REPORT AND STAFF EVALUATION

OF THE

NEBRASKA RADIATION CONTROL PROGRAM

FOR THE PERIOD

APRIL 25, 1980 TO AUGUST 21, 1981

19th Regulatory Program Review

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The 19th Regulatory Program Review meeting with Nebraska representatives was held during the period of August 17-21, 1981, in Lincoln, Nebraska. The State was represented by Ellis Simmons, Director, Division of Radiological Health. The NRC was represented by R. J. Doda. A review of selected license and inspection files was conducted on August 19-21. Mr. Doda conducted an accompaniment of Mr. Dave Jacobson on August 18, 1981. The summary meeting regarding the results of the regulatory review and inspection accompaniments was held with Dr. Henry D. Smith, Director of Health, on August 21, 1981.

Conclusions

The Nebraska program for control of agreement materials, in the staff's opinion, is adequate to protect the public health and safety and is compatible with the regulatory programs of the NRC and the Agreement States.

The Nebraska radiation control program was found to have one serious problem which precluded an initial staff finding of compatibility for the program. The revision of the State's radiation control regulations was a longstanding effort which necessitated an early conclusion. The last complete revision of the State's regulations occurred in 1974 and efforts for another complete revision had been in process since 1978. While the State had amended certain parts of the regulations for compatibility and had provided other mechanisms whereby up-to-date licensing practices could be employed in the program, these piecemeal methods expended significant staff efforts which could be better directed to other areas of the radiation control program. In addition, published versions of the State's current and up-to-date regulations should be readily available to licensees and other interested persons. This comment related to a serious question concerning a Category II indicator, "Updating of Regulations." State regulations should be scheduled for revision at least every two years. A staff determination of compatibility could not appropriately be made until after an evaluation was made of the State's plans to resolve this question.

The concern for this program area was pointed out in a comment letter to the State on September 24, 1981. The State responded with a letter on November 5, 1981, which stated that they intended to resubmit the draft regulations to the State Attorney General's office.

This was accomplished on October 6, 1981. Additionally, minor changes in the draft regulations were submitted to the NRC in Mr. H. E. Simmons' letter of December 1, 1981. No significant problems were found with the indicated changes in the draft regulations. Lastly, the draft regulations were sent to the Governor on January 6, 1982, for his approval. These actions by the State were considered adequate by the staff for a finding of compatibility for the State's program.

The review meeting of August 17-21, 1981, also disclosed several other areas of minor significance where program improvements could be made. The following specific comments and recommendations were provided to the State:

1. More effective laboratory support should be provided for the radiation control program. This comment relates to a Category II indicator, "Independent Measurements." During the review, it was found that two out of the three major pieces of laboratory equipment were not operating in a satisfactory manner. In addition to an acceptable availability of operational laboratory equipment, the results of routine samples submitted for analysis should be available to the program staff within a few days so that follow-up action can be taken when necessary.

2. The State should reconsider its new minimum qualifications for health physicists in the radiation control program where the educational requirements are shown as, "post high school training/coursework" in various disciplines. It is believed the basic qualifications for an individual working as a health physicist in an Agreement State regulatory program should be a bachelor's degree or equivalent in the physical and/or life sciences. This comment relates to a Category I indicator.

3. All inspection reports should be reviewed by a supervisor for adequacy of content and this supervisory review should be documented and dated on the inspection report. Each inspection report should include the names and titles of individuals from the licensee's management staff with whom the inspector met during the exit meeting. These comments relate to a Category II indicator, "Adequacy of Inspection Reports."

These conclusions are based on the review of the technical and administrative aspects of the State's regulatory program for agreement materials. Included in the review were examinations of: (1) selected license and compliance files, (2) information related to the program indicators specified in the NRC's "Guide for Evaluation of Agreement State's Radiation Control Programs," (3) the results of accompaniments of State inspectors, (4) the review of all licenses issued by Nebraska since April 25, 1980, and (5) the State's and NRC's continuing exchange of information program.

Summary Discussion with Dr. Henry D. Smith, Director of Health

A summary meeting to present the results of the regulatory program review meeting was held with Dr. Smith on August 21, 1981 in Lincoln, Nebraska. Mr. Ellis Simmons, Director of the Division of Radiological Health also attended the meeting.

It was stated that the NRC staff was unable to make an initial finding of compatibility for the State's radiation control program due to a serious problem in one program area for a Category II indicator "Updating of Regulations." Dr. Smith was informed that an evaluation of the State's plans to resolve this question would have to be made first. However, the program was found by the NRC staff to be adequate to protect the public health and safety since no other serious problem areas were found in the State's radiation control program and it was noted that most of the other program indicators were within NRC guidelines. An accompaniment of a State inspector during this review was also determined to be satisfactory.

The following additional comments and recommendations were made to Dr. Smith: (1) more effective laboratory support was necessary for the program and laboratory analyses should be routinely available to the program staff within

a few days, and (2) Nebraska should reconsider its new minimum qualifications for health physicists and upgrade them to a requirement for a bachelor's degree or equivalent in the physical and/or life sciences. Dr. Smith responded that the laboratory function was being reassigned to the Director of Laboratories for stronger emphasis. He further stated that they did not intend to hire any health physicists who did not have a bachelor's degree.

Program Changes Related to Previous NRC Comments and Recommendations

A. Comment Letter to Dr. H. D. Smith, May 13, 1980

1. Comment and Recommendation

We are pleased to note that the radiation control program staff has completed work on updating and revising the State's radiation control regulations and they are ready for the next procedural step towards adoption. It has been six years since the regulations were completely revised; therefore, we urge that the regulations be promulgated as soon as possible.

State Response

The Department of Health appears to be in the final stages of having new Regulations for Control of Radiation approved. We sincerely appreciate your letter of July 3, 1980 which permitted us to proceed without further delay on finalizing our regulations. I have instructed the Director of the Division of Radiological Health to continue to maintain the Regulations for Control of Radiation in a timely matter, especially the section of packaging and transportation of radioactive material.

Present Status

An initial staff finding of compatibility was withheld pending an evaluation of the State's plan to resolve this question. The State responded satisfactorily by sending their draft regulations to the Governor on January 6, 1982, for final approval. The State was informed of a staff finding of compatibility and adequacy in February 1982.

2. Comment and Recommendation

We believe that outstanding questions regarding the organization, administrative controls and specific areas of use of radioactive materials at the various locations of the University of Nebraska should be resolved. There appears to be a need for clearly defined areas of use for each of the specific programs at the University.

State Response

The Department of Health has had considerable dialogue with the University of Nebraska to resolve the license applications for radioactive materials and the administration of their licensing

program. Your comments concerning the license application and the technical review by your staff has been appreciated.

Present Status

The University of Nebraska at Lincoln (UNL) License No. 02-01-03 was issued in December 1980. The primary problem with the license is the organizational responsibilities of the Radiation Safety Committee (RSC) and the Radiation Safety Officer (RSO). The authority of the RSC is unclear with respect to the approval and direction of radiation health and safety activities. The licensee, in their overall radiation safety program, had conferred an "advisory" role for the RSC and a "consultant" relationship for the RSO. State Agreements provided technical assistance to the State in the form of a special accompaniment of State inspectors during April 13-17, 1981 at UNL. After the inspection was completed, a closeout meeting was held with the University's management. During this meeting, it was necessary to explain the responsibilities for radiation health and safety that go with a broad academic license. Specifically, that the RSC must have authority for the approval/disapproval of uses and users of radioactive material, with consideration of radiological health and safety, and the RSO must have the authority and the means to monitor programs, approved by the RSC, for radiological health and safety on a day-to-day basis. Furthermore, it was pointed out that if the responsibilities inherent in a broad academic license were not desired by the licensee, specific licenses could be issued to individual Departments of the University which would place the necessary requirements on each Department. At the end of the meeting, positive oral commitments to upgrade these organizational responsibilities were made by the licensee's management and the State appeared to be satisfied with the results of the closeout meeting. The status of these commitments should be reviewed during the next regularly scheduled review of the Nebraska program.

B. Comment Letter to Mr. H. E. Simmons, May 13, 1980

1. Comment and Recommendation

We believe scheduled monthly staff meetings which include a planned agenda of specific items for discussion would be useful, particularly since the establishment of your field office in Omaha. A monthly report from each of the staff members would also help in the routine assessment of the status of the program.

State Response

We believe this recommendation is a very good one which we will implement within sixty days.

Present Status

The Division is holding monthly staff meetings on a routine basis.

2. Comment and Recommendation

We recommend that license and compliance information be filed separately, whether they be in the same folder or separate folders. This would allow a more efficient retrieval of information pertaining to any licensing or compliance action.

State Response

We are taking this recommendation for further consideration. The staff has had little problem in retrieving necessary information regarding the license. Individuals reviewing the program may have some difficulty. We may try it both ways to determine which works best for us.

Present Status

The Division's license and compliance files are contained in a combination folder.

3. Comment and Recommendation

The Compliance Manual should be updated and include detailed inspection and enforcement guidance.

State Response

We concur with this recommendation and will update the Compliance Manual in the next few months.

Present Status

The Division has updated several compliance procedures during the review period.

4. Comment and Recommendation

We recommend that the inspector operating independently out of your Omaha field office attend the next Inspection Procedures Course.

State Response

We will make every attempt to have the Omaha office inspector attend the Inspection Procedure Course sponsored by N.R.C.

Present Status

The Omaha inspector did not attend the inspection procedures course during the review period, but was planning to attend the next scheduled course.

5. Comment and Recommendation

The Nebraska regulation equivalent to 10 CFR 19, "Notices, Instructions and Reports to Workers; Inspections," should be added to the standard condition which requires licensees to comply with the provisions of Part IV of the Nebraska regulations.

State Response

We are now adding to our license conditions Nebraska's Regulations equivalent to 10 CFR 19.

Present Status

The Division has added this section to their list of standard conditions.

6. Comment and Recommendation

For each radioisotope listed on a license, all licenses should show the maximum quantity (curies, pounds, grams, as appropriate) the licensee may possess at any one time. Specific instances where these deficiencies were noted involved brachytherapy sources and irradiated nails.

State Response

We will add these to all licenses issued or amended in the future.

Present Status

The Division is adding this information to newly issued licenses and amendments.

7. Comment and Recommendation

We recommend that the State utilize an inspection report format which is designed to assure that all necessary areas are covered during inspections and reported in sufficient detail. Each area inspected should be highlighted in the report.

State Response

We will redesign our inspection report format to assure all areas are covered during inspections. We are considering an inspection report in sufficient detail that written license inspection reports may be eliminated.

Present Status

Inspection reports appeared to cover the necessary information except for an indication on the report of supervisory review, and an indication on the report of persons within the licensee's management who were present for the closeout meeting.

8. Comment and Recommendation

Recommendations made to licensees as a result of an inspection should be limited to those items having a direct health and safety implication and which are not covered by regulation or license requirements. The reviewer noted some recommendations which should have been items of noncompliance. Care should be exercised in providing recommendations which appear to place the State in the role of a consultant. Detailed information on radiation safety practices and techniques are more properly handled by means of seminars or training sessions.

State Response

In defense of this recommendation, the Division did make certain recommendations which should have been items of noncompliance with the licensee, however, on review of the license application and information subsequently supplied, it was extremely difficult citing the licensee for noncompliance for something that had been overlooked in the original license application made fifteen years ago. We are attempting to correct these situations by more complete evaluation of all license applications. In regard to providing recommendations and information which places the State in the position of a consultant, we are well aware of the pitfalls of this procedure and will resolve it. One of the problems in our state is the shortage of qualified health physicists and the reluctance of a licensee or registrant securing their services.

