "copying answers on a directed reading's post-test from another individual is a violation of the *ARRT Rules of Ethics*."

ARRT decided to assume a leadership role in advocating efforts to secure reimbursement for R.R.A.-performed procedures.

The building expansion project was completed. Two departments moved in before April. Formal dedication occurred on Aug. 7.

ARRT increased its efforts in state licensing and developed multiple position statements to support appropriate regulation of medical imaging, interventional procedures, and radiation therapy. ARRT also stated that other nonphysician health care providers, including nurse practitioners and physician assistants, must receive appropriate education, training, and competence

assessments if they are to perform medical imaging, interventional procedures, and radiation therapy, and that such practitioners should be appropriately certified and licensed.

The Board affirmed support for the link between the associate degree as a certification requirement and the ARRT mission. Candidates for certification graduating on or after Jan. 1, 2015, would be required to earn an associate degree, baccalaureate degree, or graduate degree from an institution accredited by a mechanism acceptable to ARRT. The degree need not be in the radiologic sciences and could be earned before or after the professional education program.

After several years of discussion, the Board discontinued consideration of the development of an advanced-practice certification program in Nuclear Medicine Technology.

As the decade closed, first-time examinee volume in the primary disciplines decreased from 2008, but postprimary examination numbers were increasing—perhaps at least in part as technologists looked to avoid the time-limited certification that would begin in 2011.

Chapter Three
2010-2019

OVERVIEW

Development and refinement of CQR would be a big topic for much of the decade. Although a few R.R.A.s would enter their three-year compliance windows early in the decade, other technologists would not begin compliance until 2018. Sixteen hours of structured education based on the content specifications would become required for postprimary pathways as of 2016. Issues related to the R.R.A. would also continue as ARRT had the lead role in attempting to achieve reimbursement through either the Centers for Medicare and Medicaid Services (CMS) or Congress. Despite extensive efforts, there would be limited success with CMS and no success in passing the Medicare Access to Radiology Care Act (MARCA) bill. Toward the end of the decade, opposition from some factions of the ACR would complicate matters. The certification examination in Quality Management would end in July 2018, but existing certificates would remain valid. Sonography certification would move to a primary eligibility pathway only at the end of the decade. ARRT would develop plans for discipline-specific CE, but begin to have second thoughts and delay implementation into the next decade.

Selection of Board members would move from direct appointment by ASRT and ACR to a nomination process of at least two candidates and election by the ARRT Board. The Board would also expand to 10 members, including a new technologist position that could come from an organization other than ASRT. A nuclear medicine technologist would be chosen from nominations by the Society of Nuclear Medicine and Molecular Imaging (SNMMI).

2010

The Board continued to refine CQR. It noted that the primary goal of recertification is "to reflect competency, which has many components." The content specifications for examinations define the body of knowledge that must be mastered and maintained to meet ARRT's definition of "qualified." Therefore, CQR will be based on demonstrating—through assessment activities and prescribed educational activities linked to areas of need—maintained mastery of the body of knowledge identified in the content specifications.

The Board endorsed requiring documentation of structured education for all postprimary certification modalities, beginning in 2016. Applicants would be required to document completion of 16 hours of structured education that both reflects the content specifications of the modality and is earned within the 24-month period immediately preceding submission of an application for certification.

Congress passed the Medicare Improvements for Patients and Providers Act (MIPPA), which required practice accreditation for CT, MRI, and NMT/PET. This complicated efforts on the CARE Act, and there was controversy among imaging organizations as to whether those modalities should be removed from CARE. The differences between practice accreditation and personnel requirements were a point of contention.

The Board reaffirmed the "limited in breadth, not in depth" philosophy for the Limited Scope of Practice in Radiography examination. That means if the same task is performed by a radiographer and a limited scope radiographer, the underlying content and level of understanding assessed should be the same.

Slow migration from conventional units of radiation to the international system of units (SI units) continued. Either could be used depending on the situation, but both units would not be used in the same item on ARRT exams.

A business plan to develop a Fluoroscopy examination program for use by licensing states was accepted.

ARRT entered the growing world of social media with the launch of a Facebook site on Jan. 4.

MRI certification earned through the primary eligibility pathway was recognized as a supporting category for postprimary Sonography.

After many years of discussion regarding the retired status registration category, the Board passed an interim rule to discontinue the category effective Aug. 1, 2010. A final decision, scheduled for July 2011, would determine whether the rule would become permanent.

