U. S. NUCLEAR REGULATORY COMMISSION

STATE OF RHODE ISLAND

STAFF ASSESSMENT OF PROPOSED AGREEMENT BETWEEN THE NRC AND THE STATE OF RHODE ISLAND

Notice is hereby given that the U. S. Nuclear Regulatory Commission is publishing for public comment the staff assessment of a proposed agreement received from the Governor of the State of Rhode Island for the assumption of certain of the Commission's regulatory authority pursuant to section 274 of the Atomic Energy Act of 1954, as amended.

The staff assessment of the proposed agreement, the proposed agreement and a narrative, prepared by the State of Rhode Island and describing the State's proposed program for control over sources of radiation, is set forth below as an appendix to this notice. A copy of the program narrative, including the referenced appendices, appropriate State legislation and Rhode Island regulations, is available for public inspection in the Commission's public document rooms at 1717 H Street, N.W., Washington, D. C. All interested persons desiring to submit comments and suggestions for the consideration of the Commission in connection with the proposed agreement should send them, in triplicate, to the Office of State Programs, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555; Attention: Edgar C. Ashley (301)492-7767 within 30 days after initial publication of this notice in the Federal Register.

Exemptions from the Commission's regulatory authority which would implement this proposed agreement, have been published in the Federal Register and codified as Part 150 of the Commission's regulations in Title 10 of the Code of Federal Regulations.

Dated at Bethesda, Maryland, this 25th day of June, 1979.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Robert G. Ryan, Director
Office of State Programs

APPENDIX

STAFF ASSESSMENT

SUMMARY

The Commission has received a proposal from the Governor of Rhode Island for the State to enter into an agreement with the NRC whereby the NRC would relinquish and the State would assume certain regulatory authority pursuant to section 274 of the Atomic Energy Act of 1954, as amended.

I. BACKGROUND

A. Section 274 of the Atomic Energy Act of 1954, as amended provides a mechanism whereby the NRC may transfer to the States certain regulatory authority over agreement materials[1] when a State desires to assume this authority and the Governor certifies that the State has an adequate regulatory program, and when the Commission finds that the State's program is compatible with that of the NRC and is adequate to protect the public health and safety. Section 274g directs the Commission to cooperate with the States in the formulation of standards for protection against radiation hazards to assure that State and Commission programs for radiation protection will be coordinated and compatible. Further, section 274j provides that:

> "The Commission, upon its own intitiative after reasonable notice and opportunity for hearing to the State with which an agreement under subsection b.

1. A. Byproduct materials
   B. Source materials; and
   C. Special nuclear materials in quantities not sufficient to form a critical mass.

has become effective, or upon request of the Governor of such State, may terminate or suspend all or part of its agreement with the State and reassert the licensing and regulatory authority vested in it under this Act, if the Commission finds that (1) such termination or suspension is required to protect the public health and safety, or (2) the State has not complied with one or more of the requirements of this section. The Commission shall periodically review such agreements and actions taken by the States under the agreements to ensure compliance with the provisions of this section."

B. In a letter dated May 25, 1979, Governor J. Joseph Garrahy of the State of Rhode Island requested that the Commission enter into an agreement with the State pursuant to section 274 of the Atomic Energy Act of 1954, as amended, and proposed that the agreement become effective on October 1, 1979. The Governor certified that the State of Rhode Island has a program for control of radiation hazards which is adequate to protect the public health and safety with respect to the materials within the State covered by the proposed agreement, and that the State of Rhode Island desires to assume regulatory responsibility for such materials.

The Governor has certified that there is no byproduct material as defined in section 11e.(2) of the Act within the State and that there is no activity within the State resulting in the production of byproduct material as defined in section 11e.(2) of the Act. At the same time, the staff has determined that there are no NRC

licenses outstanding in the State for byproduct material as defined in section 11e.(2) of the Act or for any activity within the State resulting in the production of byproduct material as defined in section 11e.(2) of the Act.

The proposed agreement provides for necessary amendments to the agreement in the event that the State wishes to regulate byproduct material as defined in section 11e.(2) of the Act and recognizes that it will be necessary to amend the agreement in the event any activity resulting in the production of byproduct material as defined in section 11e.(2) of the Act is found to exist within the State.

The eight Articles of the proposed agreement cover the following areas:

I. Lists the materials covered by the agreement.

II. Lists the Commission's continued authority and responsibility for certain activities.

III. Allows for certain regulatory changes by the Commission.

IV. References the continued authority of the Commission for common defense and security and safeguards purposes.

V. Pledges the best efforts of the Commission and the State to achieve coordinated and compatible programs.

VI. Recognizes reciprocity of licenses issued by the respective agencies.

VII. Sets forth criteria for termination or suspension of the agreement.

VIII. Specifies the effective date of the agreement.

C. Title 23, Chapter 1.3, as amended, of the General Laws of Rhode Island authorizes the Radiation Control Agency of the Department of Health to issue licenses to, and perform inspections of, users of radioactive materials under the proposed agreement and otherwise carry out a total radiation control program.

Rhode Island Rules and Regulations for the Control of Radiation, adopted in accordance with the Rhode Island Radiation Control Act, Title 23, Chapter 1.3 of the General Laws and the Administrative Procedure Act, Title 42, Chapter 35 of the General Laws, provides standards, licensing, inspection, enforcement and administrative procedures for agreement and non-agreement materials. The regulations are not applicable to agreement materials until the effective date of the agreement. The Rhode Island regulations became effective June 2, 1978 as they relate to x-ray machines and non-agreement materials such as naturally occurring and accelerator produced radioactive materials.

D. Environmental radiation issues with which the Division of Occupational Health and Radiation Control has been involved include: monitoring and assessment of the impact of radioactive fallout from nuclear weapons testing; monitoring and assessment of off-site impact of effluents from facilities utilizing large quantities of special nuclear materials; review of environmental reports and safety analysis reports submitted to support applications for EPA permits

and NRC licenses; monitoring and assessment of levels of radioactivity in public, community, and private drinking water supplies; and assistance to other State agencies when environmental radiation issues arise.

The Rhode Island Department of Environmental Management (DEM) is the department responsible for environmental protection within the State. The State laws governing hazardous waste, air pollution, and water pollution are included in Appendix I of the description of Rhode Island Radiation Control Program. The memoranda of understanding from the three divisions involved are contained in Appendix X.

The Division of Land Resources, DEM, will not issue a permit for a low-level radioactive waste burial site until a license has been issued by the Radiation Control Agency. Presently, the Division of Air Resources, DEM, does not have any air quality standards for radioactive air pollutants, and in the absence of any guidance from the United States Environmental Protection Agency (EPA), the division does not plan to regulate such materials.

The Division of Water Resources, DEM, does not issue EPA water discharge permits, but they do certify the adequacy of the applications. In their review they will assure that all discharges meet the standards contained in Appendix A, Table II, Column II of the Rhode Island rules and regulations.

E. The estimated budget for Radiation Control for fiscal year 1980 (July 1, 1979 to June 30, 1980) is $164,500. Funding for Radiation Control is 78% State and 22% Federal. Federal funds include $12,600 from the Bureau of Radiological Health for compliance testing of diagnostic X-ray and $23,590 in HEW block grant monies.

It is estimated that $78,000 wil be necessary to fund the radioactive materials activities of the Radiation Control Section. Radioactive material activities in the section will include naturally occurring and accelerator produced radioactive materials (NARM), environmental radiation programs and impact reviews, emergency response, industrial and academic X-ray facilities and agreement material activities.

Approximately one-third of the radioactive material budget, or $25,700 will be designated for the agreement material activities.

It is expected that close to 45 of approximately 50 NRC radioactive material licenses currently in effect in Rhode Island would be transferred to the State under the proposed Agreement. The State's budget for the agreement material program would therefore be approximately $570 per license. This compares to our recommended funding level range of $200-$250 per license.

II. ASSESSMENT OF PROPOSED RHODE ISLAND PROGRAM FOR CONTROL OF AGREEMENT MATERIALS

References: Criteria for Agreement With States Under Section 274 of the Atomic Energy Act of 1954, as Amended. 1/

OBJECTIVES

1. Protection, Development. A state regulatory program shall be designed to protect the health and safety of the people against radiation hazards, thereby encouraging the constructive uses of radiation.

Based upon the analysis of the State's proposed regulatory program (following), the staff believes the Rhode Island proposed regulatory program for agreement materials is adequately designed to protect the health and safety of the people against radiation hazards.

RADIATION PROTECTION STANDARDS 2/

2. Standards. The state regulatory program shall adopt a set of standards for protection against radiation, which shall apply to by-product, source and special nuclear materials in quantities not sufficient to form a critical mass.

1/ As adopted in February 1961 (26 F.R. 2537, March 24, 1961), and amended in November 1965 (30 F.R. 15044, December 4, 1965). Minor editorial changes have been made to reflect changes in reorganization and authority of Federal agencies.

2/ The Conference of Radiation Control Program Directors' model State regulations and State legislation for control of radiation were used as a basis for all criteria enunciated.

Statutory authority to formulate and promulgate rules and regulations is contained in the Rhode Island Radiation Control Act (Title 23 of the general laws entitled, "Health and Safety," Chapter 1.3, hereafter referred to as RIRCA) Section 23-1.3-2 (4). In accordance with that authority, the state has proposed Rules and Regulations for the Control of Radiation (hereafter referred to as RIRR) which include radiation protection standards which would apply to byproduct, source and special nuclear materials in quantities not sufficient to form a critical mass upon the effective date of an agreement between the state and the Commission pursuant to Section 274b of the Atomic Energy Act of 1954, as amended.

References: RIRCA Section 23-1.3-2 (4)
RIRR Part A.

3. Uniformity in Radiation Standards. It is important to strive for uniformity in technical definitions and terminology, particularly as related to such things as units of measurement and radiation dose. There shall be uniformity on maximum permissible doses and levels of radiation and concentrations of radioactivity, as fixed by 10 CFR Part 20 of the NRC regulations based on officially approved radiation protection guides.