Present Status

No deficiencies in the Division's actions were noted during this review. Note that a prelicensing accompaniment was made during this review and not an inspection accompaniment.

9. Comment and Recommendation

We recommend that the results of all investigations be documented. We understand that investigations were made of three complaints during the past year but the results were not documented because the investigations revealed that the complaints were unfounded. We believe it to be good regulatory practice for the agency to document the findings of any investigation.

State Response

We will document the results of all investigations and complaints.

Present Status

This Division is documenting the results of all investigations.

ORGANIZATION

Legal Authority

Legal authority for radiation control in Nebraska is given in Article 35, "Radiation Control Act," Sections 71-3501 through 71-3519 of the revised Statutes of Nebraska. The present revision was effective July 18, 1980. A copy of this revision was obtained and placed in the State Agreements Program (SA) files.

Radiation control regulatory responsibility is located in only one agency in Nebraska. This is the Department of Health. The Director of Health shall: (a) advise the Governor and agencies of the State on matters relating to radiation; and (b) coordinate regulatory activities of the State relating to radiation, including cooperation with other states and the federal government.

Location of Radiation Control Program within the State Organization

The Nebraska Radiation Control Program is located in the Nebraska Department of Health. An organization chart of the Department of Health is contained in Appendix D of this report. Dr. Henry D. Smith is Director. Reporting to Dr. Smith is the Assistant Director of the Bureau of Health Care Administration, Mr. Lawrence Graham. Mr. Ellis Simmons, Director of the Division of Radiological Health, reports to Mr. Graham. Based upon discussions with Mr. Simmons and in view of the organization charts, it appears that the State radiation control program is adequately located to enable it to effectively compete for support and funds.

Internal Organization of the Radiation Control Program

The internal organization of the Nebraska Radiation Control Program is depicted in Appendix D. Mr. Simmons provides administration and managerial support of the program. Messrs. Jacobson and Steele are responsible for licensing and inspection of radioactive material users. Given the size of the program, this organization appears to be adequate for achieving an acceptable degree of staff efficiency and providing specific lines of supervision for program management and execution of program policy. State staff indicated there is almost daily contact with the regional office in Omaha.

Legal Assistance

Legal staff is assigned the Department of Health. This legal staff is available to the radiation control program. Other legal staff is available from the State Attorney General's office.

Technical Advisory Committees and Consultants

The State has a Radiation Advisory Committee whose members are appointed by the Governor. The list of the members is attached as Appendix E. The members currently serve indefinite terms. The Committee has been involved in reviewing proposed revisions to the State Radiation and Protection Regulations. The State's members are occasionally contacted for technical consultation. The State's medical advisory committee is known as the Medical Registration and

Licensure Committee and functions as a subcommittee of the Radiation Advisory Council.

The State does not have specific procedures to avoid a conflict of interest regarding advisory committee members. Mr. Simmons stated the RCP would use its own judgement if a conflict of interest appeared to exist in any particular case. The State utilizes technical assistance from the NRC.

MANAGEMENT AND ADMINISTRATIVE

Emergency Response Plans

Nebraska's Radiological Emergency Response Plan, dated January 1981, provides response actions for radiological incidents.

The purpose of this Plan is to:

a. Provide an effective means for responding to a radiological incident and establishing a mechanism for mitigating any consequences.

b. Provide guidance for agencies, users, licensees, and individuals in the State of Nebraska whose responsibilities are such that they might be called upon to assist under emergency conditions.

c. Identify the appropriate agencies and individuals to notify in case of an emergency.

d. Identify certain agency, licensee, and individual responsibilities.

Notification procedures are contained on page i (NRH-27), of the emergency plan. These procedures were reviewed and it was determined that they provide for notification and communication with appropriate government agencies and are organized so that qualified individuals are readily available through identificable channels of communication. The plan also identifies responsibilities and actions to be taken by State agencies. A 1981 revision of this plan was placed in the SA files.

The State's emergency plan is a comprehensive one which is intended to cover major accidents of nuclear facilities but it also adequately covers noncatastrophic incidents. The plan is reviewed continuously to assure it is kept current. Page changes are issued as necessary. The 1981 revision did not change the agreement materials aspects of the previous issue.

Budget

The following data was obtained for the radiation control program budget for the period July 1, 1981 to June 30, 1982. Mr. Simmons reported that the State general funds provided $200,699, Federal block grant funds provided $8,850, and Federal X-ray certification performance standard contract provided $8,859. The budget for the total radiological health program was $219,703, which is up by 19.9% over 1981. Of this, $49,439 was allocated for the radioactive materials program. This is equivalent to a level of funding of $364 per license. The radioactive materials budget is broken down as follows: (1) licensing -

$21,973, (b) inspection and enforcement - $20,142, and (c) administration - $7,324.

The State does not collect fees for radioactive materials licensing and inspection.

Administrative Procedures

Messrs. Steele and Jacobson have been provided copies of the State's internal guide on licensing and compliance, including policy memorandum. As noted previously, the licensing manual has been revised. A cursory examination of this manual shows it to be quite complete and up to date. The staff uses checklists to provide assistance in the review of license applications and inspection check-off sheets to assist the inspector in conducting organized and thorough inspections.

Staff meetings are held approximately two to three times per month to discuss current activities in the program. Mr. Simmons also visits the Omaha office about once a month. Communication and liaison between the staff is not a problem.

With respect to policies for handling public relations problems, it was stated that press releases must be cleared with the Director of Health, however, the staff can respond to inquiries for factual information from any source.

Periodic statistical information is prepared by manual review of the license inspection files. This system is acceptable given the current size of the program. Statistical information on the program has been provided to NRC on a timely basis. Procedures are available and followed to assure timely release of information to the public, NRC and to the Agreement States on matters of common interest.

Planning

Mr. Simmons stated that he submits to management an annual work plan and budget. In addition, a management by objective plan is prepared for each staff member.

Laboratory Support

The Director of Health recently made a program change in the Division by transferring the Radiation Chemistry Laboratory and the Radiation Chemist to supervision by the Director of Laboratories. The Division of Radiological Health will establish the environmental surveillance program and manage the collections of the samples, however. The Division will provide back-up technical support to the Radiation Chemistry Laboratory. The Division will retain its TLD reader and accessories and supervision of the calibration source for survey instruments, which will be stored at the lab. The Division of Radiological Health will retain, in its Omaha office, a gas proportional counter for counting leak tests and wipes, etc.

The Radiation Chemistry Laboratory has the following equipment for measurements:

1. Gamma analyzer with NaI, and GeLi detector. GeLi detector was not working at the time of the review.

2. Low Beta Counter - Nuclear Chicago, 100 sample automatic counter. This equipment was not operating at the time of the review.

3. Liquid scintillation counter.

Routine samples should be processed within two to three days and, on special request, within hours.

Office Facilities, Equipment and Support Services

The current level of secretarial, clerical support is about 0.59 person years per 100 licenses. Clerical services and secretarial services are provided in the Lincoln, Nebraska office. Mr. Simmons stated that there are no clerical or secretarial services in Omaha and these services are provided out of the Lincoln office. Currently, professional personnel are performing minimal filing or other clerical services. Based upon reviews of selected license and compliance files it appears that the licenses, reports and correspondence are typed, filed and distributed on a timely basis. The State does have some automatic data processing equipment. Standard license conditions are on mag card typewriters. Renewal notices are generated manually and a log book of licenses currently in effect is maintained. At the end of each calendar year, a list of licenses, due to expire the following year, is prepared. Renewal notices are sent to the licensee 60 days before the expiration of the license. The Division may utilize the Department of Administrative Services' computer capability. This is a costly and insufficient procedure, in the Division's opinion.

Public Information

Mr. Simmons stated that all files are open to the public, except for proprietary information which may be withheld from the public in accordance with State laws.

PERSONNEL

Qualifications

Written position descriptions exist for all professional personnel levels. These are attached to the report as Appendix H. The entry level position for health physicists in the radiation control program has been changed where the educational requirements are shown as, "post high school training/courswork" in various disciplines. The NRC has commented unfavorably on this change on several occasions, since it is believed the basis qualifications for an individual working as a health physicist in an Agreement State regulatory program should be a bachelor's degree or equivalent in the physical and/or life sciences.

Number of Personnel

The person-years of effort applicable to the agreement material program are as follows:

Name	Function	Staffing Effort
E. Simmons	Director and Supervisor	0.1 person-year
D. Jacobson	Licensing and Inspection	0.6 person-year
K. Steele	Licensing and Inspection	0.7 person-year
L. Jablonski	Inspection	0.05 person-year
	Total	1.45 person-years

This represents a staffing level of 1.07 person-years per 100 licenses, which meets the criterion of 1.0 to 1.5 person-years per hundred licenses. The State does not have any unusually complex licensed activities such as mills and burial grounds and the current staffing level is deemed adequate for the scope of the program. There are adequate supervisory functions to provide guidance and direction to Division personnel.

Duties

Mr. Simmons stated that at the present time there is one junior person in the program. This person, Mr. L. Jablonski, is a Radiological Health Specialist I. Mr. Simmons stated that the staff is assigned to regulatory activities individually except that, in the case of inspections of large licensed programs, he personally participates in the licensing review. With respect to supervision of the licensing and inspection functions, Mr. Simmons stated that he reviews draft licenses prepared by the staff and reviews all inspection reports and enforcement correspondence. Mr. Jacobson and Mr. Steele independently review licenses and conduct inspections. Mr. Jablonski is primarily assigned to the X-Ray program. Mr. Jacobson is the coordinator for emergency planning.

Training

Mr. Simmons stated that on-the-job training and orientation for new employees is provided on an as-needed basis. Since the last review, four NRC-sponsored training courses have been attended by the staff responsible for the radioactive materials control program. This represents 6.9% of technical staff effort.

This training effort meets the five to ten percent NRC guidance for staff training. In addition, the staff attended various conferences and meetings sponsored by NRC and CRCPD. See Appendix I for a list of all training courses attended by the agreement materials staff.

Salaries

The salary schedules for Radiological Health Specialists and Health Physicists are as follows:

Position	Annual Salary Range
Radiological Health Specialist I	$13,962 - 19,547
Radiological Health Specialist II	$17,345 - 24,283
Health Physicist	$20,044 - 28,062
Director, Division of Radiological Health	$23,163 - 32,428

In the opinion of Mr. Simmons, the salary schedule is believed to be comparable with similar employment alternatives in the same geographical

area and he noted that the State has been successful in attracting and retaining professional staff. The salary schedules provide for in-grade merit increases but do not provide for cost of living increases except as granted by the State legislature. The salary schedule does not provide for automatic in-grade increases. Opportunities exist for promotion within the organization up to the Health Physicist position without a staff vacancy occurring.

Staff Turnover

The Division did not experience any staff turnover during the period covered by this review.

Recruiting

Mr. Simmons stated that appointments to entry level positions are based upon evaluation of the training and experience of the applicants. Competitive examinations are not utilized. Mr. Simmons stated that the State Merit System is expected to recruit personnel by announcing vacancies but, in his own experience, he has found it more effective to personally recruit personnel. In announcing vacancies, the State's personnel office uses State recruitment lists and local papers. The Division uses professional society journals.

REGULATIONS

Compatibility

The State's administrative procedures for adopting new regulations are as follows. The staff will draft a proposed revision and a copy is sent to NRC and other appropriate Federal agencies for early comment. The State Radiation Advisory Council then reviews and comments on the proposed revision. A copy of the proposed revision is then made available to the public and other interested parties including NRC and other Federal agencies. Public announcements are made concerning its availability. A public hearing on a proposed revision is then held. If necessary a redraft of the proposed revision is then made and resubmitted to the Radiation Advisory Council for re-review. The next step is approval by the Director of Health followed by preparation of the proposed revision in proper form. The regulations are then sent to the Attorney General's office for a formal review of the legal aspects of the regulations. On concurrence by the Attorney General's office, they then go to the Governor and Secretary of State for their signatures.