Efforts to achieve R.R.A. reimbursement shifted from a CMS-focused approach to a Congressional-focused approach. Sixty first-time examinees sat for the R.R.A. examination.

Postprimary exam volumes reached record levels as technologists sought certification prior to the onset of CQR requirements.

2011

The Board reviewed the practice analysis methodology and suggested that practice analysis data could be supplemented with additional data, such as that from CMS and sentinel sites. It adopted decision guidelines that would include tasks with responsibility from more than 40% of respondents and with 20% or more reporting daily or weekly frequency of performance. It would exclude tasks falling below those thresholds. Tasks meeting only one threshold would be "on watch," with those exceeding 40% responsibility likely included and under 40% responsibility likely excluded. Committees could also consider whether a task was trending up or down.

The Board adopted contract provisions for agreements with states to use the new Fluoroscopy examination. Key provisions included that candidates have relevant foundational qualifications,

including at least 40 hours of structured didactic educational activities and at least 40 hours of supervised clinical experience.

The RPA eligibility pathway for the R.R.A. certification continued until the end of 2011. First-time R.R.A. examinees reached an all-time high of 79, but that number was inflated by moving the January 2012 administration to December 2011 to accommodate the closing window for RPA candidates. With the first certified R.R.A.s approaching the end of their 10-year certification window, their CQR requirements were clarified to include a clinical profile that identifies their area of practice, professional growth and development, and accomplishments; a self-assessment based on the current content specifications of the R.R.A. certification examination; and CE activities to address areas of weakness. Any required CE activities would also count toward their biennial requirements. They could complete the CQR requirements within the last three years of the 10-year cycle.

The Board reduced the timeframe for eligibility to participate in a primary category certification examination from five years to three years effective Jan. 1, 2013. It eliminated the fourth examination attempt for primary and R.R.A. categories effective Jan. 1, 2015.

"Retired status" was defined as a voluntary, permanent status for technologists no longer active in the profession in any capacity, with the note that such individuals cannot use the R.T. designation. If they wished to regain credentials, they would need to apply, pay for, and pass any applicable examinations. Although initial proposals called for an age-based qualification, the final rules required: age of at least 55 years, certification for at least 20 years, or combined age plus years certified of at least 70. The Board also defined a disabled status.

The Board voted to add a sixth technologist with an implementation date of Aug. 1, 2014. It considered the possibility of adding a public member but chose not to do so. It also changed the long-standing process of direct appointment of Trustees by ASRT and ACR to a process of nominating candidates with appointment by the Board, effective Aug. 1, 2013. It also explored alternative governance models and chose to consider ways to raise the profile of committees and opportunities for committees to have input into Board deliberations on modality-specific policy decisions. The offices of Secretary and Treasurer were combined into a single position.

Discussion continued about nuclear medicine technologists performing diagnostic CTs. ARRT's position was that such technologists should have specific education and experience in CT and ideally have CT certification.

2012

The Board adopted changes to its Bylaws related to the Board structure and indicated that the sixth technologist could be nominated by organizations other than ASRT. The final directly appointed Trustees would have begun their terms Aug. 1, 2012, but there were no expiring terms.

The Board approved a change to Sonography examination scoring effective Jan. 1, 2013. Instead of a single cut score for the entire examination, there would be "noncompensatory scoring," with separate cut scores for the abdominal and OB/GYN sections in addition to the overall cut score. Additionally, ARRT would rescore examinations from 2011 and 2012 using the noncompensatory method. Those holding an ARRT Sonography credential would also have sonography-specific CE requirements starting with 2013 biennia. As a result of these modifications, the American Institute of Ultrasound in Medicine (AIUM) would recognize ARRT credentials in its accreditation standards.

CQR requirements that had been developed for the R.R.A. were defined for all other certifications awarded on or after Jan. 1, 2011. During the final three years of the 10-year period, the technologist must complete a professional profile on ARRT-specified forms; participate in an ARRT-administered assessment to determine areas needing professional development; and document completion of CE activities to address identified areas of need. The purpose of the professional profile was defined as to assist Registered Technologists in documenting their qualifications and accomplishments in the categories of certification held. It was noted that "this documentation indirectly addresses the psychomotor domain of ARRT's competence model."