Technical definitions and terminology contained in the Rhode Island regulations including those related to units of measurement and radiation dose are uniform with those contained in 10 CFR Part 20, except the definition of byproduct material conforms to that contained in the Atomic Energy Act prior to enactment by Congress of P.L. 95-604, 92 Stat. 3021 et seq., November 8, 1978, the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA). Enactment of P.L. 95-604 took place after

promulgation of the proposed state regulations. The staff notes that Rhode Island is not now the site of mill tailings from ores processed primarily for their source material content nor is it likely to become such a site in the foreseeable future. The definition of byproduct material currently in use by the 25 Agreement States is that contained in the Atomic Energy Act of 1954, as amended prior to enactment of P.L. 95-604. NRC staff is preparing draft model State legislation which, when enacted by affected states, will enable them to conform with the requirements of UMTRCA, including the amended definition of byproduct material. The States have until November 7, 1981 to enact such legislation and adopt other necessary regulatory requirements if the States desire to continue to regulate ores processed primarily for their source material content and disposal of byproduct materials as defined in Section 11 e (2) of the Atomic Energy Act, as amended, pursuant to a Section 274b agreement with the NRC.

In view of the above, the absence of a definition of byproduct material conforming to that contained in Section 11 e (2) of the Atomic Energy Act of 1954, as amended, is not viewed as a significant departure at this time from the need for uniformity in radiation standards and should not be considered an impediment towards signing of a Section 274b agreement.

References: RIRR Part A and Annex

Governor Garrahy's letter dtd May 25, 1979, Enclosure (1).

4. Total Occupational Radiation Exposure. The regulatory authority shall consider the total occupational radiation exposure of individuals, including that from sources which are not regulated by it.

The Rhode Island regulations cover all sources of radiation within the State's jurisdiction and provide for consideration of the total radiation exposure of individuals from all sources of radiation in the possession of a licensee or registrant.

References: RIRR, Part A.2.1 and A.2.2.

5. Surveys, Monitoring. Appropriate surveys and personnel monitoring under the close supervision of technically competent people are essential in achieving radiological protection and shall be made in determining compliance with safety regulations.

The requirements for surveys to evaluate potential exposures from sources of radiation and the personnel monitoring requirements are uniform with those contained in 10 CFR Part 20.

References: RIRR Parts A.3.1, A.3.2 and A.3.7 (c), (d) and (f); C.8.2(c); E.2.15, and Annex, definition no. 157.

6. Labels, Signs, Symbols. It is desirable to achieve uniformity in labels, signs and symbols, and the posting thereof. However, it is essential that there be uniformity in labels, signs, and symbols affixed to radioactive products which are transferred from person to person.

The prescribed radiation labels, signs and symbols are uniform with those contained in 10 CFR Part 20, Parts 30 thru 32 and Part 34. The Rhode Island posting requirements are also uniform with those contained in Part 20.

References: RIRR Parts A.3.3 and A.3.4, Part C, and Part E.2.

7. Instruction. Persons working in or frequenting controlled areas shall be instructed with respect to the hazards of excessive exposure to radioactive materials and in precautions to minimize exposure.

The Rhode Island regulations contain requirements for instructions and notices to workers that are uniform with those contained in 10 CFR Part 19.

Reference: RIRR Part A.6.

8. Storage. Licensed radioactive material in storage shall be secured against unauthorized removal.

Licensed radioactive material in storage must be secured against unauthorized removal from places of storage.

Reference: RIRR Parts A.3.6 and E.2.3.

9. Waste Disposal. The standards for the disposal of radioactive materials into the air, water, and sewers, and burial in the soil shall be in accordance with Part 20. Holders of radioactive material desiring to release or dispose of quantities in excess of the prescribed limits shall be required to obtain special permission from the appropriate regulatory authority.

The standards for the disposal of radioactive materials into the air, water and sewers and by burial in the soil are uniform with those in 10 CFR Part 20.

Holders of radioactive materials licenses desiring to release or dispose of concentrations or quantities in excess of the prescribed limits are required to obtain special permission from the Rhode Island Department of Health. The criteria for granting exceptions, as specified in the regulations, are uniform with those contained in 10 CFR Part 20.

References: RIRR Part A.4.

10. Regulations Governing Shipment of Radioactive Materials. The state shall to the extent of its jurisdiction promulgate regulations applicable to the shipment of radioactive materials, such regulations to be compatible with those established by the U. S. Department of Transportation and other agencies of the United States whose jurisdiction over interstate shipment of such materials necessarily continues.

The transportation of licensed material including by common and contract carriers when such transportation is subject to the regulations of the U. S. Department of Transportation or the U. S. Postal Service is exempt from licensing. Other transportation is subject to licensing requirements and licensees must comply with applicable requirements of the U. S. Department of Transportation.

References: RIRR Parts A.1.4 (b), C.4.3 and C.7.

11. Records and Reports. The state regulatory program shall require that holders and users of radioactive materials: (a) maintain records covering personnel radiation exposures, radiation surveys, and disposals of materials; (b) keep records of the receipt and transfer of the materials; (c) report significant incidents involving the materials, as prescribed by the regulatory authority; (d) make available upon request of a former employee a report of his exposure to radiation; (e) at request of an employee advise him of his annual radiation exposure; and (f) inform each employee in writing when he has received radiation exposure in excess of the prescribed limits.

The Rhode Island regulations require the following records reports by licensees and registrants:

a. Records covering personnel radiation exposures, radiation surveys and disposal of materials.

   Reference: RIRR Parts A.5., C.8.2(c) and E.2.15.

b. Records of receipts and transfer of licensed materials.
Reference: RIRR Part A.1.5.

c. Reports of radiation incidents, overexposures and excessive levels and concentrations are defined in provisions uniform with those contained in 10 CFR Part 20.
Reference RIRR Parts A.5.2, A.5.3, and A.5.4.

d. Reports to former employees or to individuals of their exposure to radiation or radioactive material.
Reference: RIRR Parts A.5.6, A.5.7, and A.6.4.

12. Additional Requirements and Exemptions. Consistent with the overall criteria here enumerated and to accommodate special cases or circumstances, the regulatory authority shall be authorized in individual cases to impose additional requirements to protect health and safety, or to grant necessary exemptions which will not jeopardize health and safety.

The Rhode Island Department of Health is authorized to impose upon any licensee or registrant, by rule, regulation, or order such requirements in addition to those established in the regulations as it deems appropriate or necessary to minimize danger to public health and safety or property.
Reference: RIRR Part A.1.8.

The Rhode Island Department of Health is authorized to exempt certain radiation sources, uses or users from licensing or registration requirements when it makes a finding that the exemption will not constitute a significant risk to the public health and safety.
Reference: RIRCA 23-1.3-5(d).

PRIOR EVALUATION OF USES OF RADIOACTIVE MATERIALS

13. Prior Evaluation of Hazards and Uses, Exceptions. In the present state of knowledge, it is necessary in regulating the possession and use of byproduct, source and special nuclear materials that the regulatory authority require the submission of information on, and evaluation of, the potential hazards and the capability of the user or possessor prior to his receipt of the materials. This criterion is subject to certain exceptions and to continuing reappraisal as knowledge and experience in the atomic energy field increase. Frequently there are, and increasingly in the future there may be, categories of materials and uses as to which there is sufficient knowledge to permit possession and use without prior evaluation of the hazards and the capability of the possessor and user. These categories fall into two groups -- those materials and uses which may be completely exempt from regulatory controls, and those materials and uses in which sanctions for misuse are maintained without preevaluation of the individual possession or use. In authorizing research and development or other activities involving multiple uses of radioactive materials, where an institution has people with extensive training and experience the regulatory authority may wish to provide a means for authorizing broad use of materials without evaluating each specific use.

Prior to the issuance of a specific license for the use of radioactive material, the Rhode Island Department of Health will require the submission of information on, and will make an evaluation of, the potential hazards of such uses, and the capability of the applicant.

References: RIRR Parts C.1, C.3.1(b), and C.5
Governor Garrahy's letter dtd May 25, 1979
Enclosure (2)

Provision is made for the issuance of general licenses for byproduct, source and special nuclear materials in situations where prior evaluation of the licensee's qualifications, facilities, equipment and procedures is not required. The regulations grant general licenses under the same circumstances as those under which general licenses are granted in the Commission's regulations.

References: RIRR Parts C.1, C.3.1(a), C.4 and C.6.

14. Evaluation Criteria. In evaluating a proposal to use radioactive materials, the regulatory authority shall determine the adequacy of the applicant's facilities and safety equipment, his training and experience in the use of the materials for the purpose requested, and his proposed administrative controls.

In evaluating a proposal to use agreement materials, the Rhode Island Department of Health will determine whether:

a. The applicant is qualified by reason of training and experience to use the material in question for the purpose requested in a manner as to minimize danger to public health and safety or property;

b. The applicant's proposed equipment, facilities, and procedures are adequate to minimize danger to public health and safety or property; and

c. The issuance of the license will not be inimical to the health and safety of the public.

Reference: RIRR Part C.5.2.

Special requirements for the issuance of specific licenses are contained in the regulations.

References: RIRR Parts C.5.3, C.5.4 and C.5.5.

15. Human Use The use of radioactive materials and radiation on or in humans shall not be permitted except by properly qualified persons (normally, licensed physicians) possessing prescribed minimum experience in the use of radioisotopes or radiation.

The use of radioactive materials or sealed sources on or in humans will be permitted only by licensed physicians possessing prescribed experience in the use, handling and administration of radioisotopes or radiation. Rhode Island requirements regarding such use are uniform with those of the NRC.

References: RIRR Part C.5.3(a) thru (d).

Governor Garrany's ltr dtd May 25, 1979

Enclosure (2)

INSPECTION

16. Purpose, Frequency. The possession and use of radioactive materials shall be subject to inspection by the regulatory authority and shall be subject to the peformance of tests, as required by the regulatory authority. Inspection and testing is conducted to determine, and to assist in obtaining, compliance with regulatory requirements. Frequency of inspection shall be related directly to the amount and kind of material and type of operation licensed, and it shall be adequate to insure compliance.

The possession and use of radioactive materials will be subject to inspection by the Rhode Island Department of Health and also to the performance of tests as required by or performed by the Department. Inspection and testing will be conducted to determine compliance with State regulations and to determine adequacy of the licensee's radiation protection program. Proposed inspection procedures are similar to those of the NRC Office of Inspection and Enforcement.

The frequency of inspections is dependent upon the type and scope of the licensed activities and will be at least as frequent, and in most cases, more frequent than inspections of similar licensees by NRC.