The difficulty in Nebraska's being able to change its regulations in a timely manner (during the period 1975 - 1981) has been in meeting the legal requirements of the Attorney General's office. The State finally sent its draft regulations to the Governor for his signature on January 6, 1982.

The State cannot administratively adopt new regulations. The State has no regular schedule for revision of the regulations, however, appropriate amendments are made every three years to maintain compatibility.

Updating of Regulations

The State's last complete revision of the regulations was in 1974. After the Attorney General's office discovered some legal problems, Rule 40 was amended

in 1975 as a temporary measure to permit the State to license persons. Since that time, the State has been working, amending and revising its draft regulations. After this review, an initial staff finding of compatibility was withheld pending an evaluation of the State's plan to resolve this question. The State responded satisfactorily by sending its draft regulations to the Governor on January 6, 1982, for final approval.

LICENSING

Licensing Actions

As of August 21, 1981, there were 136 licenses in effect in the State of Nebraska. Since the last review meeting the State has issued 32 new licenses and issued a total of 170 amendments, for a total of 202 licensing actions. A review of selected license files is contained in Appendix A. In general, the essential elements of applications were found to be sufficient to establish a basis for licensing action. The State performed three prelicensing visits since the last program review. The staff stated that prelicensing visits are made on a case-by-case basis. These included visits to Harris Labs, the City of Lincoln and the Nebraska Medical Center's Regional Nuclear Pharmacy (see accompaniment summary in Appendix C). Licensing policies and practices appear to be consistent with those followed by the NRC. Cover letters are used by the State to transmit the license or the license amendment to the licensee.

The State has a five year license renewal program. During these renewals, all supporting information in the application must reflect the current scope of the licensee's program.

Adequacy of Product Evaluations

The staff stated that no sealed source or device evaluation was performed since the previous review meeting.

Licensing Procedures

The Division uses internal licensing guides, checklists and policy memorandums consistent with current NRC practices. License applications are furnished copies of applicable guides and regulatory positions. The Division prepares written Nebraska versions of NRC licensing guides. Coordination of licensing actions is not a problem since the staff does both license reviews and compliance inspections. Preliminary review and screening of applications are normally done within a few days of receipt, but always within 30 days. License expiration notices are sent to licensees 60 days prior to expiration. The State utilizes timely renewal procedures. Licenses are issued for five year periods.

In general, files are maintained in a way to allow accurate retrieval of information and documentation of discussions and visits. The State has a system such that all licensing and compliance documents are filed together in the same folder. Division personnel maintain statistical data regarding the number and types of licenses, inspection of such licenses by category, and furnish such statistical data to the NRC on a timely basis and on special request. The State uses standard license conditions similar to those used by NRC. At the present time, there is no backlog of new license applications, although there are three licenses in timely renewal status.

Quality Assurance

All license application actions are reviewed by Mr. Simmons. If there is an application for a large, complex, or potentially hazardous program, then the licensing actions would be a group effort before final approval by Mr. Simmons. All licensing actions receive supervisory review before being completed.

Medical Advisory Committee

The Division calls on the Medical Advisory Committee for advice regarding the use of radioisotopes in or on humans. The Committee had taken four actions during three different meetings during the review period.

COMPLIANCE

Status of Inspection Program

Statistical information is maintained to enable the staff and the Division Director to periodically assess the status of the inspection program. At the end of each calendar year a listing is made of all licenses by inspection priority and category. The listing shows the date of last inspection and the date due for the next inspection. Any overdue inspections are highlighted with a yellow marker.

During the period of the review, the State performed 32 inspections. As of August 21, 1981, there were four licenses overdue for inspection. These were all rather minor medical institution licenses which ranged from 20 to 30 months overdue.

Inspector's Performance and Capability

Mr. Dave Jacobson was accompanied during a prelicensing visit at the Nebraska Medical Center's Regional Nuclear Pharmacy, Omaha, Nebraska. The inspector was judged to be competent to evaluate health and safety problems and to resolve questions necessary for licensing review. A report of the accompaniment is contained in Appendix C.

Mr. Simmons advised that he had not made any field evaluations of inspections in the past year, but stated he was planning to in the near future. The reviewer pointed out the importance of these supervisory evaluations, particularly in the case of Mr. Jacobson operating independently out of the Omaha office.

Response to Incidents and Alleged Incidents

Mr. Simmons stated that incidents are investigated on a priority basis; however, telephone inquiries are made to determine the need for an immediate onsite investigation. Medical consultants are available and used when necessary including medical consultation through NRC.

The staff conducted an onsite investigation of Becton-Dickinson, a State licensee. The Division prepared a written report to document the incident and the State's responsive actions regarding the incident. This report was filed in the State Agreements files.

The reviewer recommended that as a good regulatory practice, the results of all investigations be documented.

Enforcement Procedures

The State utilizes specific forms in the field for enforcement action. However, letters are also utilized. The letters are generally dispatched within 45 days of the date of the inspection. A review of selected compliance files, Appendix B, indicated that enforcement letters are written in appropriate regulatory language and properly referenced regulations and license conditions are included. Enforcement letters are signed by Mr. Simmons. Prior to dispatch, the letters are subject to review by Mr. Simmons along with the inspection report. Generally, a 30-day period is specified for response from the licensee when they have any citations for violations. The licensee responses to enforcement letters are reviewed by the inspector and supervisor and they are acknowledged properly. Management reviews compliance inspections, holds sessions with licensing and inspection personnel, and, on occasion, accompanies inspectors on field inspections. This last year, the Division used NRC technical assistance to advise and assist in an inspection at the University of Nebraska at Lincoln.

As noted in Appendix J, the State has documented an adequate set of procedures for handling escalated enforcement actions.

Equipment Failure

Mr. Simmons stated that there were no incidents during the review period which could have been attributed to a generic type equipment failure.

Inspection Procedures

Inspection guides and policy memorandum have been issued to the Division staff. This material is contained in a compliance manual which is updated on an unscheduled basis. It was recommended that the Compliance Manual be updated more often to keep it current for staff use.

The Division has a copy of an NRC supplied sheet entitled "Enforcement History Work Form" but has not yet begun using the form. It was suggested that the use of this form would be useful in quickly determining the enforcement history of each licensee.

Oral briefings by supervision are usually performed after each inspection, particularly in cases where items of noncompliance are found.

Inspection Frequency

The State's current inspection priority system is shown in Appendix K. The present Nebraska inspection priority system calls for inspections at least as frequent as the NRC inspection priority system. License reviewers are responsible for assigning licenses to the inspection priority categories. A manual recordkeeping system is utilized for identifying and scheduling licenses for inspection. The inspection priority system is designed to assure that more hazardous and complex operations are inspected at an appropriate frequency. The system utilized by the State for identifying and scheduling

licenses is maintained by Mr. Steele and is updated by the clerical staff. Mr. Simmons stated that most of the inspections conducted by the State are unannounced. Mr. Simmons also stated that the radiation control program inspects out-of-state firms working in the State under reciprocity. Out-of-State firms that are licensed by the State are required to notify the Division prior to conducting licensed activities.

Adequacy of Inspection Reports

Details of the review of selected compliance files are given in Appendix B. As noted previously and in Appendix B, the reviewer recommended improvement in the documentation of inspection results.

Independent Measurements

The State's policies for conducting independent measurements as part of inspections were found to be adequate. Instrumentation is readily available to the radiation control program and appeared to be adequate for surveying licensed operations. The State's procedures for calibrating instruments are adequate. Most of these instruments are calibrated inhouse. The inventory of the State's field and laboratory equipment is attached as Appendix G.

OTHER AREAS EFFECTING THE ADEQUACY OF THE STATE'S TOTAL RADIATION CONTROL PROGRAM

Surveillance of Radiation Producing Machines

On the date of this report the State had 2,380 X-ray producing machines, and 7 accelerators. During Fiscal Year 1981, the State inspected 655 X-ray machines and no accelerators.

Environmental Surveillance

The State's environmental surveillance program includes three stations sampling particulate airborne radioactivity on a weekly basis and two stations where weekly charcoal collectors are changed and subjected to gamma spectroscopy. There are four locations on the Missouri river where quarterly grab samples are taken of river water and analyzed for gross alpha and beta activity and one location on the river where monthly samples are taken and analyzed for gross alpha and beta activity. Surface waters are collected on a semi-annual basis and analyzed for gross alpha and beta activity, gamma spectroscopy and for tritium. Ten wells in the State are sampled semi-annually and subjected to gross alpha and beta analysis, gamma spectroscopy and analysis for tritium. There are 11 stations in the State where TLD's are set out and collected on a quarterly basis. The State radiological laboratory participates in the EPA Quality Control Program. The Cooper boiling water reactor and Calhoun pressurized water reactor stations are also subjects of a radiological surveillance program.

A copy of the report of the State's environmental surveillance program for the period 1978 to 1979 was obtained and placed in the State Agreements files.

Inspections Related to DOT Requirements

The State has included the authority to inspect licensee shippers for package preparation and shipping procedures related to DOT requirements in its proposed regulations. These State regulations are expected to become effective during 1982.

Licensees Requiring Radiological Contingency Plans

Nebraska has no major licensees requiring radiological contingency plans.

LIST OF APPENDICES

APPENDIX A

REVIEW OF SELECTED LICENSE FILES

Summary and Conclusions

The review of selected license files produced the result, in general, that the licenses appeared to be well supported by the applications for radioactive material licenses and by other backup information. The condition of the files ranged from marginal to good regarding the chronological order of the material in the license files. Telephone conversations and written deficiency letters were found in the files where the licensee was asked for additional or corrective information in selected cases. In general, the licenses contained appropriate licensing conditions for the type of license being issued.

Licenses were reviewed to determine whether the application had been properly completed and signed by an officer of the applicant authorized to sign such a document. The reviewer brought to the attention of the licensing staff, where appropriate, significant errors, omissions, and deficiencies in licensing actions. License files were reviewed for adequate information and unusual time lapse between receipt of applications and issuance of licenses. Missing information, i.e., letters, documents, file notes and telephone conversations, were noted where appropriate. The files were also reviewed for illegal or improper license authorizations and the lack of appropriate cover letters.

One reporting deficiency found during the file review involved a license condition being used by the State. This condition was, "The licensee shall comply with the provisions of Part IV, Nebraska Radiological Health Regulations," "Standards for Protection Against Radiation," and Part X, Section 10.02, Posting of Notices to Workers."

The licensee, of course, must comply with all of Part X and not just Section 10.02. The Division staff corrected this standard license condition at the time of the review meeting.

1. LICENSEE: Halliburton Services
   ADDRESS: Kimball, Nabraska
   LIC. NO: 71-02-01
   ISSUED: 11-10-80
   EXPIRES: 10-31-85
   LICENSE TYPE: Well logging

2. LICENSEE: University of Nebraska
   ADDRESS: Division of Environmental Health, Lincoln, Nebraska
   LIC. NO: 02-01-08
   ISSUED: 11-17-80
   EXPIRES: 7-31-85
   LICENSE TYPE: Irradiator

3. LICENSEE: University of Nebraska Medical Center
   ADDRESS: 42nd Street and Dewey Avenue, Omaha, Nebraska
   LIC. NO: 01-50-01
   ISSUED: 10-3-80

EXPIRES: 10-31-85
LICENSE TYPE: Broad Medical

4. LICENSEE: Nebraska Testing Laboratories, Inc.
ADDRESS: 4453 South 67th Street, Omaha, Nebraska
LIC. NO: 01-22-01
ISSUED: 8-11-80
EXPIRES: 7-31-85
LICENSE TYPE: Industrial Radiography

5. LICENSEE: Dale Electronics, Inc.
ADDRESS: Columbus, Nebraska
LIC. NO: 10-02-01
ISSUED: 7-21-80
EXPIRES: 7-31-85
LICENSE TYPE: Industrial, R&D, and Mfg.