ARRT adopted a position statement that said, in part, "ARRT supports the creation of a national database of disciplinary actions related to the competence or professional conduct of radiologic technologists as issued by state and/or federal regulatory bodies, employers, or professional certification agencies." It noted that many issues would need to be addressed for this to occur.

2013

The Board clarified structured education requirements for postprimary certification eligibility. It stated that the 16 hours must be distributed among the major content categories of the relevant content specifications document, with at least one hour from each major category.

The Board approved the segmentation of the 24 biennial CE credits into at least 16 discipline-specific credits and at most eight self-selected CE credits related to health care.

The first two Trustees elected by the Board from nominations by ASRT attended the July meeting and officially joined the Board on Aug. 1. The Board requested two nominees from SNMMI for the new technologist trustee position, with the request that they be certified and registered in Nuclear Medicine Technology by ARRT.

The Board adopted a new statement of purpose for the Professional Profile component of CQR. It said the Professional Profile helps "the R.T. to gain an awareness of the clinical expectations for newly certified professionals in a given discipline and provides opportunities to learn more about those clinical procedures not in the individual's current practice." The performance standard for the Structured Self-Assessment (SSA) component of CQR was set at 70% or more items correct for each section. Technologists who do not complete CQR at the end of their 10-year period will not be certified and registered; they may reinstate within one year, however, by completing any remaining CQR components within that time.

As part of ARRT efforts to convert to online processes from paper-based processes, certification

handbooks were moved online, and plans were made to convert the application for certification and registration under the primary eligibility pathway to an online format. The purpose of the hard copy (printed) certificate of registration was clarified to indicate only that initial certification requirements were met. ARRT would discontinue sending an annual seal. The ARRT website would be the primary source of verification of certification and registration status.

Examination volumes generally increased in 2013 versus 2012 except for Radiography, which was down 5.3%. Nuclear Medicine was up 11.3%, Radiation Therapy was up 3.6%, and postprimaries were up 14.4%, led by CT (up 17.0%) and MRI (up 14.4%).

2014

The Board expanded for the first time since 1993 with the addition of a 10th technologist, who was nominated by SNMMI.

Legislative efforts continued on the CARE bill and on reimbursement for R.R.A. work through a bill known as the Medicare Access to Radiology Care Act (MARCA). As in prior years, no bills were passed.

Work continued on CQR implementation. Business development and marketing efforts continued in an attempt to increase ARRT's market share in Nuclear Medicine Technology and Sonography certification.

2015

The Board reinstituted discussion of alternative models for recognizing individuals in areas that would not qualify for a full credentialing program. The annual renewal form was suggested as a way to gauge interest in potential areas.

Content categories in the content outlines were standardized across all disciplines to consist of Patient Care, Safety, Image Production, and Procedures. Some disciplines would not use all four categories.

Efforts to pass the CARE bill ended, and ARRT focused efforts on state licensure and MARCA.

Biennial CE requirements were further modified to "24 CE credits every two years, with 16 of the 24 CE credits linked to the content outline for the discipline of certification and registration, with at least one CE credit from each major category of the content outline for that discipline and at least one CE credit from ethics." Plans were also announced to eliminate the policy that earning an additional certification met the biennial CE requirement.

A cohesively themed marketing plan for 2015-2017 was launched with the key message: I Am the Gold Standard.

The Board placed a high priority on cybersecurity protection and authorized resources as needed to protect sensitive information.

Exam volumes were generally slightly decreased in the primary eligibility pathways but substantially increased in the postprimary eligibility pathways.

2016

Criteria for inclusion of procedures on the task inventory changed with modification of the "responsibility and frequency" scale to a "frequency only" scale. The 40% threshold remained as a basic parameter for frequency, but committees were charged to also incorporate criticality in determining whether to include a task with frequency of less than 40%.

Accrediting agency recognition criteria were simplified to require recognition by either Council for Higher Education Accreditation (CHEA) or U.S. Department of Education (USDE) and eliminate the need to assess them against separate ARRT criteria.

Modifications were proposed to the Sonography certification program. A three-year transition was planned to convert to a primary eligibility pathway only (graduation required from an accredited sonography education program). Current registration with ARDMS was deleted as an option for meeting the professional education requirement in Sonography.