References: RIRR Parts A.1.6 and A.1.7.
Governor Garrahy's ltr dtd May 25, 1979
Enclosure (2)

17. Inspections Compulsory. Licensees shall be under obligation by law to provide access to inspectors.

The Director of Health or his duly authorized representatives shall have the power to enter at all reasonable times upon any private or public property for the purpose of determining whether or not there is compliance with the state radiation control act and rules and regulations issued thereunder.

References: RIRCA Section 23-1.3-4.
RIRR Part A.1.6(a)

18. Notification of Results of Inspection. Licensees are entitled to be advised of the results of inspections and to notice as to whether or not they are in compliance.

When there are items of noncompliance, licensees must be informed at the time of inspection. Written notices of violations will also be provided by the Department.

References: RIRR Part A.7.1 (a), (b) and (c).
Governor Garrahy's ltr dtd May 25, 1979
Enclosure (2).

ENFORCEMENT

19. Enforcement. Possession and use of radioactive materials should be amenable to enforcement through legal sanctions, and the regulatory authority shall be equipped or assisted by law with the necessary powers for prompt enforcement. This may include, as appropriate, administrative remedies looking toward issuance of orders requiring affirmative action or suspension or revocation of the right to possess and use materials, and the impounding of materials; the obtaining of injunctive relief; and the imposing of civil or criminal penalties.

The Department is equipped with the necessary powers for prompt enforcement of the regulations as follows:

a. Each Notice of Violation will require a consent agreement whereby the licensee shall provide a written response to the Agency within ten days of service of the Notice of Violation.

   Reference: RIRR Part A.7.1 (c).

b. The Department may issue orders to suspend, modify or revoke licenses.

   Reference: RIRR Part A.7.4.

c. When the administrator finds that an emergency exists requiring immediate action to protect the public health or welfare, he may issue an order reciting the existence of such an emergency and require such action be taken as deemed necessary to meet the emergency. The order shall be effective immediately, but upon application to the Director of Health, a hearing shall be afforded within 15 days.

References: RIRCA Section 23-1.3-9
RIRR Part A.7.3.

d. A civil action may be instituted in superior court on behalf of the agency for injunctive relief to prevent the violation of the provisions of RCA 23-1.3 or codes, rules or regulations promulgated hereunder, and said court may proceed in the action in a summary manner or otherwise and may restrain in all such cases any person from violating any of the provisions of this chapter or said rules or regulations.

Reference: RIRCA Section 23-1.3-10.

e. Any person who willfully violates any provisions of Radiation Control Act, the regulations, or orders issued thereunder may be guilty of a misdemeanor and subject to a fine or imprisonment, or both.

Reference: RIRR Part A.1.9.

PERSONNEL

20. Qualifications of Regulatory and Inspection Personnel. The regulatory agency shall be staffed with sufficient trained personnel. Prior evaluation of applications for licenses or authorizations and inspection of licensees must be conducted by persons possessing the training and experience relevant to the type and level of radioactivity in the proposed use to be evaluated and inspected.

To perform these functions involved in evaluation and inspection, it is desirable that there be personnel holding a bachelor's degree or equivalent in the physical and/or life sciences, and that the personnel have had training and experience in radiation protection. The person who will be responsible for the actual performance of evaluation and inspection of all of the various uses of byproduct, source and special nuclear material which might come to the regulatory body should have substantial training and extensive experience in the field of radiation protection.

It is recognized that there will also be persons in the program performing a more limited function in evaluation and inspection. These persons will perform the day-to-day work of the regulatory program and deal with both routine situations as well as some which will be out of the ordinary. These people should have a bachelor's degree or equivalent in the physical or life sciences, training in health physics, and approximately two years of actual work experience in the field of radiation protection.

The foregoing are considered desirable qualifications for the staff who will be responsible for the actual performance of evaluation and inspection. In addition, there will probably be trainees associated with the regulatory program who will have an academic background in the physical or life sciences as well as varying amounts of specific training in radiation protection but little or no actual work experience in this field. The background and specific training of these persons will indicate to some extent their potential role in the regulatory program. As they gain experience and competence in the field, the trainees could be used progressively to deal with the more complex or difficult types of radioactive material applications. It is desirable that such trainees have a bachelor's degree or equivalent in the physical or life sciences and specific training in radiation protection. In determining the requirement for academic training of individuals in all of the foregoing categories, proper consideration should be given to equivalent competency which has been gained by appropriate technical and radiation protection experience.

It is recognized that radioactive materials and their uses are so varied that the evaluation and inspection functions will require skills and experience in the different disciplines which will not always reside in one person. The regulatory authority should have the composite of such skills either in its employ or at its command, not only for routine functions, but also for emergency cases.

a. Number of Personnel

There are approximately 50 NRC specific licenses in the State of Rhode Island. Under the proposed agreement, the State would assume responsibility for about 45 of these licenses. In addition, there are approximately 1500 X-ray machines and 10 radium users in the State. The Radiation Control Agency is staffed with two professional persons to carry out the radioactive material control activities. We estimate the State will need to apply a minimum of 0.5 to 0.75 person-years of effort to the program. The present personnel together with their assigned responsibilities are as follows:

James E. Hickey: Chief, Division of Occupational Health and Radiation Control. Administrator, Radiation Control Agency. Responsible for overall administration and supervision of Division activities.

James L. Nolan: Supervising Radiation Control Specialist. Will be responsible for the radioactive materials control program, environmental surveillance and emergency response activities. Mr. Nolan will administer the licensing and inspection activities.

The Agency also has four persons specifically assigned to the x-ray program.

b. Training

The academic and specialized short course training for those persons involved in the administration, licensing and inspection of radioactive materials is shown below.

Mr. Hickey holds an M.S. degre in Occupational and Radiological Health from the Harvard School of Public Health. Mr. Nolan holds an MSE degree in Air Resources Engineering from the University of Washington. Mr. Hickey and Mr. Nolan attended the following specialized short courses:

James Hickey - Radionuclide Analysis by Gamma Spectroscopy - DHEW, PHS, BRH, November 1966, Rockville, Maryland. - Ten Days
State Emergency Planning in Relation to Licensed Nuclear Facilities - USAEC, March 1973, Brookhaven, New York. - Three Days

Orientation in Regulatory Practices and Procedures - USNRC, September 1976, Bethesda, Maryland - Ten days.

James Nolan - NRC "Ten-Week Health Physics and Radiation Protection Course"

NRC "Medical Use of Radionuclides for State Regulatory Personnel" - Five days

NRC "Orientation Course in Regulatory Practices and Procedures" - Ten days

NRC "Radiological Emergency Response Operations" Eight days

NRC "Inspection Procedures" - Five days

NRC "Safety Aspects of Industrial Radiography for State Regulatory Personnel" - Five days

USEPA - Five courses on air pollution - Four to five days each.

c. Experience

Mr. Hickey has been Health Specialist and Program Administrator, Rhode Island Department of Health, Occupational and Radiological Health Program since 1968. Mr. Nolan has been inspecting x-ray facilities, is a Health Physicist on the State emergency response team and supervisor of the radiological environmental monitoring program since January 1978. Mr. Nolan also worked as an Air Pollution Control Engineer and supervisor in the Air Quality Management Section of the State Department of Health during the period 1972-1978.

d. Medical Advisory Committee

The State's Medical Advisory Committee is an integral part of the Rhode Island Radiation Advisory Commission. By law, the Commission shall consist of eleven members. Areas of medical expertise represented on the Commission are nuclear medicine, nuclear pharmacy, veterinary medicine, dentistry, diagnostic radiology, radiological physics, and radiologic technology. Applications for non-routine medical uses of radioactive materials will be referred to the Commission for evaluation and recommendations.

Reference: RIRCA 23-1.3-13.

SPECIAL NUCLEAR MATERIAL

21. Conditions Applicable to Special Nuclear Material. The State's regulations do not prohibit or interfere with the duties imposed by the NRC on holders of special nuclear material owned by the U. S. Department of Energy or licensed by NRC, such as the responsibility of licensees to supply to the NRC reports of transfer and inventory.

Reference: RIRR Part A.1.1(a).

22. Special Nuclear Material Defined. The definition of special nuclear material in quantities not sufficient to form a critical mass, as contained in the Rhode Island regulations, is uniform with the definition in 10 CFR Part 150.

Reference: RIRR Annex, Definition 151.

ADMINISTRATION

23. Fair and Impartial Administration. The State has incorporated into its program provisions for a fair and impartial administration of its regulatory program. Public participation is provided for in the:

(a) adoption, amendment, or repeal of rules;

Reference: RIRCA 23-1.3-2(c)(4)
RI Administrative Procedures Act 42-35
RIRR preamble

(b) granting, suspending, revoking, or amending of any license;

Reference: RI APA 42-35
RIRR A.7

(c) determination of compliance with rules and regulations.

Reference: RI APA 42-35

RIRR A.7

Any person adversely affected by the final determination of the Agency may petition for the judicial review of such determination in the superior court and finally by appeal to the State Supreme Court.

Reference: RI APA 42-35

ARRANGEMENTS FOR DISCONTINUING NRC JURISDICTION

24. State Agency Designation. The Rhode Island Department of Health's Division of Occupational Health and Radiation Control has been designated as the State's Radiation Control Agency.

Reference: RIRCA 23-1.3-2

25. Existing NRC Licenses and Pending Applications. The Agency has made provision to continue NRC licenses in effect temporarily after the transfer of jurisdiction. Such licenses will expire either 90 days after receipt from the Agency of a notice of expiration or on the date of expiration specified in the federal license, whichever is earlier.

Reference: RIRCA 23-1.3-7

26. Relations with Federal Government and Other States. The Rhode Island Radiation Control Agency is charged with advising, consulting and cooperating with the federal government, other states and interstate agencies, political subdivisions, industries, and with groups concerned with control of radiation sources.

Reference: RIRCA 23-1.3-2

27. Coverage, Reciprocity. The proposed Rhode Island agreement provides for the assumption of regulatory authority over the following categories of materials within the State:

(a) Byproduct materials, as defined by Section 11e.(1) of the Atomic Energy Act, as amended.

(b) Source materials.

(c) Special nuclear materials in quantities not sufficient to form a critical mass.

Reference: Proposed Agreement, Article I.

Provision has been made by Rhode Island for the reciprocal recognition of licenses to permit activities within Rhode Island of persons licensed by other jurisdictions. This reciprocity is like that granted under 10 CFR Part 150.

