

ASSESSMENT

of the proposed

OKLAHOMA PROGRAM FOR THE REGULATION OF AGREEMENT MATERIALS¹

as described in the

Request for an Agreement

This assessment, prepared by the NRC staff, examines the proposed radiation control program of the State of Oklahoma with respect to the ability of the program to regulate the possession, use, and disposal of radioactive materials subject to the Atomic Energy Act of 1954 (Act), as amended. The assessment was performed using the criteria in the Commission's policy statement "*Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement*" (referred to below as the "criteria")² using an internal procedure developed by the Office of State and Tribal Programs. Each criterion, and the NRC staff's assessment related thereto, is addressed separately below.

OBJECTIVES

1. **Protection. A State regulatory program shall be designed to protect the health and safety of the people against radiation hazards.**

The proposed Oklahoma program for regulating agreement materials would be located within the existing Radiation Management Section of the Waste Management Division, an organizational unit of the Oklahoma Department of Environmental Quality (DEQ). The Department's Radiation Management Section (RAM) currently has responsibility for directing and managing a formal registration program that includes inspections and fees, for radioactive materials that occur naturally or are produced by particle accelerators, and industrial x-ray machines. Under the proposed Agreement, the section would also be given primary responsibility for licensing and inspection of by-product, source, and special nuclear materials (SNM). The DEQ also has responsibility for the regulation of machine produced radiation, and non-ionizing radiation. During discussions with the Program Manager, NRC was informed that the DEQ plans to implement a licensing program for radioactive materials that occur naturally in the future after the State assumes regulatory authority under the Agreement. The regulatory authority over the use of sources of radiation by diagnostic medical x-ray facilities remains with the Oklahoma Department of Health.

¹Agreement materials are those radioactive materials covered by the Act over which regulatory authority may be transferred to a State under the provisions of section 274, and the terms of the limited Agreement over which regulatory authority is transferred.

²NRC Statement of Policy published in the Federal Register January 23, 1981 (46 FR 7540-7546), a correction was published July 16, 1981 (46 FR 36969) and a revision of Criterion 9 published in the Federal Register July 21, 1983 (48 FR 33376).

Support to the RAM section would be provided by other DEQ sections for the management of low-level radioactive waste (LLW), and the laboratory analysis of radioactive material samples.

The authority to issue, suspend, or revoke licenses, and to issue orders or assess administrative fines is vested by law in the Director of the DEQ.

The NRC staff review verified that the Oklahoma program design for distributing regulatory responsibilities to the program staff is similar to designs used successfully in other Agreement States, and that all necessary program elements have been addressed. The staff concludes that the design of the proposed Oklahoma program for agreement materials satisfies the criterion.

References: *Program Narrative Description*, and *Organizational Charts of the Department of Environmental Quality Radiation Protection*, in the Request for an Agreement by Governor Keating.

RADIATION PROTECTION STANDARDS

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

The authority to promulgate rules for the control of exposure to sources of radiation is vested in the Environmental Quality Board of the Oklahoma DEQ by *Okla. Stat. Title 27A § 2-2-10(G)(2) and 2-2-101(H)* of the Oklahoma Environmental Quality Code. The NRC staff review verified that the Board has adopted, by reference, the relevant NRC regulations in 10 CFR Parts 19, 20, 30, 31, 32, 33, 34, 35, 36, 39, 40, 61, 70, 71, and 150 that were in effect on September 29, 2000, into Chapter 410-10 and 410-20 of the Oklahoma Administrative Code. The Oklahoma rules have the same applicability as the NRC regulations as to materials covered by the Agreement, except that the Oklahoma rules apply in addition to naturally occurring and accelerator-produced radioactive materials (NARM).

Oklahoma rule 252:410-10-2 adopts the NRC regulations, and specifies that references to the NRC shall be construed as references to the Executive Director of the DEQ. Oklahoma has adopted a provision in *OAC § 252:410-10-1(b)* that reserves jurisdiction for certain portions of these rules to NRC. The NRC staff concludes that Oklahoma will not attempt to enforce the regulatory matters reserved to the Commission. In accordance with NRC Management Directive 5.9, this approach is considered compatible.

The NRC staff concludes that the adoption by Oklahoma of the NRC regulations by reference satisfies the criterion.

References: Oklahoma Radiation Management Act at Okla. Stat. tit. 27A § 2-9-104(A); Oklahoma Environmental Quality Code at Okla. Stat. tit. 27A §§ 2-2-101(G)(2), 2-2-201(A)(4) and 2-3-101(B)(2); and Oklahoma Administrative Code § 252:410-10.

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 doses. 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.**

Oklahoma law requires the Environmental Quality Board to adopt rules that are compatible with the equivalent NRC regulations and that are equally stringent to, or to the extent practicable more stringent than, NRC regulations. The Board has adopted the NRC regulations in 10 CFR Part 20 that were in effect on September 29, 2000, by reference.