6. LICENSEE: Lutheran Hospital
ADDRESS: 1201 South 9th Street, Beatrice, Nebraska
LIC. NO: 03-01-01, Amendment 2
ISSUED: 7-14-81
EXPIRES: 9-1-83
LICENSE TYPE: Medical institution

LICENSE FILES

Comment	1	2	3	4	5	6						
1. Packaging procedures in manual are not adequate												
2. RSO not specified in application												
3. Wipe test evaluation procedures in manual not adequate												
4. Inadequate description of training for users and others					X							
5. Documents out of order or missing						X						
6. Frequency of medical isotope committee meetings inappropriate												
7. Diagrams submitted appear inadequate												
8. No examples of any of the records to be kept were submitted	X											
9. Physician not qualified for authorized use												
0. Missing supportive information from file												
1. Review and response by State staff was not timely		X										
2. Error on license document or amendment	X	X	X	X	X							
3. RSO is a consultant not present onsite					X							
4. Inadequate information on leak tests												
5. Inadequate information on survey instrument calibration												
6. Operation and Emergency Procedures not adequate	X											
7. Improper maximum possession limit in license				X								
8. Missing or improper license condition												

APPENDIX B

REVIEW OF SELECTED COMPLIANCE FILES

Summary and Conclusions

The State's compliance files are contained in combination license and compliance files for each licensee. These files were found to be well ordered with respect to the dated documents in the files, in general. The review of these files covered the scope of the inspections, the adequacy of inspection reports, the adequacy of independent measurements taken during inspections, the resolution of previous items of noncompliance, and closeout exit meetings with the licensee's representatives. Reviews of inspection reports by the Division's management were also noted. The reviewer determined the timeliness of enforcement letters and responses from the licensee, the adequacy of these responses, the adequacy of inspection oversight by the Division's management, and the adequacy of final actions taken by the Division's compliance personnel.

Several deficiencies were noted during the review of these files, and were called to the attention of the staff. All inspection reports should be reviewed by a supervisor for adequacy of content and this supervisory review should be documented and dated on the inspection report. Also, inspection reports should contain a brief summary statement giving the results of the questioning of workers and technicians concerning their operational procedures for the use of radioactive materials.

Because of the importance of the exit meeting to the overall inspection, each inspection report should include the names and titles of individuals from the licensee's management staff with whom the inspector met during the exit meeting.

Except for the items mentioned above the compliance files appeared to be complete with respect to content and the Division's compliance actions were found to be consistent with good regulatory practice.

1. LICENSEE: Nebraska Testing Laboratories
   ADDRESS: 4453 South 67th Street, Omaha, Nebraska
   LIC. NO: 01-22-01
   LICENSE TYPE: Industrial Radiography
   INSP. DATE: 1-27-81
   INSPECTORS: D. Jacobson
   REPORT DATE: 1-27-81
   SIGNED BY: D. Jacobson
   TYPE OF REPORT: Format
   REPORT REVIEWED BY: E.S.
   "591" TYPE FORM USED: No
   ENF. LETTER DATE: 2-6-81
   DATE OF LICENSEE RESPONSE: None
   DATE OF STATE ACKNOWLEDGEMENT: None
   TYPE OF INSPECTION: Complete

2. LICENSEE: St. Joseph Hospital
   ADDRESS: 601 North 30th Street
   LIC. NO: 01-05-01

LICENSE TYPE: Institutional Nuclear Medicine
INSP. DATE: 7-25-79
INSPECTORS: D. Jacobson
REPORT DATE: -
SIGNED BY: D. Jacobson
TYPE OF REPORT: Narrative
REPORT REVIEWED BY: K. Steele
"591" TYPE FORM USED: No
ENF. LETTER DATE: 9-28-79
DATE OF LICENSEE RESPONSE: 10-24-79
DATE OF STATE ACKNOWLEDGEMENT: 11-13-79
TYPE OF INSPECTION: Complete, Announced

3. LICENSEE: Radiology Associates
ADDRESS: Lincoln General Hospital
LIC. NO: 02-06-01
LICENSE TYPE: Nuclear Medicine
INSP. DATE: May 22-23, 1979
INSPECTORS: K. Steele
REPORT DATE: Not specified
SIGNED BY: K. Steele
TYPE OF REPORT: Narrative
REPORT REVIEWED BY: E. Simmons
"591" TYPE FORM USED: No
ENF. LETTER DATE: 6-18-79
DATE OF LICENSEE RESPONSE: 6-21-79
DATE OF STATE ACKNOWLEDGEMENT: 6-22-79
TYPE OF INSPECTION: Complete, Announced

4. LICENSEE: Becton Dickinson and Company
ADDRESS: 150 South 1st Ave., Broken Bow, Nebraska
LIC. NO: 04-01-01
LICENSE TYPE: Irradiator
INSP. DATE: 4-27-81
INSPECTORS: K. Steele, L. Jablonski
REPORT DATE: Not specified
SIGNED BY: K. Steele, L. Jablonski
TYPE OF REPORT: Narrative
REPORT REVIEWED BY: Not specified
"591" TYPE FORM USED: No
ENF. LETTER DATE: N/A
DATE OF LICENSEE RESPONSE: N/A
DATE OF STATE ACKNOWLEDGEMENT: N/A
TYPE OF INSPECTION: Complete, Unannounced

5. LICENSEE: Pathology of Medical Services
ADDRESS: 56th and "O" Street, Lincoln, Nebraska
LIC. NO: 02-03-01
LICENSE TYPE: Nuclear Medicine
INSP. DATE: August 23-24, 1977
INSPECTORS: T. Young
REPORT DATE: Not specified
SIGNED BY: T. Young
TYPE OF REPORT: Narrative

REPORT REVIEWED BY: Not specified
"591" TYPE FORM USED: No
ENF. LETTER DATE: 10-27-77
DATE OF LICENSEE RESPONSE: None
DATE OF STATE ACKNOWLEDGEMENT: No follow-up
TYPE OF INSPECTION: Complete, Unannounced

6. LICENSEE: Dale Electronics, Inc.
ADDRESS: Columbus, Nebraska
LIC. NO: 10-02-01
LICENSE TYPE: Industrial Manufacturing
INSP. DATE: 4-9-80
INSPECTORS: K. Steele, D. Jacobson
REPORT DATE: Not specified
SIGNED BY: K. Steele, D. Jacobson
TYPE OF REPORT: Narrative
REPORT REVIEWED BY: Not specified
"591" TYPE FORM USED: No
ENF. LETTER DATE: 4-23-80
DATE OF LICENSEE RESPONSE: 5-9-80
DATE OF STATE ACKNOWLEDGEMENT: 6-4-80
TYPE OF INSPECTION: Complete, Announced

7. LICENSEE: Lutheran Hospital
ADDRESS: 1201 South 9th Street, Beatrice, Nebraska
LIC. NO: 03-01-01
LICENSE TYPE: Medical Institution
INSP. DATE: 3-17-81
INSPECTORS: K. Steele, L. Jablonski
REPORT DATE: 3-17-81
SIGNED BY: K. Steele, L. Jablonski
TYPE OF REPORT: Format
REPORT REVIEWED BY: Not specified
"591" TYPE FORM USED: No
ENF. LETTER DATE: Missing
DATE OF LICENSEE RESPONSE: 4-9-81
DATE OF STATE ACKNOWLEDGEMENT: 4-30-81
TYPE OF INSPECTION: Complete, Unannounced

8. LICENSEE: Archbishop Bergan Mercy Hospital
ADDRESS: 7500 Mercy Road, Omaha, Nebraska
LIC. NO: 01-09-01
LICENSE TYPE: Teletherapy
INSP. DATE: 2-8-80
INSPECTORS: D. Jacobson, K. Steele
REPORT DATE: Not specified
SIGNED BY: D. Jacobson, K. Steele
TYPE OF REPORT: Narrative
REPORT REVIEWED BY: Not specified
"591" TYPE FORM USED: No
ENF. LETTER DATE: N/A
DATE OF LICENSEE RESPONSE: N/A
DATE OF STATE ACKNOWLEDGEMENT: N/A
TYPE OF INSPECTION: Complete, Announced

COMPLIANCE FILES

Comment	1	2	3	4	5	6	7	8		
1. Licensee's emergency procedures not covered	X		X			X				
2. No clear coverage of previous items of noncompliance			X							
3. Lab results of samples collected by inspector not in report										
4. Inspection exit meeting not specified in report	X							X		
5. Incomplete coverage of radwaste package and shipping procedures										
6. Effluents not considered during the inspection		X								
7. Inadequate documentation of leak test records										
8. Lack of, or inadequate, interviews of workers	X	X								
9. License was overdue for inspection	X		X	X						
10. No indication of review of inspection report				X	X	X	X	X		
11. Documents filed out of order in folder or some documents missing							X			
12. Repeat violations not emphasized in enforcement letter										
13. Nothing on Q.A. program for manufactured sources or devices										
14. Unclear documentation of scope of inspection	X									
15. No evaluation of Mo-99 breakthrough procedures										
16. No description, or incomplete description, of facility										
17. Contamination wipes not performed by inspector		X					X			
18. Review or citation of Part 19 posting missing										
19. Inadequate description of personnel monitoring system										
20. No training program or inadequate evaluation of training		X		X						
21. RSO function not readily available at the facility										
22. Noncompliance item cited as a recommendation										
23. No information regarding the radioisotope committee										
24. No information regarding dose calibration procedures										

APPENDIX C

FIELD EVALUATION OF STATE INSPECTOR

On August 18, 1981, R. J. Doda met with Dave Jacobson at 8:30 a.m. in Omaha, Nebraska in anticipation of an accompaniment inspection at Creighton University. The inspection was scheduled to have covered the various users and Departments at Creighton University. However, Mr. Jacobson had learned the previous day that the Radiation Safety Officer (RSO) for the University had left on an overseas trip and would not be available for the inspection. The reviewer, in discussing this problem, learned that even though individual users at the University could be inspected, many of the other radiation safety records were under the sole purview of the RSO and, as such, a complete inspection could not be accomplished. Carrying out a partial inspection, such as this, did not seem to be justified in light of the present workload in the Omaha office; therefore, alternative inspections were considered. Discussions with Mr. Jacobson indicated that his number one priority was a license review for the Regional Nuclear Pharmacy at the University of Nebraska Medical Center. After a rather detailed discussion with Mr. Jacobson concerning this effort, the reviewer suggested a prelicensing visit to the Regional Nuclear Pharmacy might best satisfy the requirements for the accompaniment and produce the greatest benefits for the Omaha office.

The Division of Radiological Health had decided earlier that separate facility licenses would be desireable for the University of Nebraska at Lincoln, the University of Nebraska Medical Center in Omaha, and the University of Nebraska Regional Nuclear Pharmacy in Omaha. In the past, one license had covered these separate facilities and these various activities. The Division had experienced some difficulties in the administrative and organizational aspects of this arrangement. There were some difficulties experienced in or during inspections regarding management oversight and program administration.