Reference: RIRR C.6.

28. NRC and Department of Energy Contractors. The State's regulations provide that certain NRC and DOE contractors or subcontractors are exempt from the State's requirements for licensing and registration of sources of radiation which such persons receive, possess, use, transfer, or acquire.

Reference: RIRR A.1.4(c)

III. STAFF CONCLUSION

Section 274d of the Atomic Energy Act of 1954, as amended, states: "The Commission shall enter into an agreement under subsection b. of this section with any State if--

"(1) The Governor of that State certifies that the State has a program for the control of radiation hazards adequate to protect the public health and safety with respect to the materials within the State covered by the proposed agreement, and that the State desires to assume regulatory responsibility for such materials; and

"(2) the Commission finds that the State program is in accordance with the requirements of subsection o. and in all other respects compatible with the Commission's program for the regulation of such materials, and that the State program is adequate to protect the public health and safety with respect to the materials covered by the proposed agreement."

The staff has concluded that the State of Rhode Island meets the requirements of section 274 of the Act. The State's statutes, regulations, personnel, licensing, inspection and administrative procedures are compatible with those of the Commission and adequate to protect the public health and safety with respect to the materials covered by the proposed agreement.

AGREEMENT
BETWEEN THE
UNITED STATES NUCLEAR REGULATORY COMMISSION
AND THE
STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS
FOR
DISCONTINUANCE OF CERTAIN COMMISSION REGULATORY AUTHORITY
AND
RESPONSIBILITY WITHIN THE STATE PURSUANT TO
SECTION 274 OF THE ATOMIC ENERGY ACT OF 1954, AS AMENDED

WHEREAS, The United States Nuclear Regulatory Commission (hereinafter referred to as the Commission) is authorized under Section 274 of the Atomic Energy Act of 1954, as amended (hereinafter referred to as the Act), to enter into agreements with the Governor of any State providing for discontinuance of the regulatory authority of the Commission within the State under Chapters 6, 7, and 8, and Section 161 of the Act with respect to by-product materials as defined in sections 11e.(1) and (2) of the Act, source materials, and special nuclear materials in quantities not sufficient to form a critical mass; and

WHEREAS, The Governor of the State of Rhode Island and Providence Plantations is authorized under 23-1.3-7 of the General Laws of Rhode Island to enter into this Agreement with the Commission; and

WHEREAS, The Governor of the State of Rhode Island and Providence Plantations certified on May 25, 1979, that the State of Rhode Island and Providence Plantations (hereinafter referred to as the State) has a program for the control of radiation hazards adequate to protect the public health and safety with respect to the materials within the State covered by this Agreement, and that the State desires to assume regulatory responsibility for such materials; and

WHEREAS, The Governor of the State of Rhode Island and Providence Plantations certified on May 25, 1979, that there is no byproduct material as defined in section 11e.(2) of the Act within the State and that there is no activity within the State resulting in the production of byproduct material as defined in section 11e.(2) of the Act; and

WHEREAS, The Commission found on , that the program of the State for the regulation of the materials covered by this Agreement is compatible with the Commission's program for the regulation of such materials and is adequate to protect the public health and safety; and

WHEREAS, The Commission found on , that there are no NRC licenses outstanding in the State for byproduct material as defined in section 11e.(2) of the Act or for any activity within the State resulting in the production of byproduct material as defined in section 11e.(2) of the Act; and

WHEREAS, The State and the Commission recognize the desirability and importance of cooperation between the Commission and the State in the formulation of standards for protection against hazards of radiation and in assuring that State and Commission programs for protection against hazards of radiation will be coordinated and compatible; and

WHEREAS, The Commission and the State recognize the desirability of reciprocal recognition of licenses and exemptions from licensing of those materials subject to this Agreement; and

WHEREAS, The State and the Commission recognize that it will be necessary to consider amendments to this Agreement in the event that the State wishes to regulate byproduct material as defined in Section 11e.(2) of the Act and that it will be necessary to amend this Agreement in the event any activity resulting in the production of byproduct material as defined in section 11e.(2) of the act is found to exist within the State; and

WHEREAS, This Agreement is entered into pursuant to the provisions of the Atomic Energy Act of 1954, as amended;

NOW, THEREFORE, It is hereby agreed between the Commission and the Governor of the State, acting in behalf of the State, as follows:

ARTICLE I

Subject to the exceptions provided in Articles II, III, and IV, the Commission shall discontinue, as of the effective date of this Agreement, the regulatory authority of the Commission in the State under Chapters 6, 7, and 8, and Section 161 of the Act with respect to the following materials:

A. Byproduct materials as defined in section 11e.(1) of the Act;

B. Source materials; and

C. Special nuclear materials in quantities not sufficient to form a critical mass.

ARTICLE II

This Agreement does not provide for discontinuance of any authority and the Commission shall retain authority and responsibility with respect to regulation of:

A. The construction and operation of any production or utilization facility;

B. The export from or import into the United States of byproduct, source, or special nuclear material, or of any production or utilization facility;

C. The disposal into the ocean or sea of byproduct, source, or special nuclear waste materials as defined in regulations or orders of the Commission;

D. The disposal of such other byproduct, source, or special nuclear material as the Commission from time to time determines by regulation or order should, because of the hazards or potential hazards thereof, not be so disposed of without a license from the Commission.

ARTICLE III

Notwithstanding this Agreement, the Commission may from time to time by rule, regulation, or order, require that the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing source, byproduct, or special nuclear material shall not transfer possession or control of such product except pursuant to a license or an exemption from licensing issued by the Commission.

ARTICLE IV

This Agreement shall not affect the authority of the Commission under subsection 161 b. or i. of the Act to issue rules, regulations, or orders to protect the common defense and security, to protect restricted data or to guard against the loss or diversion of special nuclear material.

ARTICLE V

The Commission will use its best efforts to cooperate with the State and other Agreement States in the formulation of standards and regulatory programs of the State and the Commission for protection against hazards of radiation and to assure that State and Commission programs for protection against hazards of radiation will be coordinated and compatible. The State will use its best efforts to cooperate with the Commission and other Agreement States in the formulation of standards and regulatory programs of the State and the Commission for protection against hazards of radiation and to assure that the State's program will continue to be compatible with the program of the Commission for the regulation of like materials. The State and the Commission will use their best efforts to keep each other informed of proposed changes in their respective rules and regulations and licensing, inspection and enforcement policies and criteria, and to obtain the comments and assistance of the other party thereon.

ARTICLE VI

The Commission and the State agree that it is desirable to provide for reciprocal recognition of licenses for the materials listed in Article I licensed by the other party or by any Agreement State. Accordingly, the Commission and the State agree to use their best efforts to develop appropriate rules, regulations, and procedures by which such reciprocity will be accorded.

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ARTICLE VII

The Commission, upon its own initiative after reasonable notice and opportunity for hearing to the State, or upon request of the Governor of the State, may terminate or suspend all or part of this Agreement and reassert the licensing and regulatory authority vested in it under the Act if the Commission finds that (1) such termination or suspension is required to protect the public health and safety or (2) the State has not complied with one or more of the requirements of section 274 of the Act. The Commission shall periodically review this Agreement and actions taken by the State under this Agreement to ensure compliance with section 274 of the Act.

ARTICLE VIII

This Agreement shall become effective on October 1, 1979 and shall remain in effect unless and until such time as it is terminated pursuant to Article VII.

Done at Providence, State of Rhode Island, in triplicate, this _____ day of _____.

FOR THE UNITED STATES NUCLEAR REGULATORY COMMISSION

_____

FOR THE STATE OF RHODE ISLAND AND
PROVIDENCE PLANTATIONS

_____

J. Joseph Garrahy, Governor

THE RHODE ISLAND RADIATION CONTROL PROGRAM

FOREWARD

The State of Rhode Island and Providence Plantations, while recognizing that the scientific, medical, and industrial usages of atomic energy can be beneficial to its citizens, is also cognizant of the hazards inherent to ionizing radiation. With these hazards in mind, and considering that the State is committed to attain the highest practicable degree of protection for the public from the harmful effects of all types of radiation exposure and simultaneously permit the many beneficial applications of radiation, the 1976 Rhode Island State Legislature enacted the present Radiation Control Act.

Section 274 of the Atomic Energy Act of 1954, as amended, authorizes the United States Nuclear Regulatory Commission (NRC) to enter into an agreement with the governor of a state for purposes of transferring to that state certain functions of licensing and regulatory control of byproduct, source, and less than critical quantities of special nuclear material.

Section 23-1.3-7 of the 1976 Rhode Island Radiation Control Act authorizes the Governor, on behalf of the State, to enter into an agreement with the NRC which would provide a discontinuance of certain responsibilities of the NRC relating to ionizing radiation and the assumption of such responsibilities by the State. A copy of this legislation is contained in Appendix I.

HISTORY

Prior to 1960, radiation control activities were integrated with the other program activities of the Division of Occupational Health of the Rhode Island Department of Health. About that time radiological health was recognized as an area of concern requiring a set of special program activities within the Division. The development of these activities generally has paralleled that of other states with the important exception that comprehensive radiation control legislation was not adopted until 1976.

In the early 1960's emphasis was placed upon personnel training in radiological health through attendance at U.S. Public Health Service courses. A state Industrial Code relating to Occupational Radiation Protection was adopted in June 1964. In response to the requirements of this Code, a registration of radiation sources was conducted and completed during 1965. Radiation protection surveys of x-ray facilities and facilities utilizing Radium began at this time. An environmental radiation surveillance network was established by the Division during the early 1960's to measure fallout and has provided continuous data since that time. The need for radiological emergency response capability was recognized with the occurrance of a criticality accident in the state in 1964 which resulted in one radiation death. The Division has cooperated with other agencies to provide this capability and is presently engaged in updating the State Emergency Response Plan.

The Division has been actively representing the State of Rhode Island as a member of the Conference of Radiation Control Program Directors, (CRCPD), and the New England Radiological Health Committee, (NERHC), since their inceptions. Both organizations bring together state and federal agencies for cooperative efforts toward reduction of radiation exposure.

Radioactive material users have been provided assistance with hazards evaluations and reduction upon request. These services have been available to and utilized by Nuclear Regulatory Commission licensees as well as users of naturally occurring and accelerator produced radioactive materials (NARM). Division personnel have taken every opportunity to accompany NRC inspectors in order to become familiar with problems uncovered in Rhode Island and procedures used for inspections and compliance.