The NRC staff review verified that the resultant Oklahoma rules contain all of the provisions that are necessary in order to be compatible with the regulations of the NRC on the effective date of the Agreement between the State and the Commission. The adoption by reference assures the uniformity of standards.

The NRC staff concludes that the criterion is satisfied.

References: Oklahoma Administrative Code § 252:410-10-20.

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 NRC staff review verified that Oklahoma has adopted the NRC regulations in 10 CFR Part 20 by reference, including Subpart C, the occupational dose limits, and Subpart D, the dose limits for individual members of the public. Oklahoma licensees are required to consider the radiation doses to individuals from all sources of radiation, except background radiation and radiation from medical administrations. As in the case of NRC licensees, Oklahoma licensees are required to consider the radiation dose whether the sources are in the possession of the licensee or not.

The NRC staff concludes that the requirements of the criterion are satisfied.

Reference: Oklahoma Administrative Code § 252:410-10-20.

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.**

NRC requires surveys and monitoring pursuant to Subpart F of 10 CFR Part 20. The NRC staff review verified that Oklahoma has adopted Subpart F by reference. Therefore, Oklahoma licensees would be required to conduct surveys and personnel monitoring to the same standards as is required of NRC licensees.

The NRC staff concludes that the criterion is satisfied.

Reference: Oklahoma Administrative Code § 252:410-10-20.

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 NRC staff review verified that Oklahoma has adopted the NRC regulations in Subpart J of 10 CFR Part 20 by reference. Therefore, the radiation labels, signs and symbols, and the posting and labeling requirements in the Oklahoma rules are identical to those contained in the NRC regulations.

The NRC staff concludes that the required degree of regulatory uniformity is provided and this criterion is satisfied.

Reference: Oklahoma Administrative Code § 252:410-10-20.

7. Instruction. **Persons working in or frequenting restricted areas shall be instructed with respect to the health risks associated with exposure to radioactive materials and in precautions to minimize exposure. Workers shall have the right to request regulatory authority inspections as per 10 CFR 19, Section 19.16 and to be represented during inspections as specified in Section 19.14 of 10 CFR 19.**

The NRC staff review verified that Oklahoma has adopted the NRC regulations in 10 CFR Part 19 by reference, and the NRC staff concludes that the criterion is satisfied.

It is noted that the NRC regulations and definitions in 10 CFR Parts 19 and 20 have been amended since the Commission adopted the criteria. In particular, 10 CFR 19.12 was amended effective August 14, 1995 (60 FR 36038; July 13, 1995). Criterion number seven reflects, in part, the pre-amendment rule. In performing the review, NRC staff has considered the amended statement of the rule, which requires instruction to be provided to all individuals who, in the course of their employment, are likely to receive an occupational dose in excess of 100 millirem in one year, whether the dose is received in a restricted area or not. Since Oklahoma has adopted the current 10 CFR 19.12 by reference, the Oklahoma rule is compatible with the current NRC rule.

Reference: Oklahoma Administrative Code § 252:410-19.

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

The NRC staff review confirmed that Oklahoma has adopted Subpart I of 10 CFR Part 20 by reference. The NRC staff concludes that the criterion is satisfied.

Reference: Oklahoma Administrative Code § 252:410-20.

9. **Radioactive Waste Disposal. (a) Waste disposal by material users. The standards for the disposal of radioactive materials into the air, water and sewer, and burial in the soil shall be in accordance with 10 CFR Part 20. Holders of radioactive material desiring to release or dispose of quantities or concentrations of radioactive materials in excess of prescribed limits shall be required to obtain special permission from the appropriate regulatory authority.**

Requirements for transfer of waste for the purpose of ultimate disposal at a land disposal facility (waste transfer and manifest system) shall be in accordance with 10 CFR 20. The waste disposal standards shall include a waste classification scheme and provisions for waste form, applicable to waste generators, that is equivalent to that contained in 10 CFR Part 61.

The NRC staff review confirmed that Oklahoma has adopted Subpart K of 10 CFR Part 20 and Part 61 effective on October 19, 1998, by reference. The Oklahoma rules would thus impose the same waste disposal requirements, including waste classification and waste manifests, as the current NRC regulations. NRC staff concludes that criterion 9(a) is satisfied.

Reference: Sections 252:410-10-20 and 252:410-10-61 of the Oklahoma Administrative Code.

(b) Land Disposal of waste received from other persons. The State shall promulgate regulations containing licensing requirements for land disposal of radioactive waste received from other persons which are compatible with the applicable technical definitions, performance objectives, technical requirements and applicable supporting sections set forth in 10 CFR Part 61. Adequate financial arrangements (under terms established by regulation) shall be required of each waste disposal site licensee to ensure sufficient funds for decontamination, closure and stabilization of a disposal site. In addition, Agreement State financial arrangements for long-term monitoring and maintenance of a specific site must be reviewed and approved by the Commission prior to relieving the site operator of licensed responsibility (Section 151(a)(2), Pub. L. 97-425).