Operational details of the CQR process continued to be developed. Pilot testing was performed for remote proctored internet delivery (RPID) of the SSA. Initial plans were for RPID only, but the Board recognized that some technologists might prefer or need to use traditional test centers. Maximum CE prescriptions were established, with 36 hours for Radiography set as a baseline against which other disciplines would be determined. Because technologists could take the SSA early in year eight of their 10-year cycle, even a maximum prescription would not necessarily increase the required amount of CE over those three years compared to usual biennial requirements. The Board also ruled that the 10-year CQR periods would be permanently fixed, even if a credential is discontinued and later reinstated. ARRT contracted with ASRT to produce up to 313 clinical refreshers for the Radiography CQR program and worked on contracts with SNMMI and SDMS for refreshers in Nuclear Medicine and Sonography, respectively. The refreshers would be optional learning tools available during the CQR process, but participants would not earn CE for completing the refreshers.

The RPA eligibility pathway for the R.R.A. examination was reopened through the end of 2020. ARRT waived the usual timeframe for examination relative to the time of program completion. All other requirements, including the baccalaureate degree, remained in place.

Proton beam radiation therapy was identified as a candidate for an alternative model of recognition.

ARRT decided to accept only credit and debit cards for payment of fees effective Jan. 1, 2017.

2017

ARRT decided to discontinue issuing new Quality Management credentials as of July 1, 2018, because of decreasing exam volume and a decreased knowledge base caused by the transition from analog to digital imaging. Those holding the credential could maintain it, but CQR would not be required or available. Work was underway to create a primary eligibility pathway for Vascular Sonography certification.

Pearson VUE was selected to administer the SSA component of CQR via both RPID and traditional test centers. Technologists could choose either method. R.T.s with older credentials could opt in to complete CQR at a future time to be determined, but once in could not opt out.

2018

ARRT continued to lead the way in seeking reimbursement for R.R.A.-performed procedures, and ACR announced that MARCA support would be one of the topics for its Capitol Hill Day in May. Although this seemed like good news, it stirred up opposition to MARCA and the RA concept among part of the ACR membership. Although legislative success remained elusive, CMS did approve some changes in reimbursement for diagnostic procedures, effective at the start of 2019.

The number of first-time R.R.A. examinees fell to 15, the lowest yearly number except for 2005, when the program had just begun.

ARRT noted that a few candidates were completing clinical experience requirements for postprimary pathway examinations in as little as one to two weeks. This raised doubts that they were completing all criteria required and truly learning enough about the modality. The Board worked to develop daily maximum numbers of procedures that could satisfy the requirements.

Progress continued on recognition for proton beam radiation therapy with development of the *Body of Knowledge Standard and Requirements for Proton Beam Radiation Therapy* document. The Board authorized development of a formal application and documentation submission process and set the duration of recognition at seven years.

The Canadian accreditation mechanism for educational programs changed from the Conjoint Accreditation Services of the Canadian Medical Association to a new entity, Accreditation Canada. ARRT recognized Accreditation Canada on an interim basis and planned to review new standards when they would be available in 2019 to make a final decision on continued recognition.

The Board delayed the implementation of discipline-specific CE until 2022 to allow more study. Questions were raised as to the rationale for 16 discipline-specific credits and how this requirement would apply to technologists with multiple certifications.

2019

The Board approved maximum numbers of procedures that could be reported daily to satisfy clinical experience requirements for the postprimary eligibility pathways. It also requested improvements in the process for verifying that the procedures had been completed as intended.

The Board approved policies and procedures for simulation of clinical competency procedures. Simulations must be on a live person and must meet the same criteria as competencies performed on a patient. Simulations were capped at 20% of the total number of mandatory and elective competencies for the modality.

ARRT discontinued paper credentials cards. The ARRT website and phone system would be the only mechanisms to verify if an individual is certified and registered.

Selected ARRT staff and Board members attended a meeting on the Future Role of the Radiographer. Ultimately, the report provided little guidance due to a diversity of attendees' opinions. ARRT planned to organize similar meetings related to other disciplines.

Attempts to pass the MARCA bill continued to be unsuccessful, and opposition within segments of ACR grew. In particular, ACR raised concerns about the *Entry Level Clinical Activities* document and some procedures that R.R.A.s might perform. First-time R.R.A. examinees fell again to 13. The postprimary eligibility pathway in Sonography closed at the end of the year.

Chapter Four
2020-2022

OVERVIEW

A decade that seemed normal as it began would soon be disrupted by a novel coronavirus infection that came to be known as COVID-19 and resulted in a pandemic. Like every other organization, ARRT would quickly modify its processes and convert much of its work and meetings to virtual formats. Fortunately, those efforts would be successful, and some of the new ways would become permanent. ARRT would make temporary modifications to its policies and procedures to help students and R.T.s whose lives, education, and work were disrupted.