This led to the Division's request for separate license applications and, in particular, the receipt of the license application from the University of Nebraska Regional Nuclear Pharmacy on April 30, 1981. This license application was signed by Neil A. Vanselow, Chancellor. The license application named Samuel C. Augustine and Diane Daley-Beto as Registered Pharmacists and Mr. Thomas F. Young as Radiation Protection Officer. This application was received in response to the Division's March 30, 1981 letter, which requested a separate license application from the Regional Nuclear Pharmacy. The license application was reviewed in detail by D. A. Jacobson, which resulted in a letter to the applicant dated May 29, 1981, requesting further information on six different items, such as: 1) calibration procedures for the scintillation detectors, 2) waste disposal methodology for long lived radioisotopes other than liquids, as indicated in the application, and 3) the provision of calculations indicating concentrations in restricted and unrestricted areas for xenon-133 activities in the preparations laboratory, etc. The applicant replied on August 6, 1981 with detailed responses to these separate items. Therefore, the purpose of the prelicensing visit was to review the methods and equipment which the applicant had described in his recent letter.

The inspector proceeded to the Radiation Safety Office for the University of Nebraska Medical Center. He first met with Tom Young, RSO, and discussed the purpose of his visit. We then proceeded to the preparations laboratory and

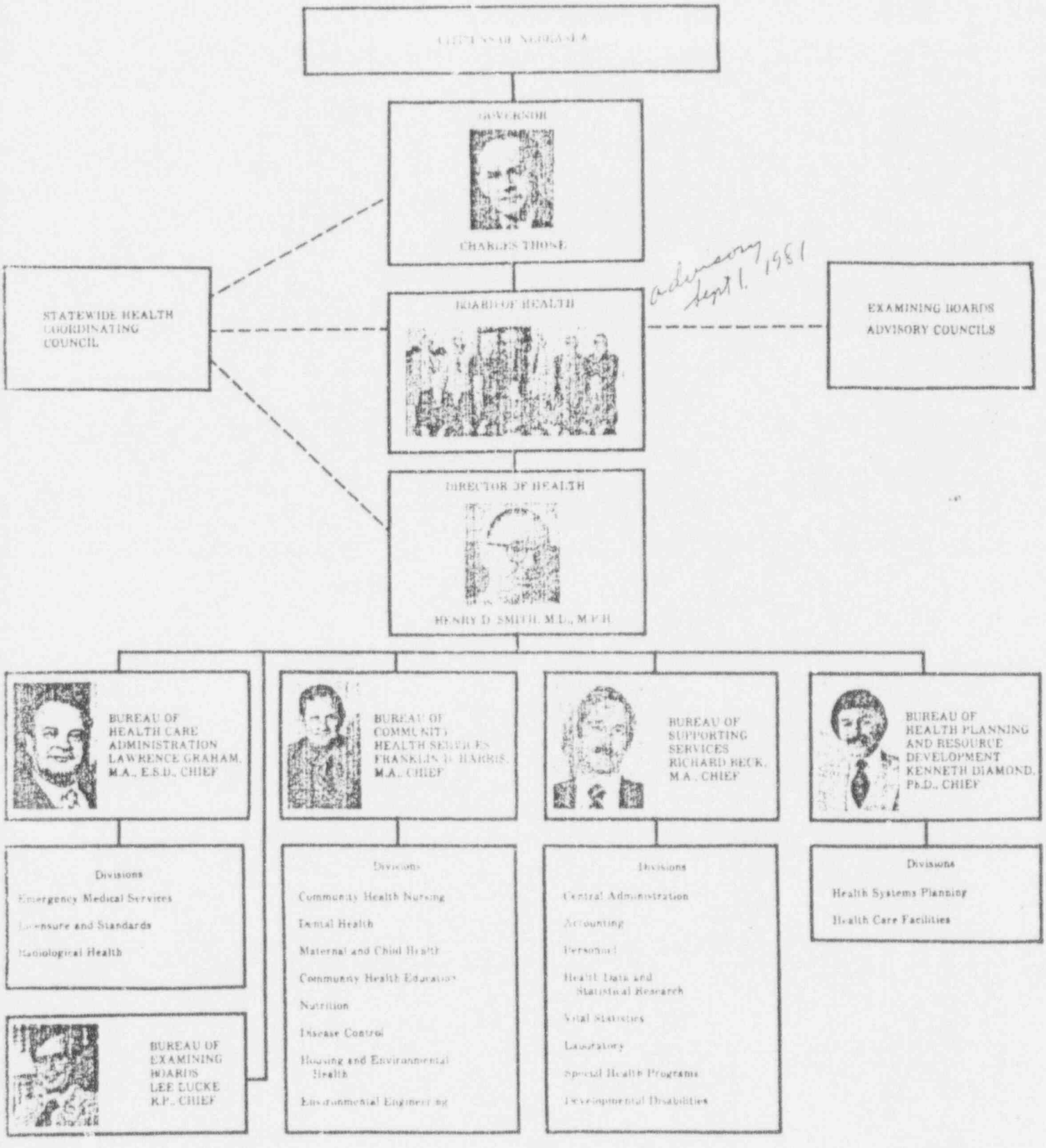
the inspector began a series of questions which were related to information provided in the applicant's last letter. On the way to the laboratory, we met briefly with Dr. Merton Quaife, Director of the Nuclear Medicine Department, and Mr. Tom Smith, Vice Chancellor for Business and Finance for the University. In the laboratory, we donned contamination booties and were instructed in the safety and control procedures used by the laboratory. We then toured the laboratory and viewed the shipping area, the packaging area, the various preparations areas, and the radioactive materials storage area.

The inspector first determined that the portable beta-gamma survey instruments used to survey technetium-99m would be calibrated by relative intercomparison with an ionization type instrument using uncalibrated technetium-99m standards. The ionization type instrument would be calibrated with NBS traceable standards of cesium-137 or radium-226 prior to the intercomparison with the GM survey instrument. The inspector also noted that a 250 uCi barium-133 standard would be used to check the dose calibrator accuracy, relative to iodine-131 energies. The inspector next checked the calibration procedures for scintillation detectors. He found out that wipe tests for determination of removable contamination would be measured by a three inch thallium-activated sodium-iodide crystal in a Packard Tri-Carb Model 3330. Other radionuclides dispensed by the Regional Nuclear Pharmacy could also be detected utilizing this equipment and counts exceeding three standard deviations from the net background count would be considered significant and would require decontamination of the appropriate area. A cesium-137 standard would be used as a constancy check source. The laboratory is using a chi square test with a cesium-137 standard and this is performed weekly. Most of this information was supplied by Mr. Augustine, the Senior Registered Pharmacist in the laboratory. Mr. Augustine indicated that the leak testing procedure performed by the laboratory consists of wiping the area of the source holder most suspected of contamination with a solvent-moistened cotton swab. The swab then is measured by a calibrated gamma spectrometer. The inspector next proceeded to questions concerning the waste disposal survey and where they would be performed. Mr. Augustine indicated that radiation levels of solid radioactive waste which had been decayed for several lifetimes would be measured within restricted environs of the Regional Nuclear Pharmacy, where background radiation levels are less than .02 millirem per hour. The inspector seemed to be satisfied with these answers. We then left the laboratory and went to another office where the last two unresolved questions were discussed in some detail. The inspector found out from the RSO what the Regional Nuclear Pharmacy's waste disposal methodology would be for long lived isotopes, other than liquids. The RSO indicated that radionuclide standards or other radionuclides for which an IND has been accepted by the FDA and which have served their usefulness in the laboratory, would be disposed of by one of the following means: 1) transfer to an individual authorized by a specific radioactive material license to utilize radioactive material for research and development or instructional purposes, 2) discard as solid radioactive waste after being held for decay to background levels as measured with an appropriate gamma spectrometer, or 3) return to the manufacturer for disposal. The last item discussed with the RSO was xenon-133 handling procedures. Some of the calculations for emergency procedures and resulting concentrations in restricted and unrestricted areas for xenon-133 were examined. The calculations that were checked appeared to indicate that no individual in the preparatory section of the Regional Nuclear Pharmacy would inhale a quantity of xenon-133 in one calendar quarter which would be greater than the quantity that would result from inhalation of concentrations per Part 20 restrictions.

The laboratory's emergency procedures seemed to indicate that they had covered a maximum credible accident situation in which the entire contents of a cylinder containing xenon-133 would be released in the preparations section of the Regional Nuclear Pharmacy. This quantity is 1 Ci of xenon-133. Since these calculations were greatly dependent on air volume flow rate in the fume hood in the preparation laboratory, the inspector again visited the laboratory and determined this flow rate with a velometer provided by the RSO. The inspector had taken no equipment with him during this prelicensing visit. The inspector was not completely satisfied with the examinations of the hoods and the air volume flow rates. He indicated that he would check these calculations and licensee's figures more thoroughly back at his office.

We then held a summary meeting with Mr. Rohn J. Butterfield, Assistant Director, University of Nebraska Hospital and Clinic. Mr. Jacobson explained the purpose of our visit to Mr. Butterfield and indicated what the general results of this visit were. It had solved a number of questions that Mr. Jacobson had relative to the application. There was one (1) unresolved question, that being the xenon-133 emergency procedures and the xenon-133 hoods and exhaust systems for those hoods. It was suggested by the inspector that if he had further questions, he would call the RSO or make another short visit to the facility. Since this was not a formal inspection, there were no violations and no recommendations made.

At the conclusion of this visit, the inspector was told that his review techniques and line of questioning appeared to be very good for the purposes of this visit. The areas examined in the laboratory were very specific to the unresolved issues contained in the application. The inspector, of course, was very familiar with this particular facility and had performed inspections there previously under the old license. However, the information he gained was very important for the issuance of the new license specific to the Regional Nuclear Pharmacy. The reviewer indicated to the inspector that one area, which was touched on slightly during the visit, might need more thorough evaluation. This was the laboratory's procedures regarding training and instructions to workers. This was a very busy nuclear pharmacy and it appeared that there were different shifts which involved a significant number of personnel. In fact, this is one of the few pharmacies in the nation that is operated by a State University. In this regard, inservice training for pharmacy students would also be important. One other item the reviewer noted during the visit was that even though we went through a very closely controlled procedure to enter the laboratory (i.e., donning booties and stepping over a control line), a janitor was observed to enter the area with a floor polisher, proceed with the polishing of floors in one-half of the laboratory, and then exit with no precautionary procedures at all. The floor polisher was then rolled down the hall and put into a storage room at the end of the hall. The inspector replied that there would be an early inspection after the license is granted and that some of the lab's procedures would be examined very closely at that time.



advisory Sept 1, 1981

APPENDIX D

APRIL 1980

DIRECTOR OF HEALTH
HENRY D. SMITH, M.D., M.P.H.

RADIATION ADVISORY COUNCIL

BUREAU OF HEALTH CARE ADMINISTRATION
ASSISTANT DIRECTOR OF HEALTH, LAWRENCE GRAHAM, M.S.

MAN-HOURS
.10

DIVISION OF RADIOLOGICAL HEALTH
DIRECTOR, H. ELLIS SIMMONS, M.P.H.