Oklahoma has requested authority under the proposed Agreement to regulate the disposal of LLW received from other persons at a land disposal site. The NRC staff review verified that Oklahoma has adopted rules equivalent to the regulations in 10 CFR Part 61 by reference.

The Oklahoma Radiation Management Act specifies at *Okla. Stat. tit. 27A § 2-9-104(A)* that Oklahoma rules regarding disposal of radioactive material, and the financial assurance for disposal must be “consistent with nationally-recognized standards.”

There is no existing LLW disposal facility in Oklahoma and there is no present plan to establish one. Oklahoma would develop any necessary detailed guidance if a facility is proposed. NRC staff concludes that the provisions of Oklahoma law and rules related to the management of LLW would provide the same protection as is provided by the

NRC requirements, and that the proposed Oklahoma program for the management of LLW received from other persons at a land disposal site would be compatible with the program of the Commission.

References: Sections 252:410-10-4 and 252:410-10-61 of the Oklahoma Administrative Code; and Okla. Stat. Tit. 27A Section 2-9-104A.

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. State regulations regarding transportation of radioactive materials must be compatible with 10 CFR Part 71.**

The NRC staff review verified that Oklahoma has adopted 10 CFR Part 71 by reference. Staff notes that Part 71 also contains requirements related to the licensing of packaging for use in transporting radioactive materials. As discussed in criterion 2, Oklahoma would not attempt to enforce portions of the regulation related to activities, such as approving packaging designs, which are reserved to NRC. Based on these considerations, the NRC staff concludes that criterion 10 is satisfied.

Reference: Oklahoma Administrative Code § 252:410-10-1 (b)(7); and Oklahoma Administrative Code § 252:410-10-71.

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 the employee's exposure to radiation; (e) at request of an employee advise the employee of his or her annual radiation exposure; and (f) inform each employee in writing when the employee has received radiation exposure in excess of the prescribed limits.**

The NRC staff review verified that Oklahoma has adopted 10 CFR Parts 19, 20, 30, 31, 32, 33, 34, 35, 36, 39, 40, 61, 70, 71, and 150 by reference. The records and reports referenced in criterion 11 are regulatory requirements of these Parts. The proposed Agreement transfers a subcategory of limited source material used to take advantage of its density and high mass properties where the use of the specifically licensed source material is subordinate to the primary specifically licensed use of either 11e.(1) byproduct material or SNM. NRC staff concludes that by adopting the regulations, Oklahoma has adopted the reporting and recordkeeping requirements, and criterion 11 is satisfied.

Reference: Oklahoma Administrative Code § 252:410-1-4 and 252:410-10.

12. Additional Requirements and Exemptions. **Consistent with the overall criteria here enumerated and to accommodate special cases and circumstances, the State 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 NRC staff review confirmed that Oklahoma State law provides the radiation control program authority to impose, by order or license condition, additional health and safety requirements beyond the requirements specified in law and the rules. The program also has the legal authority to grant reasonable and necessary exceptions to the regulatory requirements, either by order or license condition. Oklahoma has adopted 10 CFR 30.34, *Terms and conditions of licenses*, by reference.

NRC staff concludes that the criterion is satisfied.

References: Oklahoma Revised Code § 252:410-1-3 and -10.

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 State 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 pre-evaluation 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 State regulatory authority may wish to provide a means for authorizing broad use of materials without evaluating each specific use.**

Since Oklahoma has adopted the current NRC regulations by reference, the Oklahoma regulatory requirements for issuing a license would be the same as those of NRC.

The NRC staff review verified that the Oklahoma rules provide that a license authorizing the distribution of agreement materials that will subsequently be exempt from regulatory control may be issued only by the NRC.

Since criterion nine was adopted, the Commission has determined that the regulatory authority to conduct safety evaluations of sealed sources and devices may be retained by the NRC, unless the State requests assumption of the authority and has in place an adequate and compatible program to implement the authority. Oklahoma has decided not to seek authority for evaluation of sealed sources.

The NRC staff concludes that the Oklahoma program meets the requirements of criterion 13.

References: Oklahoma Administrative Code § 252:410-10-30, -40 and -70; *Oklahoma Program for the Licensing of Radioactive Materials*, in the Request for an Agreement by Governor Keating.

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. States should develop guidance documents for use by license applicants. This guidance should be consistent with NRC licensing and regulatory guides for various categories of licensed activities.**

The NRC staff review determined that the Oklahoma licensing procedure's manual addresses the specific elements listed in the criterion. The Oklahoma licensing procedures are similar to NRC licensing procedures. The NRC staff review confirmed that the DEQ RAM section has procedures for the processing of applications for licensing. The procedures specify the actions to be accomplished, identify (by position) the staff responsible for accomplishing the actions, and identify resources such as forms and guides to be used. The procedures cover the processing actions from the response to the first contact by the applicant, to the delivery of the signed license. The procedures include a mechanism for tracking the overall progress of an application, and a docket numbering system to identify documents associated with the application. Staff concludes that the procedures provide reasonable confidence that the regulatory requirements would be met, or, where appropriate, exceptions granted.