The initial cohorts of technologists with credentials subject to CQR would complete their compliance periods beginning in 2021. After initial concerns that large numbers of R.T.s would not comply, at least 88% would complete the process on time. Some of the remainder would use the Year 11 option to reinstate their certification and registration. Modifications to CQR prescriptions would decrease the number of CE hours prescribed for many R.T.s.

ARRT would change the R.R.A. examination by replacing the constructed response component with a case study component using selected response, thus allowing computer scoring. ARRT would continue to explore alternative forms of recognition—a project now known as Area of Concentration (AOC) Recognition—and make progress toward computer adaptive testing.

After 31 years as Executive Director and CEO, Jerry Reid, Ph.D., would retire at the end of 2022. After a year-long nationwide search, Liana Watson, DM, R.T.(R)(M)(S)(BS)(ARRT), RDMS, RVT, FASRT, PMP, CAE, was chosen as his successor. ARRT would celebrate its centennial in November 2022 and look forward to a second century of success.

2020

The year began normally with a Board meeting in January, but reports began to emerge about a novel coronavirus infection. First found in China, by February the virus spread into some areas of the U.S. By mid-March, the World Health Organization declared COVID-19 a global pandemic. That led to a nationwide shutdown of many businesses and other activities, as local and national governments restricted gatherings of more than a few people. Initially it was hoped that the situation would resolve in a few weeks to months, but as the year progressed, it became clear that the pandemic would last much longer and changes to operations would be needed. ARRT quickly shifted to remote work from home for its employees. Spring committee meetings were cancelled. When the COVID-19 situation didn't resolve, virtual meetings were arranged for fall. ARRT's Information Technology department ensured the security of confidential materials. Board

meetings were also virtual, and the usual July meeting was split into two parts, with the second half in September.

In January, the projected compliance rate for people whose 10-year CQR windows would end in 2021 was only 50%. ARRT made additional efforts to reach out to those technologists, and the subsequent pandemic created additional challenges. Data also showed that about 15% of credentials were not maintained long enough to enter the compliance period. Review of historical data showed that this was not a new trend.

Plans were underway to replace the constructed response part of the R.R.A. exam with a case study component, effective in 2023, that could be scored by computer. Initial pilot items were approved for trial in 2021. The Board also approved a minimum master's degree requirement for new R.R.A.s, effective in 2024. The master's degree requirement was later moved up to 2023. R.R.A. exam volume rebounded slightly, with 23 first-time examinees. ACR replaced its joint statement with ASRT about the R.R.A. with a new one, which didn't include ASRT involvement. ACR passed other resolutions related to nonphysician radiology providers, some of which ARRT didn't view favorably.

The COVID-19 pandemic severely disrupted technologist educational programs and the working environment of many R.T.s. Although some classes could be held virtually, students were initially excluded from clinical sites in almost all locations. ARRT granted time extensions for students and studied modifications to simulations and other requirements. Registered Technologists also received time extensions for maintaining their credentials.

In recognition of declining return rates of practice analysis surveys over three decades, the Board approved a sentinel site program pilot initiative. However, the ongoing pandemic prevented the program from launching.

The Board continued discussing alternative forms of recognition and renamed the process AOC Recognition. The Board adopted 13 criteria to determine if a certification program should be created or ended and if an AOC would be appropriate.

The Board changed Jerry Reid's title from Executive Director to Chief Executive Officer (CEO), reflecting the increasing size and complexity of the organization and common usage by similar organizations. Reid notified the Board of his intention to retire at the end of 2022, and the Board began to consider succession planning.

Not surprisingly, examination volumes decreased in 2020, presumably largely due to the pandemic. First-time primary eligibility pathway candidates decreased by 11%—and postprimary pathway candidates by 18%—compared to 2019.

2021

The pandemic continued to disrupt operations throughout 2021, with some easing later in the year as vaccines became widely available. The winter Board meeting was held virtually in two

parts, but a live meeting was possible in July. Staff continued to work primarily off-site, although some limited return to the office was possible. ARRT recognized that some of the changes to off-site work could be permanent and beneficial to operations. Pandemic-related extensions related to certification and registration were scheduled to conclude no later than the end of the year.