Environmental radiation issues with which this Division has been involved include: monitoring and assessment of the impact of radioactive fallout from nuclear weapons testing; monitoring and assessment of off-site impact of effluents from facilities utilizing large quantities of special nuclear materials; review of environmental reports and safety analysis reports submitted to support applications for EPA permits and NRC licenses; monitoring and assessment of levels of radioactivity in public, community, and private drinking water supplies; and assistance to other state agencies when environmental radiation issues arise.

Medical and dental radiography presents by far the largest man-made source of ionizing radiation exposure to the state's population. As a result, programs to reduce this exposure have been given priority over the years. Early programs emphasized physical surveys to encourage voluntary compliance with NCRP recommendations for equipment and structural shielding. In 1968 emphasis shifted somewhat to programs designed to lower patient dose through user assistance. At that time a program was developed and implemented by which dental exposures could be normalized to provide optimum diagnostic quality at minimum patient exposure.

This Rhode Island program described in an article published in the American Journal of Public Health in August 1970 (contained in Appendix VIII) became the basis for the Dental Exposure Normalization Technique (DENT) program sponsored by the federal Food and Drug Administration's Bureau of Radiological Health (BRH,FDA). Under their sponsorship, DENT has since been implemented by most states. The Division has also conducted Technique Normalization programs for mammography, and for podiatric, chiropractic, and cephalometric x-ray procedures. In later years the quality assurance aspects of these programs have received special attention.

In 1975 the Division began its participation in the Nationwide Evaluation of X-Ray Trends (NEXT) program sponsored by CRCPD and BRH, FDA. A stratified random sample of 100 x-ray facilities was chosen and surveyed under this program. The results, including mean exposures for Rhode Island for various routine radiographic procedures, were published in the Rhode Island Medical Journal in 1978, and this paper is included in Appendix VIII. The Division continues to utilize the NEXT program in its x-ray control effects.

During 1976 it was decided by the State's Legislature that comprehensive legislation and regulations for control of radiation were necessary and desirable in Rhode Island to accomplish further reductions in population exposure to radiation. The State Radiation Control Act, Title 23, Chapter 1.3 of the General Laws was enacted in May 1976. Acting in accordance with this legislation, the Director of Health designated the renamed Division of Occupational Health and Radiation Control as the State Radiation Control Agency and designated the current Chief of that Division as the Agency's Administrator. The Director also appointed the eleven-member Radiation Advisory Commission as provided by the legislation.

Regulations for x-ray facilities, which are modeled after the Suggested State Regulations for Control of Radiation, were drafted by the Agency and reviewed by the Radiation Advisory Commission. After a public hearing in accordance with the State's Administrative Procedures Act, the Agency's first regulations were adopted in June 1978. These regulations provide for annual registration of all x-ray facilities and certain services to x-ray facilities. The initial registration was completed in September 1978. Inspection of x-ray facilities on a scheduled basis for compliance with regulations began shortly thereafter.

The State Radiation Control Act also provides the authority for the Governor to enter into an Agreement for the assumption of certain licensing and inspection functions of NRC. In December 1978, regulations were adopted to facilitate the transition of authority from NRC to the State Radiation Control Agency. These regulations become effective on the date of an Agreement.

ORGANIZATION, FUNCTIONS, AND RESPONSIBILITIES

The Rhode Island Department of Health was established in April 1878, under Section 23 of the General Laws of Rhode Island. This department is responsible for promoting and protecting the health of the people of Rhode Island by:

1) formulating policy and providing leadership and coordination of health services;

2) directing the planning, regulation, and development of health resources; and

3) providing personal and environmental health services.

The act creating the state Board of Health established a six-member board to make investigations into the causes of disease, especially epidemics and endemics among the people, the sources of mortality, and the effects of localities, employments, conditions, and circumstances on the public health. Subsequent legislation setting up individual divisions within the Health Department delegated the responsibility for promulgating rules and regulations to each individual division.

The Department has four Associate Directors with broad program responsibilities in: 1) Management and Support Services, 2) Health Planning and Development, 3) Preventative Medicine, and 4) Community Health Services. A chart showing the present organization of the Department of Health is contained in Appendix II.

Funding for the Department is both state and federal. Federal Block Grants are used to fund many of the Health Department programs, but specific federal grants are also employed (e.g., Drinking Water Program). Funding for the Radiation Control Agency is 22% federal and 78% state and has the services of one assignee from the Bureau of Radiological Health.

Under the Radiation Control Act, a Radiation Advisory Commission consisting of 11 members was established. The commission members are appointed by the Director of Health and include persons representing engineering, diagnostic radiology, nuclear medicine, dentistry, veterinary medicine, industrial radiation protection, and radiologic technology. Appendix III lists the membership of the present commission. It is the duty of the commission to advise the Agency on technical matters relating to radiation. The Radiation Control Agency has authority to regulate the use of all sources of ionizing radiation, except those which it may exempt or are under the jurisdiction of the Federal Government. A chart showing the organization of the Radiation Control Agency is shown in Appendix II.

All members of the Agency have experience in health physics and have specialized training in this field. Professional staff including both new personnel and existing personnel will attend NRC training courses to attain and maintain a high level of technical competency. Members also have experience in operating laboratory and survey equipment. Responsibilities, job descriptions, background, and experience of radiation control personnel are given in Appendix IV.

The Supervising Radiation Control Specialist in charge of the Radioactive Materials Section will be responsible for licensing, inspections, investigations into incidents, and response to emergencies involving radioactive materials. It is anticipated that he will spend half of his time on the agreement program. The Administrator of the Radiation Control Agency (the Chief of the Division of Occupational Health and Radiation Control) will review and sign licenses and will review all inspection reports. His time on the agreement program will amount to a tenth of a man-year. Other members of the Radiation Control staff will also participate in the agreement program such that the total staff commitment will be one man-year. These breakdowns are further quantified in the budget contained in Appendix VII.

Rhode Island is an OSHA Consultation State and not an Enforcement State; therefore, it is not anticipated that the activities of the Occupational Health Section will impact on the Radioactive Materials Section.

SCOPE OF ACTIVITIES

The Radiation Control Agency administers the regulatory program associated with licensing of radioactive materials and registration of radiation-producing machines, environmental surveillance, special projects, and response to emergency situations involving sources of radiation. Chapters 18 and 18A of the state health plan, included in Appendix IX, detail the objectives and methods of the Division.

Within the State of Rhode Island there are 1,520 registered x-ray machines: 827 dental units, 631 medical units, and 62 industrial x-ray units. The number of NRC licenses within the State of Rhode Island as of December 31, 1978 was 49.

It is anticipated that the State will assume approximately 45 of these licenses. The number of facilities using radium sources is estimated at 10, and most of these are hospitals presently under NRC license. Three linear accelerators are in use for radiation therapy, and three small particle accelerators are in use at local universities.

REGULATORY PROCEDURES AND POLICY

LICENSING AND REGISTRATION

The Radiation Control Act requires licensing of all radioactive materials and registration of all radiation-producing machines except such sources as may be specifically exempted by regulations. License fees will be charged in accord with the schedule contained in Appendix III.

Licensing procedures, as provided in Parts A and C of the Rhode Island Rules and Regulations for the Control of Radiation, are consistent with those of the NRC. The license applications and form contained in Appendix V will be used in conjunction with Licensing and Regulatory Guides provided by the NRC.

General licenses are provided by regulation without filing an application with the Agency or the issuance of a licensing document. General licenses will be issued for specified materials under specified conditions when it is determined that the issuance of specific licenses is not necessary to protect the public and occupational health and safety. Specific licenses or amendments thereto will be issued upon review and approval of an application. A specific license will be issued only to named persons or facilities under the supervision of named persons and will incorporate appropriate conditions and expiration date. Pre-licensing inspections will be conducted when appropriate.

The Agency will request the advice of the Radiation Advisory Commission, or appropriate members thereof, with respect to any matter pertaining to a medical license application, or to criteria for reviewing applications.

All applications for non-routine medical uses of radioactive materials will be referred to the Radiation Advisory Commission for advice and consultation. Appropriate research protocols will be required as part of an application. The Agency will maintain knowledge of current developments, techniques, and procedures for medical uses applicable to the licensing program through continuing contact and information exchange with the NRC, other agreement states, and the medical profession.

The registration program for radiation-producing machines will continue, and the use of naturally occurring and accelerator produced radionuclides will now be licensed.

INSPECTION

The Agency is presently initiating an inspection and compliance program for x-ray equipment registrants which is similar to the proposed inspection and compliance program for radioactive materials.

Inspections for the purpose of evaluating radiation safety and determining compliance with appropriate regulations and provisions of licenses will be

conducted as scheduled or in response to requests or complaints. Inspection frequency will be based upon the extent of the potential hazard and experience with the particular facility. Inspection priorities may be changed on a case-by-case basis consistent with current NRC practices. It is anticipated that state inspections of licensed facilities will be conducted in accordance with a priority schedule similar to that shown as follows:

PRIORITY	TYPE OF LICENSE	INSP. FREQUENCY
I	Broad Medical Broad Academic Industrial Radiography	6 mos. or less
II	Industrial	1 yr. or less
III	Academic Medical Civil Defense	1 yr. or less
IV	Limited Medical Limited Industrial	2 yrs. or less
V	Generally Licensed Devices	As required

Inspections will be made by pre-arrangement with the licensee or may be unannounced as the agency determines to be most constructive. Written inspection procedures provided by the NRC will be followed in conducting the inspections and preparing reports.

The Rhode Island Radiation Control Agency has personnel trained in regulatory practices and procedures. Additionally, Agency personnel have accompanied NRC compliance inspectors on field inspections to gain a higher degree of competence in evaluating radiation safety and determining compliance with appropriate regulations and license provisions. Inspections will include the observation of pertinent facilities, operators, and equipment; a review of pertinent records and of radioactive materials -- all as appropriate to the scope of the activity, conditions of the license and applicable regulations. In addition, independent measurements will be made, as appropriate.

At the start and conclusion of an inspection, personal contact will be made at management level whenever possible. Following the inspection, results will be discussed with management. Prompt investigations and reports will be made of all reported or alleged incidents to determine the cause, the steps taken for correction, and the prevention of similar incidents in the future.