Oklahoma has adopted NRC guidance documents, including forms, standard licensing conditions, and standard deficiency paragraphs.

NRC staff concludes that the criterion is satisfied.

Reference: *Oklahoma Program for the Licensing of Radioactive Materials*, Section 3 in the Request for an Agreement by Governor Keating.

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 NRC staff review verified that Oklahoma has adopted 10 CFR Part 35 by

reference. The NRC training and experience requirements for persons to be licensed for the use of agreement materials on or in humans are specified in Part 35. NRC staff concludes that Oklahoma rules specify the same requirements.

Reference: Oklahoma Administrative Code § 252:410-10-35.

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 performance 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 NRC staff review confirmed that the Oklahoma program has statutory authority to conduct inspections of licensees. Oklahoma has adopted 10 CFR Part 30, 32, 40, and 70, containing provisions relating to inspections and tests, by reference.

The program has also adopted a schedule for the inspection of licensees at least as frequently as the schedule used by NRC. The procedures also cover the conduct of inspections, and specify the actions to be accomplished and identify (by position) the staff responsible for accomplishing the actions. The scheduling procedures address prioritizing licenses due for inspection and provides flexibility for the optimization of inspection related travel. These provisions are similar to those in NRC procedures.

The NRC staff concludes that the criterion is satisfied.

References: Oklahoma Administrative Code § 252:410-10-30; and the *Inspection Program for Radioactive Materials*, Section 4 in the Request for an Agreement by Governor Keating.

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

The NRC staff review confirmed that Oklahoma law provides authority for Oklahoma radiation control program inspectors to enter public or private property at all reasonable times, for the purpose of determining compliance with the law and rules.

Reference: Oklahoma Radiation Management Act at Okla. Stat. tit. 27A § 2-9-103(A) and § 2-9-104(A)(1998 Supp.); Oklahoma Environmental Quality Code at Okla. Stat. tit. 27A §§ 2-3-202(A)(1),(3) and (4), and §§ 2-3-501(A) and (C) (1998 Supp.).

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.**

The NRC staff review determined that Oklahoma has adopted procedures to convey a copy of the formal inspection report to the licensees, both when violations are found, and when no violations are found. The procedures identify (by position) the staff responsible and specify the time limit for preparing the inspection report, the process for management review and approval, and provide instructions for distribution of the report to the licensee and to the State's official files.

The NRC staff concludes that the criterion is satisfied.

Reference: Oklahoma *Inspection Program for Radioactive Materials*, in the Request for an Agreement by Governor Keating.

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 NRC staff review confirmed that the Oklahoma program is authorized by law to enforce the State rules using a variety of sanctions, including the imposition of administrative fines and the issuing of orders to suspend, modify or revoke licenses, or to impound materials. The program may seek restraining orders, civil penalties, and criminal sanctions with the assistance of the attorney general.

The program has adopted policies and procedures to implement the enforcement authority. The Oklahoma enforcement procedures are similar to the NRC enforcement procedures with respect to classifying the severity of violations. The DEQ has established a system for tracking outstanding enforcement actions, and has also established standardized format letters and documents.

The NRC staff concludes that the criterion is satisfied.

References: Oklahoma Radiation Management Act at Okla. Stat. tit. 27A § 2-9-103(A) (1998 Supp.); Oklahoma Hazardous Waste Act at Okla. Stat. tit. 27A § 2-7-107(B) (1998 Supp.); and the Oklahoma Environmental Quality Code at Okla. Stat. tit. 27A § 2-3-202(A)(10), § 2-3-502, and § 2-3-504 (198 Supp.); Oklahoma Administrative Code § 252-2-11; NUREG-1600, NRC Enforcement Manual; and the *General Statement of Policy Enforcement Actions*, in the Request for an Agreement by Governor Keating.

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. This requires competency to evaluate various potential radiological hazards associated with the many uses of radioactive material and includes concentrations of radioactive materials in air and water, conditions of shielding, the making of radiation measurements, knowledge of radiation instruments--their selection, use and calibration--laboratory design, contamination control, other general principles and practices of radiation protection, and use of management controls in assuring adherence to safety procedures. In order to evaluate some complex cases, the State regulatory staff may need to be supplemented by consultants or other State agencies with expertise in geology, hydrology, water quality, radiobiology and engineering disciplines.**

To perform the functions involved in evaluation and inspection, it is desirable that there be personnel educated and trained in the physical and/or life sciences, including biology, chemistry, physics and engineering, and that the personnel and have had training and experience in radiation protection. For example, 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 desirable that such a person have a bachelor's degree or equivalent in the physical or life sciences, and specific training - 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. These trainees, of course, could be used initially to evaluate and inspect those applications of radioactive materials which are considered routine or more standardized from the radiation safety standpoint, for example, inspection of

industrial gauges, small research programs, and diagnostic medical programs. 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.