A significant modification was made to the assignment of CE based on the SSA component of CQR. Previously, the maximal amount of CE was assigned for each section of the SSA in which the R.T. didn't meet the standard. Going forward, the CE prescription would be proportional to the R.T.'s score. Those closer to meeting the standard would receive a smaller prescription than those with lower scores. This change was applied retroactively to those who had completed the SSA but not their prescription. As a thank-you and gesture of recognition, the Board also waived 2022 renewal fees for all technologists who completed the SSA portion of CQR before 2021.

CQR compliance was noted to be improving, and ARRT realized that some technologists weren't reporting their compliance until close to their deadline, even if they'd completed CE prescriptions earlier. By the end of the year, 91% of credential holders with a compliance deadline in 2021 completed the SSA, and 97% of those people completed their CE prescriptions. Thus, 88% completed the entire CQR process. Preliminary data in 2022 showed that a substantial number of the remaining 12% were using the 11th-year option to complete CQR and reinstate their credential.

Substantial changes to the not-yet-implemented discipline-specific CE requirements were made, and the implementation date was pushed back to at least 2026. The discipline-specific requirement would be one CE credit from each major category of the content outline for the discipline. The ethics requirement was removed.

Plans to pilot computerized adaptive testing for the Mammography examination in 2023 were approved, but later delayed until at least 2025 to allow for expansion of the item bank. Based on the success of the Mammography experience, ARRT would determine whether to expand computerized adaptive testing to other modalities.

2022

The COVID-19 pandemic continued, as virus variants caused infections even among vaccinated people. Fortunately, most cases were mild, and death rates declined. ARRT, like other organizations, continued to adapt to a "new normal," including hybrid work patterns that combined in-office and at-home work. ARRT committees remained virtual for the time being. ARRT held in-person Board meetings, and larger meetings such as ACR and ASRT returned to live events but were a source of some infections. The types of modifications granted to students and R.T.s over the past two years were no longer needed.

R.R.A. reimbursement remained elusive, with declining Congressional co-sponsorship for MARCA. In April, ACR adopted an official position of neutrality on MARCA. ARRT continued to explore all avenues, including again reaching out to CMS and working on state initiatives. ARRT finalized plans to replace the constructed response part of the R.R.A. exam with case studies in 2023.

Other state advocacy efforts increasingly focused on attempted scope expansions by nurse practitioners and physician assistants, who changed their name to physician associates. In this area ARRT had many allies, including ASRT and ACR. ARRT also continued to seek technologist-licensure laws where they did not exist and, as needed, to defend existing ones.

ARRT continued to assess future roles and in February held a meeting on the Future Role of the Radiation Therapist using a scenario-planning format. As with the previous Future Role of the Radiographer meeting, there was a lack of actionable items. Thus, ARRT canceled plans for similar meetings focused on other modalities.

Data from the second cohort of technologists completing their CQR compliance period was similar to that of the first cohort. At least 50% of those in the first cohort who did not complete CQR by the end of Year 10 reinstated in Year 11 by completing the process.

ARRT celebrated the centennial of granting its first certificate in November. A special logo was created to recognize the event. The celebration weekend also included recognition of Jerry Reid as he prepared to retire. Liana Watson, DM, R.T.(R)(M)(S)(BS)(ARRT), RDMS, RVT, FASRT, PMP, CAE, succeeded Reid in January 2023.

Ensuring Gold Standard
Patient Care Since 1922

In November 2022, ARRT held an open house celebrating our centennial anniversary. We welcomed present and past Board members and staff to our headquarters in St. Paul.