COMPLIANCE AND ENFORCEMENT

Compliance with regulations and license conditions will be determined by inspections and evaluation of inspection reports. When there are items of non-compliance, the licensee or registrant will be informed at the time of inspection as follows:

1) When the items are minor and the licensee or registrant agrees at the time of inspection to correct them, written inspection findings will be prepared which will list the items of non-compliance, confirm any corrections made during the inspection,

and require acknowledgement by the person interviewed. The licensee or registrant will be informed that a review of any corrective action items will be conducted at the time of the next regular inspection or by a reinspection.

2) When the non-compliance is considered serious, the person interviewed will be informed at the time of inspection. Written inspection findings will be sent to the licensee or registrant which will list the items of non-compliance and require a response within 20 days including proposed corrective action and an estimated date of completion of the corrective action.

3) If no reply is received to the initial letter within the specified time, a Notice of Violation is issued. This Notice of Violation, mailed to management, will require a written Consent Agreement including proposed corrective action and an estimated date of completion of the corrective action. If considered appropriate, an unannounced reinspection will be made shortly after the estimated date of completion.

4) Continued non-compliance as determined by the reinspection or by failure to reply within 10 days of the Notice of Violation will necessitate an Order of Abatement from the Agency. Such formal proceedings will follow the procedures contained in A.7.2 of the Rules and Regulations for the Control of Radiation.

The Agency uses its best efforts to attain compliance through cooperation and education prior to initiating formal legal procedures such as the Notice of Violation and Order of Abatement.

Upon request by a licensee, or upon the determination by the Agency, the terms and conditions of a license may be amended, consistent with the Act or regulations, to meet changing conditions in operations or to remedy technicalities of non-compliance.

EFFECTIVE DATE OF LICENSE TRANSFER

Any person who possesses a license for agreement materials issued by the NRC, on the effective date of the agreement with the NRC, shall be deemed to possess a like license issued by the Agency, which shall expire either 90 days after the receipt from the Agency of a notice of expiration of such license, or on the date of expiration specified in the federal license, whichever is earlier.

ADMINISTRATIVE PROCEDURES AND JUDICIAL REVIEW

The basic standards of procedures for administrative agencies in the State of Rhode Island are set forth in 42-35 of the General Laws of Rhode Island found in Appendix I. The Agency shall follow this law and the Radiation Control Act with respect to hearings, issuance of orders, and judicial review of findings.

COMPATIBILITY AND RECIPROCITY

In promulgating the present Rules and Regulations for the Control of Radiation, the Agency has, insofar as practicable, maintained compatibility with NRC and agreement state regulations; has avoided requiring dual licensing and has provided for reciprocal recognition of other agree states and federal licenses.

Through these regulations the State has adopted radiation protection standards and will strive to maintain compatibility with NRC and other Agreement States. The Agency will also cooperate with NRC and other Agreement States in interchanging information and statistics relating to control of radioactive materials.

COORDINATION WITH THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

The Department of Environmental Management is the department responsible for environmental protection within the state. The state laws governing hazardous waste, air pollution, and water pollution are included in Appendix I, and the memoranda of understanding from the three divisions involved are contained in Appendix X.

The Division of Land Resources will not issue a permit for a low level radioactive waste burial site until a license has been issued by the Radiation Control Agency. Presently the Division of Air Resources does not have any air quality standards for radioactive air pollutants, and in the absence of any guidance from the United States Environmental Protection Agency (EPA), the division does not plan to regulate such materials.

The Division of Water Resources does not issue EPA water discharge permits, but they do certify the adequacy of the applications. In their review they will assure that all discharges meet the standards contained in Appendix A, Table II, Column II of the Rhode Island rules and regulations.

RADIATION LABORATORY SERVICES

The Radiation Control Agency has the capability of evaluating samples collected during routine inspections and for making independent measurements. In addition to the survey instruments listed in Appendix VI, the Division has a large variety of air-sampling equipment for industrial hygiene surveys including portable air sampling pumps for filters and charcoal cartridges, smoke tubes, and a velometer. If the need for a neutron survey meter arises, one can be borrowed from the University of Rhode Island. All survey instruments used for inspection and emergency response will be calibrated quarterly as per NRC State Agreements - Division III Information Notice H.2.

The Division of Laboratories has capabilities of gamma spectroscopy and gross alpha-beta counting of environmental samples. For more sophisticated non-routine evaluations, samples will be sent to the EPA lab in Montgomery, Alabama.

EMERGENCY RESPONSE

The Rhode Island Radiation Control Agency has technically trained personnel and specialized equipment to investigate and evaluate incidents involving ionizing radiation. The Agency continues to prepare for such response by providing the following:

1) trained staff for advisement required to meet any given situation;

2) trained and equipped staff for emergency field activities;

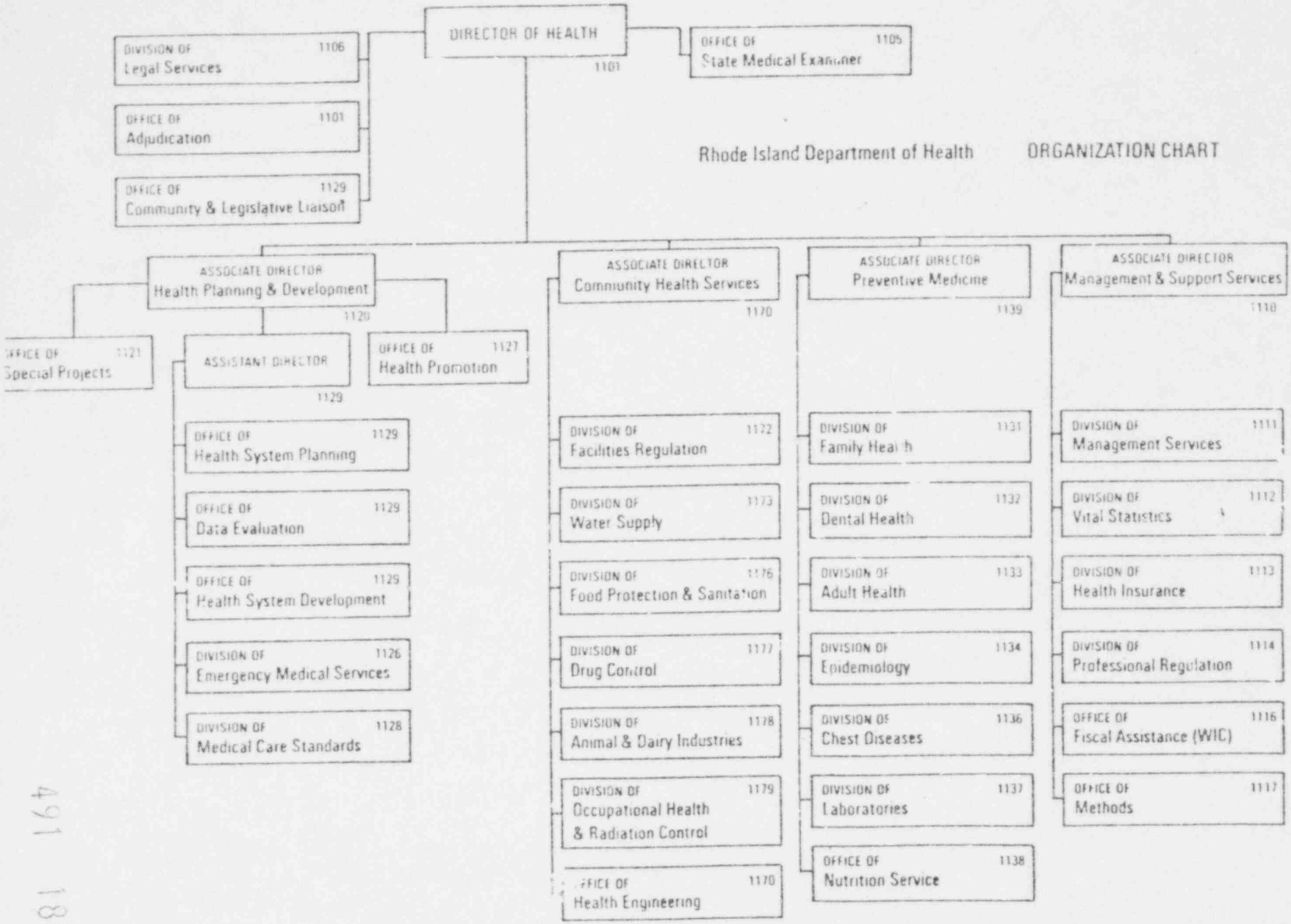
3) transportation by automobile to site of incident;