Based on the review of the staffing analysis, organizational charts and position descriptions for the Oklahoma program, the curricula vitae for the current program staff members, experience and training, the NRC staff concluded that the DEQ's overall staffing plan provides a sufficient number of qualified technical staff.

1. Assessment of the Agreement Materials Staffing Plan

There are approximately 235 NRC licenses in Oklahoma, of which NRC staff estimates about 220 would become Oklahoma licensees under the proposed Agreement.

The Oklahoma program staff would regulate a total of approximately 220 specific Agreement material licenses. Although, DEQ has conducted a registration program for NARM material since its inception in 1993, the State has not implemented a NARM licensing program. Therefore, Oklahoma will not have any additional licenses to add or convert at this time. During discussion with the Program Manager, NRC was informed that the State plans to implement a NARM licensing program in the future. DEQ has adopted and implemented rules comparable to 10 CFR Part 20 which govern NARM usage. A limited number of inspections against the approximately 145 NARM registrants began in 1996. DEQ has conducted 12 inspections of NARM facilities since January 1997. DEQ has conducted a registration and inspection program for x-ray machines and particle accelerators since 1994.

The staff of the DEQ RAM section will be responsible for implementing the Agreement State program regulatory activities for radioactive material licensed under the Agreement. The Section is comprised of nine full-time staff and one part-time staff member, which includes the program manager. On July 12, 2000, the Oklahoma RAM program manager discussed with NRC staff the resignation of one of the three senior technical staff members, effective July 21, 2000. As a result, DEQ RAM currently has two vacancies. Oklahoma is actively recruiting to fill the vacant position created by the staff member who resigned. The Oklahoma staffing plan allocates a total of 3.45 full time equivalent (FTE) technical/professional staff to the Agreement State program. NRC staff review found that the Environmental Program Manager who is the RAM

section manager, plans to spend about 65% of his time on the Agreement State program, including management review of inspection and licensing actions, personnel responsibilities, rules development, accompaniments of inspectors for annual management review, general supervision and other management duties. Additionally, approximately 20% of this time has been reserved for direct licensing support, if necessary. The staff effort to be devoted to the program by the four qualified technical staff members is as follows: two staff members will provide 100% effort, one will provide 50% effort, and 30% effort will be provided by one interim qualified staff member. The staffing plan also provides for .55 FTE training time for less experienced personnel.

Based on the DEQ staffing allocation of 3.45 technical/professional FTEs in the RAM Section, and the NRC estimate of 220 licensees there will be a ratio of approximately 1.57 technical/professional FTEs per 100 licenses. There is no current quantitative guideline in this area, however, NRC previously used a guideline indicator of 1.0 to 1.5 FTE per 100 licenses when reviewing existing Agreement State programs. The Staff found that one senior inspector has been permanently assigned to the Tulsa Regional Office, for closer proximity to many Oklahoma licensees. The plan also estimates approximately 11 days per year for management accompaniments of materials inspections by the program manager.

The NRC staff provided a list of licensees and expiration dates to the DEQ RAM staff to assist in predicting the expected workload for renewal of licenses. Based on the NRC information, the DEQ staffing plan analysis conservatively assumes receipt of at least one license renewal each year in all categories even those categories with only a very small number of licenses (such as broad scope medical or nuclear pharmacy), and three new license applications per year. The staffing plan analysis estimated approximately 81 inspections, which includes three initial inspections, per year. Staff notes that due to the efforts of the NRC Region IV staff, when the transfer occurs at the end of September 2000, it is expected that inspections will be current to January 2001. The DEQ staff has also stated that the State plans to accelerate staff training during September 2000 through January 2001 to fully qualify the interim qualified staff member and interim qualify an additional staff member who has six years well logging experience.

Based on the information provided, the NRC staff concluded that the proposed workload staffing estimates may be low for a few of the individual licensing and inspection licensee categories. However, the staff believes the programs 10% contingency resource allocation (which is in addition to the 3.45 FTE) provides an adequate margin of reserve in the event it is needed.

NRC staff notes that, in the future, the DEQ may license and regulate a LLW disposal site. Neither the DEQ nor NRC expects an application for a waste disposal site license to be made in the near future. Further, when an application is received, the DEQ has plans to add staff and to supplement the DEQ staff with contractors.

Based on the information provided, the NRC staff concludes that the proposed Oklahoma agreement materials program staffing plan would provide an adequate number of staff. We conclude that Oklahoma has met the commitment to have an

adequate number of personnel to meet the anticipated program needs.

2. Assessment of Staff Qualifications

The NRC staff review considered the qualifications of the individuals currently on the DEQ professional/technical staff that would be involved in the agreement materials program, and the DEQ's procedures for training and qualifying new staff members.

Under the proposed Agreement, the Environmental Program Manager would direct the agreement materials program, and would be primarily involved with the program's administration. NRC staff estimates that about 35 percent of the manager's effort would be devoted to technical issues, with the remaining 30 percent devoted to managerial and supervisory activities. The Program manager holds a B.S. degree in Physics/ Political Science and an M.S. degree in Industrial Hygiene. He has been with the DEQ since 1990, and has been the Environmental Program Manager since 1994.