ADMINISTRATION .6
INSPECTION, LICENSING .2
OTHER .2

SECRETARY I
JOYCE BROWN

CLERK TYPIST III
TRUDY HILL

OMAHA OFFICE ----------

DAVID JACOBSON, M.P.H.
RADIOLOGICAL HEALTH SPECIALIST IV

LICENSING & INSPECTION RADIOACTIVE MATERIAL .7
EMERGENCY PLANNING .2
X-RAY, ACCELERATOR INSPECTION & OTHER DUTIES AS ASSIGNED .1

KENNETH STEELE, B.S.
RADIOLOGICAL HEALTH SPECIALIST III

LICENSING & INSPECTION RADIOACTIVE MATERIAL .7
DENT .1
X-RAY, ACCELERATOR INSPECTION & OTHER DUTIES AS ASSIGNED .2

BRUCE HAUTZENRODER, B.S.
RADIOLOGICAL HEALTH SPECIALIST II

FEDERAL COMPLIANCE INSPECTIONS, X-RAY .7
X-RAY INSPECTIONS .3

The radiation chemist has been removed from the Division of Radiological Health and is under the Division of Laboratories, Director John Blosser

MARCELLA ROWE, B.S.
RADIOLOGICAL HEALTH SPECIALIST II

ENVIRONMENTAL MONITORING & ~~AUDIO~~ Radio CHEMISTRY LAB 1.

LEO JABLONSKI, B.S.
RADIOLOGICAL HEALTH SPECIALIST I

X-RAY COMPLIANCE INSPECTIONS .9
OTHER DUTIES AS ASSIGNED .1

Radiation Health Council

Radiation Health Physics	Julius E. Haes, Jr. Radiation Safety Officer University of Nebraska Personnel & Risk Management Radiation Health & Safety Program 501 Building Lincoln, Nebraska 68588
Radiology	Russell J. McIntire, M.D. Mary Lanning Memorial Hospital 715 North St. Joseph Avenue Hastings, Nebraska 68901
Nuclear Medicine	Merton A. Quaife, M.D. Department of Nuclear Medicine University of Nebraska Medical Center 42nd and Dewey Avenue Omaha, Nebraska 68105
Dentistry	Ray Alcox, D.D.S. 5860 Locust Lincoln, Nebraska 68516
Law	Kenneth H. Elson P.O. Box 1353 Grand Island, Nebraska 68801
Labor	Thomas E. Chapman Route 2 Box 170 Blair, Nebraska 68008
Agriculture	Robert A. Olson 6701 South 176th Street Walton, Nebraska 68461
Industry	Leo Lessor Box 98 Brownville, Nebraska 68321
Chiropractor	Raymond Stover, D.C. 836 N. Lincoln West Point, Nebraska 68788
Liaison Between Board of Health & RAC	John Estabrook 8303 Dodge Omaha, Nebraska 68114

APPENDIX E

MEMORANDUM OF UNDERSTANDING
BETWEEN
PERSONNEL AND RISK MANAGEMENT, UNIVERSITY OF NEBRASKA-LINCOLN
THE DEPARTMENT OF HEALTH, STATE OF NEBRASKA

Subject: Radiation Health Service

A. Background.

Various schools, colleges and departments of the University of Nebraska-Lincoln are using an appreciable quantity of radionuclides and have numberous devices which may produce ionizing and nonionizing radiation. Those sources may affect a sizable segment of the population of the State if improperly utilized. Health and Safety, Personnel and Risk Management Department, maintains a staff to supervise a radiation protection program.

The staff at UNL have contact with students and the general public to enhance the understanding of the safe use of radiation throughout the State of Nebraska and to enhance a statewide appreciation for the Division of Radiological Health, Department of Health, for its role in the regulated safe use of radiation.

B. Objective.

The Radiation Safety activities of the Department of Environmental Health and Safety are planned and operated to offer a complete radiation protection program for all staff members, employees and students of UNL.

C. Operations.

1. The possible exposure of personnel is monitored by an extensive film badge and bioassay program with control records system.

2. Field monitoring instruments are used on a routine inspection and survey basis for detection of possible underdesirable levels of radiation.

3. Counting equipment is maintained and swipe-test and other appropriate checks are made to determine possible environmental contaminants.

4. A centralized radionuclide waste collection, storage, and disposal area is operated.

5. A centralized radionuclide accountability program is in effect.

6. A program of academic teaching and in-service training is operated.

APPENDIX F

7. Emergency plans for handling radiation incidents exist in conjunction with the Nebraska Radiation Emergency Response Plan.

8. The UNL management is committed to the ALARA concept.

9. Miscellaneous activities in radiation health complete a balanced protection program.

D. The Personnel and Risk Management Department realizes that this is a valuable service to the State of Nebraska and states that funds used in conducting this program are from State sources. The Personnel and Risk Management Department also agrees that records and reports of this program are available to the State Department of Health as well as personnel and equipment in this operation which may be used for consultation and emergency operations and/or special needs if necessary.

E. The State Department of Health recognizes that the above delineated services are valuable to the State. The Department agrees to make equipment and personnel available to the University for special or emergency use or to augment the radiation health equipment of UNL where practical. The State Department of Health considers the expenditures of this program to be in the public interest.

This memorandum is a recapitulation of verbal understandings between the agencies dated from July 1, 1980, and shall remain in effect until June 30, 1981.

August 8, 1980
DATED

Roy D Loudon Jr.
ADMINISTRATOR, PERSONNEL AND RISK

August 12, 1980
DATED

Harold D Smith
DIRECTOR OF HEALTH, STATE OF NEBRASKA

MEMORANDUM OF UNDERSTANDING
BETWEEN THE
NEBRASKA STATE DEPARTMENT OF HEALTH
AND THE
NEBRASKA STATE DEPARTMENT OF ENVIRONMENTAL CONTROL

1.

Pursuant to Chapter 71, article 35, Reissue Revised Statutes of Nebraska, 1943, the RADIATION CONTROL ACT, the Nebraska State Department of Health has regulatory authority over the utilization of sources of radiation, including radioactive material. Such radioactive material encompasses hazardous radioactive waste.

2.

Pursuant to Chapter 81, article 15, Reissue Revised Statutes of Nebraska, 1943, As Amended, the ENVIRONMENTAL PROTECTION ACT, as revised by the provisions of Laws 1980, LB853, the Nebraska State Department of Environmental Control has regulatory authority over the disposal or storage of hazardous wastes. Such hazardous wastes include certain types of hazardous radioactive waste.

3.

Since it was neither the intent nor the purpose of Laws 1980, LB853, to preempt the authority of the Department of Health in regard to radioactive material, the Department of Health and the Department of Environmental Control hereby enter into this memorandum of understanding whereby they mutually agree that the Department of Health will continue to regulate the management of hazardous radioactive waste in the State of Nebraska.

AGREED FOR THE DEPARTMENT OF HEALTH

September 17, 1980
DATE

Henry D. Smith
HENRY D. SMITH, M.D., M.P.H.
DIRECTOR OF HEALTH

AGREED FOR THE DEPARTMENT OF ENVIRONMENTAL CONTROL

September 23, 1980
DATE

Dan T. Drain
DAN T. DRAIN
DIRECTOR OF ENVIRONMENTAL CONTROL

EQUIPMENT

2 Radiation Monitors/Eberline
1 Geiger Counter/Ludlum
1 Thyac 2 Survey Meter/Victoreen
1 Scintillation Survey Meter/Victoreen
1 Model 440 Survey Meter/Victoreen
1 Model 488S Neutron Survey Meter/Victoreen
1 Model 130 Detector/Victoreen
2 702 Alpha Scintillation Probes/Victoreen
1 Model 154 Detector/Victoreen
1 Model 131 Detector/Victoreen
1 Radiation Counting System/Nuclear
1 Microwave Oven Survey Meter
1 Model 633 Detector/Victoreen
1 Model 326 Detector/Victoreen
1 Model 621 Detector/Victoreen
1 X-Ray Inspection Kit/Nuclear Associates Inc.
1 Model RT-1 Radiation Monitor/Eberline Instrument Corp.
1 X-Ray Survey Kit/Nuclear Associates Inc.
3 Nuclear Air Sampler/The Bendix Corporation
1 Model 70 R-Meter/Victoreen
1 Model 489-4 Beta-Gamma Probe/Victoreen
1 Model 570 R-Meter/Victoreen
1 Model 1015C X-Ray Monitor/MDH Industries, Inc.
1 Scintillation Gamma Probe/Eberline
1 Alpha-Beta-Gamma-Hand Probe/Eberline
1 Ion Chamber/MDH Industries
1 Survey Meter/Victoreen
1 Ion Chamber/MDA Industries
1 Alpha Counter/Eberline
1 X-Ray Monitor/MDH Industries
1 Alpha-Beta-Gamma Hand Probe/Eberline
1 Alpha-Beta-Gamma Detector/Eberline
1 Gamma Scintillation Probe/Eberline
1 Lin-Log Pulse/Eberline
1 TLD Reader System/Victoreen
2 Survey Meters/Panoramic/Victoreen
1 Geiger Counter/Ludlum/Model 14/Ludlum Measurements, Inc.
1 Probe/Ludlum Measurements, Inc.
1 Probe/Alnor Insturment Co.
1 Probe/Ludlum Measurements, Inc.

APPENDIX G

STATE OF NEBRASKA

RADIOLOGICAL HEALTH SPECIALIST I

DEFINITION

Under immediate supervision, learns to perform and performs technical duties associated with radiological health programs including inspections of x-ray machines and collection of samples for radiological analysis; performs related work as required.

EXAMPLES OF WORK PERFORMED (Any one position may not perform all the duties listed nor do the listed examples include all the duties which may be performed in positions allocated to this job class.)

Inspects facilities that use radiation producing equipment, such as x-ray equipment, to determine adequacy of radiation shielding and compliance with radiological health regulations.

Recommends changes in equipment usage and operating procedures to reduce radiation exposure for equipment operators and patients.

Collects and conducts laboratory and counting work on radioactive levels in air, water, milk, and other selected samples to determine environmental levels of radiation.

Measures radiation levels with appropriate survey and counting instruments.

Prepares inspection and data reports and summaries.

Attends seminars and specialized courses to maintain and improve proficiency of the techniques of radiological investigations and assessments.

Calibrates and services radiological detection instrumentation.

Serves as an Emergency Response Team member to respond to any radiological accident within the state.

KNOWLEDGES, ABILITIES, SKILLS, AND PERSONAL CHARACTERISTICS REQUIRED AFTER APPOINTMENT (The knowledges, abilities, skills, and/or personal characteristics listed below are necessary to perform the work assignments of this class, and may typically be acquired after being hired.)

Knowledge of: the principles and practices of radiological health pertinent to control and elimination of radiological health hazards; the equipment and techniques used in the investigation and determination of radiation levels; the rules and regulations governing the use of radioactive materials and radiation producing equipment; the operation of radiation producing equipment.

Ability to: recognize, locate, and identify radiation health hazards.

APPENDIX H

MINIMUM QUALIFICATIONS

KNOWLEDGES, ABILITIES, SKILLS, AND PERSONAL CHARACTERISTICS REQUIRED AT ENTRY (The following knowledges, abilities, skills, and/or personal characteristics are required of persons when they are hired. Written, performance, or oral examinations and/or an evaluation of education and experience may be used to evaluate applicants' relative possession of these knowledges, abilities, skills, and/or personal characteristics.)

Knowledge of: the principles of mathematics to include algebraic and calculus calculations.

Ability to: acquire the knowledges and techniques related to radiation detection, rules, and regulations governing radiation sources and facilities, and inspection of facilities using radiation detection equipment; make decisions based upon technical understanding of radiological health oriented State and Federal laws, rules, and regulations; communicate orally and in writing with individuals and groups; interact with agency staff, representatives of facilities using radiation materials and equipment, other governmental officials, and the public to establish and maintain work relationships.

EDUCATION AND EXPERIENCE (The knowledges, abilities, skills, and/or personal characteristics in this section may be acquired through, but are not limited to, the following combination of education and/or experience.)

Post high school coursework/training in: radiological health, physical, or life sciences, occupational or health safety, or nuclear or x-ray technology.