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Trustee	Elizabeth (Liz) Hackett, B.B.A., R.T.(N)(CT)(ARRT), PET, FSNMMI-TS, Orlando, Florida
2015-16	
President	Gary S. Gustafson, M.D., Troy, Michigan
Vice President	Steven M. Herrmann, MSA, R.T.(R)(M)(ARRT), CRA, FASRT, New York, New York
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Trustee	Jeffrey L. Crowley, R.R.A., R.T.(R)(VI)(ARRT), Tupelo, Mississippi
Trustee	Lisa Bartenhagen, M.S., R.T.(R)(T)(ARRT), Omaha, Nebraska
Trustee	Ann Obergfell, J.D., R.T.(R)(ARRT), Fort Wayne, Indiana
Trustee	Barbara J. Smith, M.S., R.T.(R)(QM)(ARRT), FASRT, FAEIRS, Portland, Oregon
Trustee	Deborah J. Rubens, M.D., Rochester, New York
Trustee	Paul A. Larson, M.D., FACR, Oshkosh, Wisconsin
Trustee	Elizabeth (Liz) Hackett, B.B.A., R.T.(N)(CT)(ARRT), PET, FSNMMI-TS, Orlando, Florida
2016-17	
President	Ann Obergfell, J.D., R.T.(R)(ARRT), Fort Wayne, Indiana
Vice President	Kenneth W. Chin, M.D., FACR, FSIR, Encino, California
Treasurer/Secretary	Steven M. Herrmann, MSA, R.T.(R)(M)(ARRT), CRA, FASRT, New York, New York
Trustee	Lisa Bartenhagen, M.S., R.T.(R)(T)(ARRT), Omaha, Nebraska
Trustee	Barbara J. Smith, M.S., R.T.(R)(QM)(ARRT), FASRT, FAEIRS, Portland, Oregon
Trustee	Elizabeth (Liz) Romero, M.S., R.T.(N)(CT)(ARRT), PET, FSNMMI-TS, Saint Pete Beach, Florida
Trustee	Paul A. Larson, M.D., FACR, Oshkosh, Wisconsin
Trustee	Deborah J. Rubens, M.D., Rochester, New York
Trustee	Travis Prowant, M.S.H.S., R.R.A., R.T.(R)(CV)(CT)(ARRT), Richmond, Virginia
Trustee	Albert Blumberg, M.D., FACR, Baltimore, Maryland
2017-18	
President	Steven M. Herrmann, MSA, R.T.(R)(M)(ARRT), CRA, FASRT, New York, New York
Vice President	Paul A. Larson, M.D., FACR, Oshkosh, Wisconsin
Treasurer/Secretary	Lisa Bartenhagen, M.S., R.T.(R)(T)(ARRT), Omaha, Nebraska
Trustee	Elizabeth (Liz) Romero, M.S., R.T.(N)(CT)(ARRT), PET, FSNMMI-TS, Saint Pete Beach, Florida
Trustee	Travis Prowant, M.S.H.S., R.R.A., R.T.(R)(CV)(CT)(ARRT), Richmond, Virginia
Trustee	Ann Obergfell, J.D., R.T.(R)(ARRT), Fort Wayne, Indiana
Trustee	Barbara J. Smith., M.S., R.T.(R)(QM)(ARRT), FASRT, FAEIRS, Portland, Oregon
Trustee	Kenneth W. Chin, M.D., FACR, FSIR, Encino, California
Trustee	Deborah J. Rubens, M.D., FACR, FAIUM, FSRU, Rochester, New York
Trustee	Albert Blumberg, M.D., FACR, Baltimore, Maryland
2018-19	
President	Paul A. Larson, M.D., FACR, Oshkosh, Wisconsin
Vice President	Lisa Bartenhagen, M.S., R.T.(R)(T)(ARRT), Omaha, Nebraska
Treasurer/Secretary	Deborah J. Rubens, M.D., FACR, FAIUM, FSRU, Rochester, New York
Trustee	Elizabeth (Liz) Romero, M.S., R.T.(N)(CT)(ARRT), PET, FSNMMI-TS, Saint Pete Beach, Florida
Trustee	Travis Prowant, M.S.H.S., R.R.A., R.T.(R)(CV)(CT)(ARRT), FASRT, Richmond, Virginia
Trustee	Cheryl DuBose, Ed.D., R.T.(R)(CT)(MR)(QM)(ARRT), MRSO, FASRT, Jonesboro, Arkansas
Trustee	Steven M. Herrmann, MSA, R.T.(R)(M)(ARRT), CRA, FASRT, New York, New York

Trustee	Barbara J. Smith., M.S., R.T.(R)(QM)(ARRT), FASRT, FAEIRS, Portland, Oregon
Trustee	David C. Madoff, M.D., FSIR, FACR, FCIRSE, New Haven, Connecticut
Trustee	Albert Blumberg, M.D., FACR, Baltimore, Maryland