The Program manager will provide the immediate day-to-day supervision of the agreement materials program.

Based on the staff review, all non-supervisory staff members except one have at least a bachelor's degree or equivalent in life/physical sciences or engineering. One senior staff member has an undergraduate degree in the physical sciences, and the other has an undergraduate degree in accounting and an advanced degree in public health. One junior staff member has an associate's degree in chemistry and an undergraduate degree in environmental science, and the interim qualified junior staff member has a degree in education. The three remaining staff all have degrees in engineering, one of which also has an associate's degree in radiation protection technology.

Most staff members were hired from other environmental programs in DEQ with considerable experience in a variety of environmental program areas. The program staff has considerable experience in related regulatory program implementation including air pollution, hazardous waste, solid waste, sewage treatment, and water use issues. Of the seven full-time professional employees, the program manager and one senior technical staff have 10 years of regulatory experience with DEQ and six years respectively in the radioactive materials program (RAM), as well as several years of prior experience working with radioactive material, radiation protection, or hazardous waste. The second senior staff member has three years of industry experience and three years with the DEQ RAM program. One junior staff member has three years experience as a laboratory technician using radionuclides for labeling and two years with the DEQ RAM program and the other junior staff member has seven years experience with DEQ in the environmental area, and two years in the DEQ RAM program. Two other staff members, currently in training, have 17 and 3 years experience, primarily in the environmental regulatory area. One has completed one year with DEQ RAM, and has 16 years of related environmental regulatory experience including six years experience as a well logging engineer, and the other has 3.5 years of related nuclear power plant experience as a health physicist decontamination technician and tool coordinator. The additional part-time member of the staff, a registered professional engineer, has been with DEQ since 1958. He spent many years as director of the program, and will be available for consultation and advice as

needed.

Based on information provided in the staffing analysis, the manager, two senior technical staff, and two junior staff members will conduct the licensing and inspection activities. Initially the other two less experienced personnel will contribute less than 0.1 FTE to the Agreement materials program. As these personnel become qualified in various Agreement material areas they will take on additional responsibilities. The program manager, two senior technical staff and one junior staff member have attended nearly all of the available relevant NRC training courses, including the 5-week Applied Health Physics course, inspection and licensing courses, and the majority of use-specific courses. Other staff members have completed or are planning to complete the licensing and inspection courses, industrial radiography, medical and other use-specific training courses. In addition, staff members have accompanied NRC inspectors and worked with NRC licensing staff to obtain additional on-the-job experience. Two senior staff have spent one to two weeks working with NRC staff on licensing and other issues. Two senior staff each have accompanied NRC staff on inspections, both in Oklahoma and in Region IV. Staff found that the DEQ has scheduled two staffs to participate in existing Agreement State inspections and the DEQ plans to continue staff training with other existing Agreement State programs.

The DEQ has adopted a written program for the training and qualification of staff members, which covers both new staff members and the continuing qualification of existing staff. NRC staff notes that the Oklahoma agreement materials program will be evaluated under the Commission's Integrated Materials Performance Evaluation Program (IMPEP). One IMPEP criterion addresses staff training and qualifications, and includes a specific criterion which addresses training and qualification plans. NRC staff reviewed the plan, and concludes that it satisfies the IMPEP criterion element.

The DEQ indicated that it planned to train and qualify each individual staff member to function in the areas of responsibility to which the individual is assigned, and to have a distribution of individual staff member qualifications which matches the expected distribution of categories of licensees to be transferred from NRC. For example, there must be enough inspectors qualified to inspect industrial radiography operations that the program is able to inspect the number of industrial radiography licensees transferred without developing a backlog.

The DEQ provided copies of memoranda authorizing full qualification to two senior staff, and interim qualification to two junior staff members, in accordance with Oklahoma's Formal Qualification Plan. All four staff are designated to staff the program at the time the Agreement is signed.

Based upon review of the information provided in the staffing analysis, consideration of their current NARM, x-ray and accelerator oversight programs, prior regulatory program experience, and staff education and training; NRC staff concludes that overall the program has an adequate number of technically qualified staff.

Based on the above, the NRC staff review concluded that the technical staff identified by the State to participate in the Agreement materials program are fully trained, and qualified in accordance with the DEQ plans, have sufficient knowledge and experience

in radiation protection, the use of radioactive materials, the standards for the evaluation of applications for licensing, and the techniques of inspecting licensed users of agreement materials to satisfy the criterion. Additionally, the NRC staff review concluded that additional qualified staff will be available to the program when the less experienced Oklahoma staff, currently in training, are fully trained and qualified in accordance with the DEQ plans.

References: *Program Narrative Description; Organizational Charts of the Department of Environmental Quality; Training Program for Health Physics Personnel and Licensing, Inspection, and Decommissioning Technical Professional Staff Training and Qualification Procedure; and Current Staff Curricula Vitae*; in the Request for an Agreement by Governor Keating.