SPECIAL NOTE

Subsequent training available through federal agencies makes a Bachelor's degree or its equivalent in one of the above areas highly recommended.

Overnight and/or regular day travel outside of the city of residence is required of incumbents in this job class.

STATE OF NEBRASKA

RADIOLOGICAL HEALTH SPECIALIST II

DEFINITION

Under general supervision, performs radiological health assessments of radioactive materials or radiation producing devices including the inspection and control of radiation and the investigation of unusual occurrences of radiation; performs related work as required.

EXAMPLES OF WORK PERFORMED (Any one position may not perform all the duties listed nor do the listed examples include all the duties which may be performed in positions allocated to this job class.)

Inspects radiation producing equipment to determine the adequacy of radiation shielding and to evaluate the radiation exposure of operators, patients, or others in the immediate vicinity.

Interviews and observes operating staff regarding their compliance with regulations in the use of radiation and the procedures used in operating radiation producing equipment.

Provides training, consultation, and technical advice to users and interested parties on radiological health matters including environmental surveillance, medical and industrial x-ray usage, radioisotope usage, and waste disposal.

Interprets and applies State and Federal laws, rules, and regulations regarding the use of radiation and the standards for protection against radiation exposure.

Analyzes radioisotopes in a radio-chemical laboratory to quantify radioactivity and to record results.

Reviews license applications and prepares licenses for applicants including educational, industrial, and medical users, based on established standards of radiation safety.

Investigates registered and licensed radiation installations to evaluate hazards associated with the use of radiation sources.

Evaluates contamination and concentration of radioactive materials and to formulate a basis for recommending decontaminating measures.

Prepares inspection reports and correspondence containing information for compliance with appropriate laws, rules, and regulations to minimize exposure of employees and the public to radiation.

Operates and adjusts radiation detection instruments to identify radiation hazards and to calibrate and service all types of radiation instruments.

Attends meetings, conferences, seminars, and specialized courses to maintain and improve proficiency in the techniques of radiological investigations and assessments.

Analyzes radiological health data obtained, through the collection and laboratory analysis of samples to, provide findings for report preparation.

Serves as an Emergency Response Team member to respond to any radiological accident within the state.

ESTABLISHED: May 1, 1973 REVISED: March 1, 1981 NEIS CODE: M448522

RADIOLOGICAL HEALTH SPECIALIST II (Continued)

KNOWLEDGES, ABILITIES, SKILLS, AND PERSONAL CHARACTERISTICS REQUIRED AFTER APPOINTMENT (The knowledges, abilities, skills, and/or personal characteristics listed below are necessary to perform the work assignments of this class, and may typically be acquired after being hired.)

Knowledge of: the techniques of radioactive waste disposal.

Ability to: cope with radiation emergencies; analyze plans, specifications, and other documents related to radiation control.

MINIMUM QUALIFICATIONS

KNOWLEDGES, ABILITIES, SKILLS, AND PERSONAL CHARACTERISTICS REQUIRED AT ENTRY (The following knowledges, abilities, skills, and/or personal characteristics are required of persons when they are hired. Written, performance, or oral examinations and/or an evaluation of education and experience may be used to evaluate applicants' relative possession of these knowledges, abilities, skills, and/or personal characteristics.)

Knowledge of: Federal and State laws, rules, and regulations governing the use of radiation; the properties and biological effects of radiation; the procedures of radiation detection, instrumentation and measurement; the kinds and operations of radiation producing equipment; the operation and calibration of radiation laboratory and monitoring equipment; the principles of mathematics to include algebraic and calculus calculations; the principles of chemistry pertinent to radiological health assessments; the principles of physics pertinent to radiological health investigations; the principles of biology pertinent to radiological health assessments; the principles and practices of radiological health as they relate to the recognition, control, and elimination of radiological health hazards.

Ability to: recognize, locate, and identify radiation health hazards; make decisions based upon technical understanding of State and Federal laws, rules, and regulations; communicate orally and in writing with individuals and groups; prepare and analyze technical reports, and facility and environmental studies; interact with agency staff, other public officials, and the public to establish and maintain work relationships; interpret and apply State and Federal laws, rules, and regulations; service and calibrate radiation detection instruments; plan, organize, and schedule the details of inspection projects.

EDUCATION AND EXPERIENCE (The knowledges, abilities, skills, and/or personal characteristics in this section may be acquired through, but are not limited to, the following combination of education and/or experience.)

Post high school coursework/training in: radiological health, physical, or life sciences, occupational or health safety, or nuclear or x-ray technology, AND experience in conducting technical activities in a radiological program such as: collecting and analyzing samples for radioactivity levels; operating radiation survey and counting instruments; servicing and calibrating radiation detection instruments; or inspecting facilities using radioactive materials and/or equipment.

SPECIAL NOTE

Subsequent training available through federal agencies makes a Bachelor's degree or its equivalent in one of the above areas highly recommended.

Overnight and/or regular day travel outside of the city of residence is required of incumbents in this job class.

STATE OF NEBRASKA

HEALTH PHYSICIST

DEFINITION

Under limited supervision, performs radiological health and safety work involving the detection, investigation, analysis, evaluation, and control or elimination of radiation potentially hazardous to health, and participates in the resolution of radiological health problems in a regulatory, educational, and consultative radiological health program; performs related work as required.

EXAMPLES OF WORK PERFORMED (Any one position may not perform all the duties listed nor do the listed examples include all the duties which may be performed in positions allocated to this job class.)

Plans, implements, and directs an assigned area of a comprehensive state-wide radiation control program to enforce State and Federal laws, rules, and regulations.

Reviews applications for licenses, renewals, and amendments for use of radioactive material by radioactive materials users such as hospitals, universities and private physicians to determine if radioactive material can be used in a safe and controlled environment.

Inspects radioactive material licensed facilities for compliance with State radiological health regulations, U.S. Department of Transportation regulations, conditions of each license, and procedures contained in license applications and correspondence.

Issues licenses in accordance with radiological health regulations, Nuclear Regulatory Commission and Agreement State licensing practices, and legal interpretations.

Evaluates actual performance of the licensees' operation to determine aspects of health and safety.

Issues violation notices and evaluates corrections made.

Evaluates requests of out-of-state licenses to perform services in Nebraska under reciprocity agreements.

Provides information, technical assistance, and consultation to licensees and interested parties on regulations, general radiation safety, and non-ionizing radiation sources.

Evaluates plans for new x-ray facilities in regard to shielding and radiation safety practices.

Services air sampling equipment and radiation monitoring equipment used for emergency response and continuous monitoring at nuclear power plants.

Calibrates radiological survey equipment.

Serves as an Emergency Response Team leader to monitor any release within the state of radioactive material to the environment.

Investigates instances involving radioactive materials where a possible personnel overexposure may have occured.

Conducts x-ray inspections.

Trains new agency staff in the areas of dental and medical x-ray inspection, emergency response, environmental surveillance, radioactive material licensing and inspections, and procedures for inspection and enforcement of the radiological health regulations.

HEALTH PHYSICIST (Cont' ed)

KNOWLEDGES, ABILITIES, SKILLS, AND PERSONAL CHARACTERIS ..CS REQUIRED AFTER APPOINTMENT
(The knowedges, abilities, skills, and/or personal characteristics listed below are necessary to perform the work assignments of this class, and may typically be acquired after being hired.)

Knowledge of: the practices and procedures of planning and implementing radiological health proc am activities.

Ability to: direct and coordinate radiological health activities.

MINIMUM QUALIFICATIONS

KNOWLEDGES, ABILITIES, SKILLS, AND PERSONAL CHARACTERISTICS REQUIRED AT ENTRY (The following knowledges, abilities, skills, and/or personal characteristics are required of persons when they are hired. Written, performance, or oral examinations and/or an evaluation of education and experience may be used to evaluate applicants' relative possession of these knowledges, abilities, skills, and/or personal characteristics.)

Knowledge of: the principles and practices of radiation protection; State laws, rules, and regulations governing the procurement, use, storage, handling, disposal, surveillance, and monitoring of radiation sources; the principles of physics pertinent to radiological health investigations; the principles of chemistry pertinent to radiological health assessments; the principles of biology pertinent to radiological health assessments; the principles of mathematics to include algebraic and cauculus calculations; the medical, industrial, and research uses of radiation and radioactive materials; the practices of nuclear and atomic physics pertinent to radiological health investigations; the equipment and techniques used in the investigation, detection, and analysis of radiation levels.

Ability to: determine health hazard potentials from data collected during field studies and from the reports submitted as a result of radiation measurement, surveillance, and monitoring programs; prepare reports containing findings, conclusions, and recommendations in the field of radiation control; cope with radiation emergencies; analyze and interpret reports, plans, specifications, and other documents related to radiation control; communicate orally and in writing with individuals and groups; interact with agency staff, other public officials, and the public to establish and maintain work relationships; interpret and apply radiological health oriented State and Federal laws; rules, and regulations; service and calibrate radiation detection instruments; plan and direct a specific program area.

EDUCATION AND EXPERIENCE (The knowledges, abilities, skills, and/or personal characteristics in this section may be acquired through, but are not limited to, the following combination of education and/or experience.)

Post high school coursework/training in: radiological health, physical, or life sciences, occupational or health safety, or nuclear technology, AND experience in a radiological program which included: investigating and evaluating radiological hazards, analyzing radiological data, consulting with and providing technical assistance to users of radiological materials and/or equipment, and preparation of reports

SPECIAL NOTE

Subsequent training available through Federal agencies makes a Bachelor's degree or its equivalent in one of the above areas highly recommended.

Overnight and/or regular day travel outside the city of residence is required of incumbents in this job class.

STATE OF NEBRASKA

RADIOLOGICAL HEALTH DIVISION DIRECTOR

DEFINITION

Under administrative direction, plans, develops, implements, and directs the statewide radiological health program, and supervises professional and technical staff engaged in the detection, examination, and evaluation of radiation potentially hazardous to health; performs related work as required.

EXAMPLES OF WORK PERFORMED (Any one position may not perform all the duties listed nor do the listed examples include all the duties which may be performed in positions allocated to this job class.)

Plans, initiates, directs, and coordinates a radiological health program for the State including the review and survey of licenses and registrants of radiation equipment and radioactive materials to enforce the Radiation Control Act and radiological health regulations.

Identifies present and potential radiological health problems from inspections and surveys to provide technical guidance on the control and/or elimination of radiological health hazards.

Prepares legislation, rules, and regulations in the field of radiological health and consults with appropriate groups and individuals about their contents.

Reviews the results of surveillance programs to determine the extent of radioactive contamination of air, food, water, and other materials.

Participates in meetings and conferences with local officials, representatives of professional groups, industry and governmental representatives in regard to radiological health.

Prepares and presents informational and educational material for public groups, news media, and other interested groups.

Confers with representatives of the U.S. Nuclear Regulatory Commission and other Federal officials on the management of an Agreement State program for radioactive materials and on the radiological health related matters.

Coordinates activities of the State's Radiation Advisory Council.

Directs the development and implementation of the State's Radiation Emergency Response Plan.

Reviews agency record keeping practices to ensure the maintenance of licensees' and registrants' records.

Prepares reports and correspondence and supervises the collection of publications and information materials.

Evaluates and modifies radiological health program standards and practices to make and implement recommendations on proposed changes or new procedures.

RADIOLOGICAL HEALTH DIVISION DIRECTOR (Continued)

KNOWLEDGES, ABILITIES, SKILLS, AND PERSONAL CHARACTERISTICS REQUIRED AFTER APPOINTMENT (The knowledges, abilities, skills, and/or personal characteristics listed below are necessary to perform the work assignments of this class, and may typically be acquired after being hired.)