2019-20

President	Lisa Bartenhagen, M.S., R.T.(R)(T)(ARRT), Omaha, Nebraska
Vice President	Elizabeth (Liz) Romero, M.S., R.T.(N)(CT)(ARRT), PET, FSNMMI-TS, Saint Pete Beach, Florida
Treasurer/Secretary	Barbara J. Smith., M.S., R.T.(R)(QM)(ARRT), FASRT, FAEIRS, Portland, Oregon
Trustee	Travis Prowant, M.S.H.S., R.R.A., R.T.(R)(CV)(CT)(ARRT), FASRT, Richmond, Virginia
Trustee	Lisa Bartenhagen, M.S., R.T.(R)(T)(ARRT), Omaha, Nebraska
Trustee	Cheryl DuBose, Ed.D., R.T.(R)(CT)(MR)(QM)(ARRT), MRSO, FASRT, Jonesboro, Arkansas
Trustee	Beth Weber, MPH, R.T.(R)(ARRT), RDMS, CRA, FASRT, Sioux Falls, South Dakota
Trustee	Paul A. Larson, M.D., FACR, Oshkosh, Wisconsin
Trustee	David C. Madoff, M.D., FSIR, FACR, FCIRSE, New Haven, Connecticut
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2020-21

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Treasurer/Secretary	Travis Prowant, M.S.H.S., R.R.A., R.T.(R)(CV)(CT)(ARRT), FASRT, Richmond, Virginia
Trustee	Lisa Bartenhagen, M.S., R.T.(R)(T)(ARRT), Omaha, Nebraska
Trustee	Cheryl DuBose, Ed.D., R.T.(R)(CT)(MR)(QM)(ARRT), MRSO, FASRT, Jonesboro, Arkansas
Trustee	Candice Johnstone, M.D., M.P.H., FAAWR, FACR, West Bend, Wisconsin
Trustee	David C. Madoff, M.D., FSIR, FACR, FCIRSE, New Haven, Connecticut
Trustee	Deborah J. Rubens, M.D., FACR, FAIUM, FSRU, Rochester, New York
Trustee	Barbara J. Smith., M.S., R.T.(R)(QM)(ARRT), FASRT, FAEIRS, Portland, Oregon
Trustee	Beth Weber, MPH, R.T.(R)(ARRT), RDMS, CRA, FASRT, Sioux Falls, South Dakota

2021-22

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Vice President	Travis Prowant, M.S.H.S., R.R.A., R.T.(R)(CV)(CT)(ARRT), FASRT, Richmond, Virginia
Treasurer/Secretary	Cheryl DuBose, Ed.D., R.T.(R)(CT)(MR)(QM)(ARRT), MRSO, FASRT, Jonesboro, Arkansas
Trustee	Sandra Hayden, MA, R.T.(T)(ARRT), FASRT, Dallas, Texas
Trustee	Candice Johnstone, M.D., M.P.H., FAAWR, FACR, West Bend, Wisconsin
Trustee	Jeff Killion, Ph.D., R.T.(R)(QM)(ARRT), Wichita Falls, Texas
Trustee	David C. Madoff, M.D., FSIR, FACR, FCIRSE, New Haven, Connecticut
Trustee	Elizabeth (Liz) Romero, M.S., R.T.(N)(CT)(ARRT), PET, FSNMMI-TS, Saint Pete Beach, Florida
Trustee	Deborah J. Rubens, M.D., FACR, FAIUM, FSRU, Rochester, New York
Trustee	Beth Weber, MPH, R.T.(R)(ARRT), RDMS, CRA, FASRT, Sioux Falls, South Dakota

2022-23

President	Travis Prowant, M.S.H.S., R.R.A., R.T.(R)(CV)(CT)(ARRT), FASRT, Richmond, Virginia
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Treasurer/Secretary	Beth Weber, MPH, R.T.(R)(ARRT), RDMS, CRA, FASRT, Sioux Falls, South Dakota
Trustee	Sandra Hayden, MA, R.T.(T)(ARRT), FASRT, Dallas, Texas
Trustee	Candice Johnstone, M.D., M.P.H., FAAWR, FACR, West Bend, Wisconsin
Trustee	Jeff Killion, Ph.D., R.T.(R)(QM)(ARRT), Wichita Falls, Texas
Trustee	David C. Madoff, M.D., FSIR, FACR, FCIRSE, New Haven, Connecticut
Trustee	Deborah J. Rubens, M.D., FACR, FAIUM, FSRU, Rochester, New York
Trustee	Lauren Shanbrun, M.S., CNMT, R.T.(N)(CT)(ARRT), FSNMMI-TS, Providence, Rhode Island
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