21. Conditions Applicable to Special Nuclear Material, Source Material and Tritium. **Nothing in the State's regulatory program shall interfere with the duties imposed on the holder of the materials by the NRC, for example, the duty to report to the NRC, on NRC prescribed forms (1) transfers of special nuclear material, source material and tritium and (2) periodic inventory data.**

The NRC staff review found that the Oklahoma law provides an exemption from the law, and rules adopted under the law, to persons subject to regulation by the NRC. Oklahoma also adopted appropriate portions of 10 CFR Part 150 by reference to further inform persons of the exemptions and reservations of NRC authority under the Agreement. The NRC staff concludes that the criterion is satisfied.

Reference: Oklahoma Administrative Code § 252:410-10-1

22. Special Nuclear Material Defined. **Special nuclear material, in quantities not sufficient to form a critical mass, for present purposes means uranium enriched in the isotope U-235 in quantities not exceeding 350 grams of contained U-235; uranium 233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams; or any combination of them in accordance with the following formula: For each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified above for the same kind of special nuclear material. The sum of such ratios for all of the kinds of special nuclear material in combination should not exceed "1" (i.e., unity). For example, the following quantities in combination would not exceed the limitation and are within the formula, as follows:**

$$\frac{175 \text{ (grams contained U-235)}}{350} + \frac{50 \text{ (grams U-233)}}{200} + \frac{50 \text{ (grams Pu)}}{200} = 1$$

(This definition is subject to change by future Commission rule or regulation.)

The NRC staff review verified that Oklahoma has adopted appropriate portions of 10 CFR Part 150 by reference, including the definition of the term "special nuclear material in quantities not sufficient to form a critical mass" therein. Staff concludes that the criterion is satisfied.

Reference: Oklahoma Administrative Code § 252:410-10-150.

ADMINISTRATION

23. Fair and Impartial Administration. **State practices for assuring the fair and impartial administration of regulatory law, including provision for public participation where appropriate, should be incorporated in procedures for:**

- a. **Formulation of rules of general applicability;**
- b. **Approving or denying applications for licenses or authorization to possess and use radioactive materials, and**
- c. **Taking disciplinary actions against licensees.**

The NRC staff review confirmed that the Oklahoma radiation control program is bound by general statutory provisions with respect to providing the opportunity for public participation in rulemaking, licensing actions, and disciplinary actions. The program has adopted procedures to implement the law. The law also provides for the administrative and judicial review of actions taken by the program.

NRC staff has reviewed the pertinent procedures and determined that the criterion is satisfied.

References: Oklahoma Administrative Procedures Act at Okla. Stat. tit. 75 § 250 et. Seq.; Oklahoma Administrative Code § 252:2; *Oklahoma Program for the Licensing of Radioactive Materials*, and *General Statement of Policy, Enforcement Actions*, in the Request for an Agreement by Governor Keating.

24. State Agency Designation. **The State should indicate which agency or agencies will have authority for carrying on the program and should provide the NRC with a summary of that legal authority. There should be assurances against duplicate regulation and licensing by State and local authorities, and it may be desirable that there be a single or central regulatory authority.**

The NRC staff review confirmed that the Oklahoma DEQ is designated by law to be the State's radiation control agency. The legal advisor to the DEQ has confirmed that regulation of Agreement radioactive materials by local authorities is not permitted.

NRC staff concludes that the criterion is satisfied.

References: Oklahoma Radiation Management Act at Okla. Stat. tit. 27A § 2-9-103

25. Existing NRC Licenses and Pending Applications. **In effecting the discontinuance of jurisdiction, appropriate arrangements will be made by NRC and the State to ensure that there will be no interference with or interruption of licensed activities or the processing of license applications by reason of the transfer. For example, one approach might be that the State, in assuming jurisdiction, could recognize**

and continue in effect, for an appropriate period of time under State law, existing NRC licenses, including licenses for which timely applications for renewal have been filed, except where good cause warrants the earlier reexamination or termination of the license.

The NRC staff review confirmed that Oklahoma law contains a provision that deems the holder of an NRC license on the effective date of the proposed Agreement to possess a like license under the Oklahoma Radiation Management Act. This license shall expire on the date of expiration specified in the NRC license.

NRC staff has concluded that the Oklahoma program satisfies criterion 25.

Reference: Oklahoma Radiation Management Act at Okla. Stat. tit. 27A § 2-9-103.

26. Relations With Federal Government and Other States. **There should be an interchange of Federal and State information and assistance in connection with the issuance of regulations and licenses or authorizations, inspection of licensees, reporting of incidents and violations, and training and education problems.**

The NRC staff review verified that the proposed Agreement commits Oklahoma to use its best efforts to cooperate with the NRC and the other Agreement States in the formulation of standards and regulatory programs for the protection against hazards of radiation and to assure that Oklahoma's program will continue to be compatible with the Commission's program for the regulation of agreement materials.