4) established liason with appropriate NRC and DOE Operations Offices; and

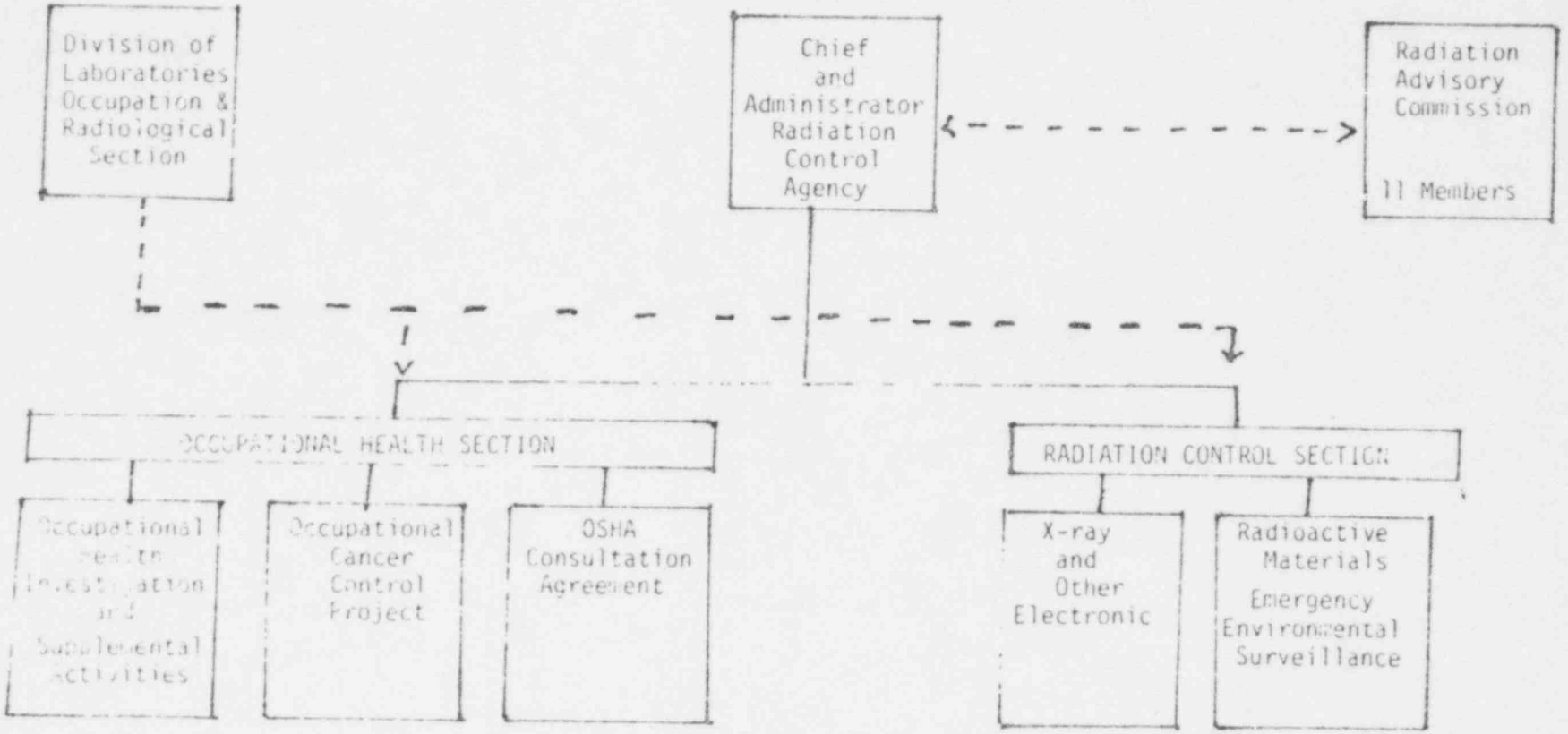
5) training to key personnel of other state/local agencies.

Radiological assistance in the form of monitoring, liason with appropriate authorities, and recommendations for area security and cleanup are provided by the Agency. The contamination guides used by the Agency are in Table III of the Protective Action Guides contained in Appendix XI. All Agency personnel will be maintained at an operation-ready level of training. Part of this training will be provided through cooperation of the NRC in Las Vegas, Nevada.

The Annex C Nuclear Accident or Incident Control Plan presently being revised by the State Civil Defense Preparedness Agency (DCPA) is included in Appendix XI. This plan addresses both transportation accidents and off-site releases from fixed facilities. It requires that the State Police first notify DCPA which in turn notifies the Radiation Control Agency. It is the responsibility of the Agency to advise the DCPA the extent of the hazard to the public health and safety and recommend protective actions as necessary. All licensees will be given copies of the plan and instructed in proper reporting of incidents which occur outside of their facility.


DIRECTOR OF HEALTH
1101
DIVISION OF Legal Services 1106
OFFICE OF Adjudication 1101
OFFICE OF Community & Legislative Liaison 1129
OFFICE OF State Medical Examiner 1105
Rhode Island Department of Health ORGANIZATION CHART
ASSOCIATE DIRECTOR Health Planning & Development 1120
OFFICE OF Special Projects 1121
ASSISTANT DIRECTOR 1129
OFFICE OF Health Promotion 1127
OFFICE OF Health System Planning 1129
OFFICE OF Data Evaluation 1129
OFFICE OF Health System Development 1129
DIVISION OF Emergency Medical Services 1126
DIVISION OF Medical Care Standards 1128
ASSOCIATE DIRECTOR Community Health Services 1170
DIVISION OF Facilities Regulation 1172
DIVISION OF Water Supply 1173
DIVISION OF Food Protection & Sanitation 1176
DIVISION OF Drug Control 1177
DIVISION OF Animal & Dairy Industries 1178
DIVISION OF Occupational Health & Radiation Control 1179
OFFICE OF Health Engineering 1170
ASSOCIATE DIRECTOR Preventive Medicine 1139
DIVISION OF Family Health 1131
DIVISION OF Dental Health 1132
DIVISION OF Adult Health 1133
DIVISION OF Epidemiology 1134
DIVISION OF Chest Diseases 1136
DIVISION OF Laboratories 1137
OFFICE OF Nutrition Service 1138
ASSOCIATE DIRECTOR Management & Support Services 1110
DIVISION OF Management Services 1111
DIVISION OF Vital Statistics 1112
DIVISION OF Health Insurance 1113
DIVISION OF Professional Regulation 1114
OFFICE OF Fiscal Assistance (WIC) 1116
OFFICE OF Methods 1117

DIVISION OF OCCUPATIONAL HEALTH AND RADIATION CONTROL



26 April 1979

DIVISION OF OCCUPATIONAL HEALTH AND RADIATION CONTROL

Radiation Personnel (Current)

Name	Title	Duty Assignment
James E. Hickey	Chief, Division of Occupational Hlt. & Radiation Control	Overall administration & supervision of division activities, Administrator of Radiation Control Agency.
X-Ray and Electronic Products Control		
*Charles V. McMahon	Supervising Radiation Control Specialist	Supervisor, x-ray compliance and other electronic product programs.
Robert T. Watkins	Supervising Radiation Control Specialist	Assist Chief and Supervisor in implementation of Radiation Control Program element.
John L. Ferruolo	Radiation Control Specialist	Specialist, x-ray compliance and other electronic product programs.
James B. Gamelin	Radiation Control Specialist	Specialist, x-ray compliance and other electronic product programs.
Radioactive Materials, Emergency Response, and Environmental Matters		
*James L. Nolan	Supervising Radiation Control Specialist	Supervisor, Radioactive Materials Control Program; environmental surveillance; and emergency response.
Louis Geremia	Radiation Control Technician	Assist with environmental and emergency response activities.

* Indicates Section Supervisor for purposes of division procedures.

CURRICULUM VITAE

JAMES E. HICKEY

206 Cannon Building
Davis Street
Providence, RI 02908

Telephone: 277-2438

PRESENT POSITION

Chief, Division of Occupational Health and Radiation Control

Rhode Island Department of Health

ACADEMIC QUALIFICATIONS

Providence College	1962	B.S. Chemistry
Harvard School of Public Health	1968	M.S. Occupational & Radiological Health

ACADEMIC APPOINTMENT

Brown University — Clinical Instructor in Community Health, Division of Biology and Medicine

PROFESSIONAL EXPERIENCE

1963-1965	U.S. Army, Europe	Medical Administrative Officer
1965-1968	R.I. Hospital & R.I. Department of Health	Chemist
1968-present	R.I. Department of Health, Occupational & Radiological Health Program	Health Specialist & Program Administrator

PROFESSIONAL CERTIFICATION

COMPREHENSIVE PRACTICE OF INDUSTRIAL HYGIENE by The American Board of Industrial Hygiene - 1973

PROFESSIONAL ASSOCIATIONS

American Industrial Hygiene Association
American Conference of Governmental Industrial Hygienists
American Academy of Industrial Hygiene
National Conference of Radiation Control Program Directors
Health Physics Society

PUBLICATIONS

Travis, K. and Hickey, J.E., "A State Program for Reducing Radiation Exposure from Dental X-ray Machines," A.J.P.H., 60: 1522-1527 (Aug., 1970).

Hickey, J.E. and Wuraftic, J., "Report on Rhode Island X-ray Exposure Card Survey - 1973," R.I. Dental J., Page 10-12 (March 1976).

Hickey, J.E., "Patient Exposure During Diagnostic X-ray Procedures in Rhode Island," R.I. Medical J., 61:300-306 (August 1978).

James E. Hickey

Short Courses Pertinent to Agreement State Program

Radionuclide Analysis by Gamma Spectroscopy - DHEW, PHS, BRH, November 1966, Rockville, Maryland.

State Emergency Planning in Relation to Licensed Nuclear Facilities - USAEC, March 1973, Brookhaven, New York.

Orientation in Regulatory Practices and Procedures - USNRC, September 1976, Bethesda, Maryland. Ten days

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RESUME

January 1979

James L. Nolan
16 Glendale Avenue
Providence, RI 02906
401/521-9539

Age: 29
5'10", 150 lbs.
Single
Excellent Health

EDUCATION:

Undergraduate:

Brown University
Providence, RI
September 1967 - June 1971
Sc.B. in Environmental Engineering

Graduate:

Fordham University School of Law
New York, NY
September 1971 - June 1972
No Degree

University of Washington
Seattle, WA
September 1976 - August 1977
MSE in Air Resources Engineering

Special Courses:

USEPA, Research Triangle Park, NC

"Source Sampling for Particulate Pollutants"
September 10-13, 1972

"Air Pollution Meteorology"
November 12-16, 1973

"Diffusion of Air Pollution - Theory and Applications"
March 18-22, 1974

"Air Quality Monitoring Systems"
December 9-13, 1974

"Statistical Evaluation of Air Pollution Data"
April 5-8, 1976

USNRC

"Ten Week Health Physics and Radiation Protection Course"
Oak Ridge Associated Universities, Oak Ridge, TN
February 6 - April 14, 1978

"Medical Use of Radionuclides for State Regulatory Personnel"
Baylor College of Medicine
Houston, TX
May 1-5, 1978

"Orientation Course in Regulatory Practices and Procedures"
Nuclear Regulatory Commission
Silver Spring, MD
September 11-22, 1978

"Radiological Emergency Response Operations"
Las Vegas, Nevada
November 28 - December 8, 1978

WORK EXPERIENCE:

Air Pollution Control Engineer
Rhode Island Department of Health
Division of Air Pollution Control

June 1972 - August 1975: My initial assignment with the Division of Air Pollution Control was the enforcement of particulate emissions regulations. This included surveying the potential sources of particulate emissions and determining the status of compliance of such sources. Sources which were not in compliance were issued abatement orders, and it was my responsibility to recommend acceptable types of control equipment, review permit applications for the installation of control equipment, monitor the progress of construction, testify in legal proceedings as an expert witness and supervise the stack sampling to assure compliance with the regulations.