Since criterion 26 was adopted, the Commission has determined in the revised policy statement on Adequacy and Compatibility of Agreement State Programs (published 9/3/97 at 62 FR 46517) that providing reports to NRC of Agreement State licensee incidents, accidents and other significant events is a matter of compatibility. Oklahoma has adopted NRC procedures to provide such reports to NRC. NRC staff concludes that the criterion is satisfied.

References: Proposed Agreement between the State of Oklahoma and the Nuclear Regulatory Commission, Article VI; and the NRC Policy Statement on Adequacy and Compatibility of Agreement State Programs.

27. Coverage, Amendments, Reciprocity. **An Agreement providing for discontinuance of NRC regulatory authority and the assumption of regulatory authority by the State may relate to any one or more of the following categories of materials within the State, as contemplated by Public Law 86-373 and Public Law 95-604:**
- a. **Byproduct materials as defined in Section 11e(1) of the Act,**
 - b. **Byproduct materials as defined in Section 11e(2) of the Act,**
 - c. **Source materials,**

- d. **Special nuclear materials in quantities not sufficient to form a critical mass,**
- e. **Low-level wastes in permanent disposal facilities, as defined by statute or Commission rules or regulations containing one or more of the materials stated in a, c, and d above but not including byproduct material as defined in Section 11e(2) of the Act;**

but must relate to the whole of such category or categories and not to a part of any category. If less than the five categories are included in any discontinuance of jurisdiction, discontinuance of NRC regulatory authority and the assumption of regulatory authority by the State of the others may be accomplished subsequently by an amendment or by a later agreement.

Arrangements should be made for the reciprocal recognition of State licenses and NRC licenses in connection with out-of-jurisdiction operations by a State or NRC licensee.

The NRC staff review verified that the proposed Agreement provides for the Commission to discontinue, and the State of Oklahoma to assume, regulatory authority over the types of material defined above in categories a, d, and e. The Agreement also provides for Oklahoma to assume authority over material in category c, but only if it is associated with material in categories a and d, and used for reasons related to its density rather than its radioactivity. See item 11 for description of limited source material.

Furthermore, since the criterion was adopted, the Commission has determined that the Agreement States may assume the authority to evaluate the safety of sealed sources and devices to be distributed in interstate commerce as a separate sixth portion of the Agreement, or to allow NRC to retain that authority. Oklahoma has chosen not to assume that authority.

Reference: Proposed Agreement between the State of Oklahoma and the Nuclear Regulatory Commission, Articles I, II, and III; NRC Staff Requirements Memorandum SECY-99-123, dated June 10, 1999.

The proposed Agreement stipulates the desirability of reciprocal recognition of licenses, and commits the Commission and the State to use their best efforts to accord such reciprocity. Oklahoma has also adopted 10 CFR Part 150 by reference, including § 150.20 providing for the reciprocal recognition of licenses.

NRC staff concludes that the criterion is satisfied.

References: Proposed Agreement between the State of Oklahoma and the Nuclear Regulatory Commission, Article VII; and Oklahoma Administrative Code 252:410-10-150(3).

28. NRC and Department of Energy Contractors. **The State should provide exemptions for NRC and DOE contractors which are substantially equivalent to the following exemptions:**

- a. **Prime contractors performing work for the DOE at U.S. Government-owned or controlled sites;**
- b. **Prime contractors performing research in, or development, manufacture, storage, testing, or transportation of, atomic weapons or components thereof;**
- c. **Prime contractors using or operating nuclear reactors or other nuclear devices in a U.S. Government-owned vehicle or vessel; and**
- d. **Any other prime contractor or subcontractor of DOE or NRC when the State and the NRC jointly determine (i) that, under the terms of the contract or subcontract, there is adequate assurance that the work thereunder can be accomplished without undue risk to the public health and safety and (ii) that the exemption of such contractor or subcontractor is authorized by law.**

The NRC staff review verified that Oklahoma has adopted 10 CFR Part 30 by reference, including § 30.12 wherein the specified exemptions are contained. Based on this, the NRC staff concludes that the Oklahoma regulations do provide exemptions from the State's requirements for licensing of sources of radiation for NRC and DOE contractors or subcontractors in accordance with this criterion.

Reference: Oklahoma Administrative Code § 252:41-10-30.

STAFF CONCLUSION

Section 274d of the Atomic Energy Act of 1954, as amended, states that

"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 amendment."

The NRC staff has reviewed the proposed Agreement, the certification of Oklahoma Governor Keating, and the supporting information provided by the staff of the RAM Section of the Oklahoma DEQ, and concludes that the State of Oklahoma satisfies the criteria in the Commission's policy statement "Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement," and therefore meets the requirements of Section 274 of the Act. The proposed Oklahoma program to regulate agreement materials, consisting of statutes, regulations, procedures, and apparatus, is compatible with the program of the Commission and is adequate to protect public health and safety with respect to the materials covered by the proposed Agreement.