August 1975 - January 1978: My job in the Air Quality Management Section was to supervise the redesign of the air quality monitoring network, evaluate air quality data and propose new or modified regulations as necessary to attain the Ambient Air Quality Standards. In this effort we used meteorological modeling to reduce the total number of SO_2 and TSP sites and yet improve our understanding of the spatial extent of these two pollutants. We began monitoring CO and O_3 for the first time and documented air quality violations of both standards. We developed regulations for the control of hydrocarbons from stationary sources to reduce the O_3 levels; we cooperated with the Rhode Island Department of Transportation by performing CO modeling to evaluate the alternatives they had designed to attain the CO standard. We also instituted a number of special air monitoring programs not required by the USEPA such as sulfates, organic and elemental carbon particulates, dichotomous sampling of total particulates with elemental analysis by X-ray fluorescence spectroscopy and scattering coefficient for visibility. It was primarily as a result of these special projects that I became interested in atmospheric aerosols and chose to do my graduate work in atmospheric chemistry at the University of Washington.

Supervising Radiation Control Specialist
Rhode Island Department of Health
Division of Occupational Health and Radiation Control

January 1978 - Present: My present responsibilities include administration of the proposed Agreement States program for Rhode Island, participation as a Health Physicist on the State emergency response team and supervision of the radiological environmental monitoring program. The Agreement State program in Rhode Island is not large with presently only 40 some odd licensees therefore the radioactive materials section has also been assigned the task of inspecting both analytical and industrial x-ray machines. The environmental monitoring program includes air sampling as well as the radiological aspects of the Safe Drinking Water regulations. Since elevated levels of Radium-226 are commonly found in waters from drilled wells in Rhode Island the drinking water program has dominated our environmental effort recently.

SOCIETY MEMBERSHIPS:

Air Pollution Control Association
American Association for the Advancement of Science
American Chemical Society
Americal Meteorological Society
Conference of Radiation Control Program Directors
Health Physics Society

COMMITTEES:

NARM Task Force of the Conference of Radiation Control Program Directors

PUBLICATIONS:

"Meteorological Factors Controlling Photochemical Pollutants in Southeastern New England," International Conference on Photochemical Oxidant Pollution and Its Control Proceedings, Vol. I, EPA-600/3-77-001a, January 1977.

"Measurement of Light Absorbing Aerosols from Combustion Sources," MSE Thesis, University of Washington, Seattle, WA, 1977.

"Measurement of Light Absorbing Aerosols from Combustion Sources," Proceedings of the Conference on Carbonaceous Particles in the Atmosphere, Lawrence Berkeley Laboratory, Berkeley, CA, March 20-22, 1978.

RADIATION ADVISORY COMMISSION MEMBERS

CATEGORY	NAME AND ADDRESS	TERM*	COMMENTS
1). R.I.A.E.C.	A. Francis DiMeglio R.I. Nuclear Science Center South Ferry Road Narragansett, RI 02882 Tel. 789-9391	4 yrs.	Designee of R.I.A.E.C.
2) Physical Science or Engineering	Dr. Colin Orton Dept. of Radiation Oncology Rhode Island Hospital 593 Eddy Street Providence, RI 02902 Tel. 277-8311	4 yrs.	Radiological Physicist affiliated on full-time basis with voluntary non-profit hospital.
3) Diagnostic Radiology	Dr. James B. Leach Chief of Radiology Woonsocket Hospital 115 Cass Avenue Woonsocket, RI 02895 Tel. 767-3211	3 yrs.	Designee of Society
4) Nuclear Medicine	Dr. Sanford C. Spraragen Miriam Hospital 164 Summit Avenue Providence, RI 02906 Tel. 274-3700, Ext. 286	3 yrs.	Designee of Society
5) Dentistry and Chairmanship	Dr. Joseph A. Yacovone R.I. Department of Health Division of Dental Health 75 Davis Street Providence, RI 02908 Tel. 277-2588	4 yrs.	
6) Veterinary Medicine	Dr. John Flinton 750 Boston Neck Road Narragansett, RI 02882 Tel. 783-5250	3 yrs.	Designee of Society
7) Industrial Radiation Protection	Adrien R. Trudeau 8 Amos Street Peacedale, RI 02883 Tel. 203-446-2531	3 yrs.	Radiation Safety Officer for Electric Boat operation at Quonset.
8) Radiologic Technology	Charles Abate, R.T. 40 Hamlet Avenue Woonsocket, RI 02895 Tel. 766-4224	2 yrs.	Registered Technologist
9) Undesignated	Dr. Vincent W. DiSpigno 40 Shore Drive Johnston, RI 02919 Tel. 934-1932	2 yrs.	Nuclear Pharmacist

CATEGORY	NAME AND ADDRESS	TERM	COMMENTS
) Undesignated	Wayne Cotnoir '4 Sudbury Street North Providence, RI 02904 Tel. 456-4168	2 yrs.	Nuclear Medicine Designee of Society
) Undesignated	William Roventine Director of Radiological Physics Roger Williams General Hospital 825 Chalkstone Avenue Providence, RI 02908 Tel. 456-2471	2 yrs.	Radiological Physicist

erms started 25 March 1977.

INVENTORY OF RADIOLOGICAL HEALTH SURVEY EQUIPMENT

Name	Quantity	Manufacturer	Model	S/N	Range	Description
Nucor	1	Nuclear Corp. of America	CS40	1029	0-50,000 mR/hr	Portable; Ionization Chamber Beta; Gamma
Panoramic	1	Victoreen	470A	640.	Integrate: 0-1000 mR Rate: 0-1000 mR & R/hr	Portable; Ionization Chamber Alpha; Beta; Gamma; X-ray
Transistor Survey Meter	2	Nuclear Chicago	2650	504 756	0-150,000 CPM 0-100 mR/hr	Portable; Geiger Mueller Alpha; Beta; Gamma
Scintillation Alpha Counter	1	Eberline	PAC-1SAG	122	Gamma: 0-2 R/hr Alpha: 0-2,000,000 CPM	Portable; Scintillation & G.M. tube; Alpha; Gamma
Cutie Pie Survey Meter	1	Nuclear Chicago	2586	871	Integrate: 0-25 mR Rate: 0-2500 mR/hr	Portable; Ionization Chamber; Beta; Gamma; X-ray
*MDH 1015 X-ray Monitor	1	MDH-Ind.	1015	1341	1 mR/min-650 R/min 0.02 mR-99.9R 1 mR-13R 1 MS-99.9S	Portable; Ion Chamber; X-ray & Time 10 x 5 -6 Chamber. On loan for BENT study
*Microline Electro-Magnetic Meter	1	NARDA Microwave Corp.	8100	2112	0-200 mW/cm^2	Portable; Microwave Radiation Monitor. On loan from FDA
Victoreen R-Meter	2	Victoreen Inst. Corp.	570	938 689	0-25R	Portable Ion Chambers 1 - 5R Chamber 1 - 10R Chamber 2 - 2.5R Chambers 3 - .25R Chambers 4 - 25R Chambers
*Dosimeter Charger LED's	1	Dosimeter Corp. of America	---	01741 702018 6C7074 701046 701041	0-200 mR 0-200 mR 0-1.2R 0-5R 0-5R	Portable Dosimeter Charger & LED's
*Dosimeter Charger/Reader	1	Stephen	---	2018525	---	Additional LED Reader/Charger

*Equipment on loan from federial government

*Dosimeter Charger/Reader & LED's	1	Capintec	189 CAT 6	H72-5843 E71-4579	0-2R 0-0.2R	Portable Dosimeter Charger/ Reader & LED's
*X-ray Chronometer	1	Machlett	XRC 1016	---	---	Portable Chronometer; Time & Pulse. On loan from FDA
Geiger Counter (LAB)	1	Eberline	E 120	---	0-70,000 CPM	Reader Beta, Gamma (portable
Pancake Detector Geiger Counter (LAB)	1	Amperex	18546	---	0-70,000 CPM	Pancake Detector, Geiger Mue Beta Radiation Counter (port
Proportional Counter (LAB)	1	Nuclear Measurements Corp.	PCC 11 T DS 1 T	---	Alpha- 0.1-10^6 CPM Beta- 20-10^6 CPM	Internal Proportional Counte (Decade Scaler)
Beta Counter (LAB)	1	Tracer Lab	SC 250	---	---	Lo Background Beta Counter
Gamma Spectrometer (LAB)	1	Technical Meas. Corp.	---	---	Tolerance to high count rate 50,000 pps	Gamma Spectrometer
Victoreen Civil Defense Radiation Survey Meter	2	Victoreen	1A	282115 277197	0-500 R/hr.	Portable Ion Chamber; Gamma
Victoreen Civil Defense Radiation Survey Meter	1	Victoreen	6B	129028	0-50 mR/hr 0-30,000 CPM	G.M. Tube Portable, Beta; Gamma
Dosimeter Charger/Reader	1	Victoreen	5B	56782	---	Portable Charger/Reader
Dosimeter	1	Bendix	---	C0123098 E0553307	0-200R	----
Geiger Counter	1	Eberline Inst. Corp.	E-120	6875	50 mR/hr 70K CPM	Geiger Counter and Hand Prob Beta and Gamma HP 270 Alpha Beta Gamma HP 190 Skl Chirper

*Equipment on loan from federal government

DH 1015 -ray Monitor	1	MDH Ind.	1015	1384	1 mR/min 650 R/min 0.02 mR-99.9 R 1 mR-13R 1ms - 99.9s	Portable Ion Chamber X-ray and time $10x5^{-6}$ Chamber S/N 3409
					1 mR/hr 650 R/hr .002mR-9.99R 1mR-0.433R 1ms-99.9s	Portable Ion Chamber X-ray and time 10x5-180 chamber S/N 5334
isconsin X-ray Test Cassette	1	Radiation Meas. Inc.	101	1456	60-120 kVP+	kVp and HVL measurement
upertech VI	1	Brice Kratzer	---	---	---	X-ray technique calculator
berline Personnel Radiation Monitor	1	Eberline Ins. Corp.	RT-1A	---	0.1 mR/hr-5000 R/hr	Pocket-sized radiation monitor with audible warning in gamma radiation fields (Halogen quenched geiger tube)
EW	1					Step wedge for darkroom fog study
EW	1 set					NEXT Equipment stand, filters and accessories
DA Compliance Test Kit	1					Items contained in kit are recorded on inventory record in file: MDH FDA COMPLIANCE