Knowledge of: the principles and practices of administration as applied to government operations.

Ability to: plan, direct, and execute a statewide radiological health program; develop solutions to radiological health problems to protect the public.

MINIMUM QUALIFICATIONS

KNOWLEDGES, ABILITIES, SKILLS, AND PERSONAL CHARACTERISTICS REQUIRED AT ENTRY (The following knowledges, abilities, skills, and/or personal characteristics are required of persons when they are hired. Written, performance, or oral examination and/or an evaluation of education and experience may be used to evaluate applicants' relative possession of these knowledges, abilities, skills, and/or personal characteristics.)

Knowledge of: the principles of radiological health as related to the recognition, control, and elimination of radiological health hazards; the equipment and techniques used in the investigation, determination, and analysis of radiation levels; State and Federal laws and regulations governing the use and control of radiation; the principles of physics pertinent to radiological health investigations; the principles of chemistry pertinent to radiological health assessments; the principles of biology pertinent to radiological health assessments; the principles of mathematics to include algebraic and calculus calculations; the medical, industrial, and research uses of radioation and radioactive materials; the practices of nuclear and atomic physics pertinent to radiological health investigations.

Ability to: plan and direct programs; analyze and evaluate conditions; communicate orally and in writing ideas and information; recognize radiation health hazards; interact with agency staff and subordinates, other public officials, private-sector groups, and the public; plan, organize, and supervise the work of subordinates; plan the working details of state-wide projects; cope with radiation emergencies; analyze and interpret reports, plans, specifications, and other documents related to radiation control; interpret and apply radiological health oriented State and Federal laws, rules, and regulations.

EDUCATION AND EXPERIENCE (The knowledges, abilities, skills, and/or personal characteristics in this section may be acquired through, but are not limited to, the following combination of education and/or experience.)

Post high school coursework/training in: radiological health, physical, or life sciences, occupational or health safety, or nuclear technology, AND experience in a radiological health program which included: the investigation and evaluation of radiological health hazards, reviewing plans and specifications for compliance with radiation use and control standards; planning of radiation safety programs; and consultation with and provision of technical assistance and information to users of radiological materials and/or equipment.

SPECIAL NOTE

Subsequent training available through federal agencies makes a Bachelor's degree or its equivalent in one of the above areas highly recommended.

TRAINING COURSES

1980 - 1981

APPENDIX I

Leo Jablonski: February 25 - May 2, 1980
Ten-Week Course in Health Physics and Radiation Protection
Oak Ridge, Tennessee

NRC Sponsored

H. Ellis Simmons: July 22, 1980
Workshop on Low-Level Radioactive Waste
Denver, Colorado

Sponsored by: Western Interstate Energy Board

Ken Steele: August 10-16, 1980
Radiation Protection Engineering Course
Oak Ridge Associated Universities
Oak Ridge, Tennessee

NRC Sponsored

Leo Jablonski: September 13-27, 1980
Orientation Course in Licensing Practices and Procedures
Silver Springs, Maryland

NRC Sponsored

H. Ellis Simmons: October 6-9, 1980
Agreement State Meeting
Atlanta, Georgia

NRC Sponsored

Marcy Rowe: October 19-25, 1980
Radiochemistry for State Regulatory Personnel Course
Idaho Falls, Idaho

NRC Sponsored

Bruce Hautzenroder: October 20-23, 1980
David Jacobson: Region V and Region VII Radiological Health Training Meeting
H. Ellis Simmons: Iowa City, Iowa
Ken Steele

H. Ellis Simmons: National State Liaison Officer's Meeting
Washington, D.C.

NRC Sponsored

Leo Jablonski: March 23-27, 1981
Training Course in Medical Use of Radionuclides for State Personnel
New York City, New York

NRC Sponsored

H. Ellis Simmons: May 1-7, 1981
Ken Steele Credentialing Meeting and Annual Conference of Radiation Control
Little Rock, Arkansas

Sponsored by: Conference of Radiation Control Program Directors

Bruce Hautzenroder: June 10-11, 1981
Leo Jablonski: Training Session for Revised Routine Compliance Testing for Diagnostic X-Ray Systems
Kansas City, Missouri

FDA Sponsored

Procedures for Enforcement Actions of Rules and Regulations

The policy for enforcement of rules and regulations is as follows:

The Division has the right to inspect any license or registrant at a reasonable time (office hours). The Division may inspect at other times providing adequate prior notification has been made to the owner or user of such sources of radiation.

The results of any surveys or inspections of sources of radiation conducted by the Department shall be withheld from public inspection unless disclosure is approved by the Division Director as in the public interest.

Prior to making an inspection, the owner or user is informed that the Department is there to inspect the licensee's or registrant's facility. Briefly inform the licensee or registrants the purpose of the inspection, time involved, assistance needed. Do not interfere with their daily routine if at all possible. The Department is there to provide a service, information, and to enforce the rules and regulations. Give the licensee or registrants a brief summary of the results of the inspection. The results may be left by completing an inspection result form if the items of noncompliance are minor, or they may be sent by form letter.

It is necessary that we request the licensee or registrant to respond within a certain time frame on how and when they will be in compliance with the regulations (usually 30-days).

If health and safety are a factor, more immediate action may be necessary.

The Department needs assurance that the licensee or registrant complies with the regulations by means of corrected deficiencies; therefore, the best judgment of the health physicist will be used to determine if a reinspection is needed to determine compliance.

APPENDIX J

ESCALATED ENFORCEMENT ACTION PROCEDURES

A. For those licensees or registrants whose compliance problems are significant, such as failure to comply with rules or regulations, the health physicist will arrange an informal hearing (management conference).

The Director of the Division or his designate may assist the health physicist as needed.

B. Radiation sources may be impounded by the health physicist only on approval by the Director. Justification for impoundment of sources must relate to radiation health and safety. Impoundment may be securing of sources, such as removal from license or registrant, placing under lock and key, or seize and hold under custody of law. Justification for impoundment must be health and safety of people placed in jeopardy or a significant probability that detrimental health effects will result from radiation exposure.

C. The Department of Health is not authorized to levy civil penalties.

D. Licenses may be modified by regulation Section C.50 (Rule 40, Subsection (3)(c)) for health and safety reasons by the Director of the Division of Radiological Health to require new conditions of the licensee to properly manage health and safety.

E. Licenses may be suspended by the Director for violation of regulation Section C.50 (Subsection (3)(x), Rule 40) for failure to comply with conditions of the license or of a regulation.

F. Licenses may be revoked officially by the Director for gross negligence of the licensee; when licensee does not manage licensed material, or when health and safety are a factor.

All of the above may be accomplished by written order of the Director for just cause as provided by Nebraska's Radiation Control Act.

The Director of Health shall be kept informed and shall make the final decision and sign any actions concerning orders.

Registrants are likewise subject to orders to cease and desist.

Any violation of orders requires a county attorney or the attorney general to file application to District Court enjoining such acts or practices by a permanent or temporary injunction, restraining order or other order.

G. Violations of provisions of the Nebraska Radiation Control Act shall be grounds for the court on conviction to fine the licensee or registrant.

Statement of Underlying Authorities and Governing Legislation

A. Nebraska Radiation Control Act

The following sections and portion thereof provide the legal authority for enforcement actions.

71-3505(1) "Such rules and regulations may prohibit the use of radiation for uses found by the department to be detrimental to health and safety and shall carry out the purposes and policies set out in sections 71-3501 and 71-3502;"

"Violation of regulations adopted by the department pursuant to section 71-3501 to 71-3519 shall be due cause for the suspension, revocation, or limitation of a license issued by the department. Any licensee may request a hearing before the department on the issue of such suspension, revocation, or limitation. Procedures for notice and opportunity for a hearing before the department shall be pursuant to the provision of Chapter 84, article 9, and continued departmental suspension, revocation, or limitation subsequent to such a hearing shall also be subject to judicial review pursuant to such provisons;"

71-3505(7) Be empowered to inspect radiation sources, their shielding and surroundings for the determination of any possible undesirable radiation, or violations of rules and regulations promulgated by the department; and provide the owner, user or operator with a report of any known or suspected deficiencies;

71-3507(2) "Violation of the regulations adopted by the department pursuant to sections 71-3501 to 71-3519 shall be due cause for the suspension or revocation of a registration issued by the department. Any registrant may request a hearing before the department on the issue of such suspension or revocation. Procedures for notice and opportunity for a hearing before the department shall be pursuant to the provision of Chapter 84, article 9, and continued departmental suspension or revocation subsequent to such a hearing shall also be subject to judicial review pursuant to such provisions."

71-3507(4) The department shall have the right to make such surveys or inspections of sources of radiation as the department deems necessary for the control of undesirable radiation; Provided, that any such survey or inspection shall be performed at a reasonable time or with adequate prior notification by the department of the owner or user of such sources of radiation.

71-3507(6) The department shall have the right to survey or inspect again any source of radiation previously surveyed, without limitation of the number of surveys or inspections conducted on a given source of radiation; Provided, that the provisions of adequate notification as listed in subsection (4) of this section shall be complied with.

71-3513 Radiation; emergency regulation or order; effective date; hearing. Whenever the department finds that an emergency exists with respect to radiation requiring immediate action to protect the public health and safety, the department may, without notice of hearing, or submission to the coordinator or council, issue a regulation or order reciting the existence of such emergency and requiring that such action be taken as is necessary to meet the emergency. Notwithstanding any provisions of law, such regulation or order shall be effective immediately. Any person to whom such regulation or order is directed shall comply therewith immediately, but on application to the department shall be afforded a hearing not less than fifteen days and not more than thirty days after filing of the application. On the basis of such hearing, the emergency regulation or order shall be continued, modified or revoked within thirty days after such hearing, and the department shall mail the applicant a copy of its findings of fact and determination.

71-3514 Violation of act; restraining order. Whenever, in the judgement of the department, any person has engaged in or is about to engage in any acts or practices which constitute or will constitute a violation of any provisions of section 71-3501 to 71-3519, or any rule, regulations or order issued thereunder, the Attorney General or any county attorney may make application to the district court for an order enjoining such acts or practices, or for an order directing compliance, and upon a showing by the department that such person has engaged or is about to engage in any such sets or practices, a permanent or temporary injunction, restraining order, or other order may be granted.

71-3516 Emergency; impounding sources of radiation; department. The department shall have the authority in the event of an emergency affecting public health and safety to impound or order the impounding of sources of radiation in the possession of any person who is not equipped to observe or fails to observe the provisions of sections 71-3501 to 71-3519 or any rules or regulations issued thereunder.

71-3517 Violations; penalties. Any person who violates any of the provisions of section 71-3501 to 71-3519 or rules, regulations or orders in effect pursuant thereto of the department shall, upon conviction thereof, be fined not less than fifty dollars not more than two hundred dollars.

State Regulations

The following sections of Nebraska Regulations for Control of Radiation provide enforcement rules.

Sec. A.5 Inspections.

(a) Each licensee and registrant shall afford the Agency at all reasonable time opportunity to inspect sources of radiation and the premises and facilities wherein such sources of radiation are used or stored.

(b) Each licensee and registrant shall make available to the Agency for inspection, records maintained pursuant to these regulations.

Sec. A.7 Additional Requirements. The Agency may, by rule, regulation, or order, impose upon any licensee or registrant such requirements in addition to those established in these regulations as it deems appropriate or necessary to minimize danger to public health and safety or property.

Sec. A.8 Violations. An injunction or other restraining court order may be obtained by the Agency to prohibit any continued violation of any provision of the Act or any regulations or order issued thereunder. Any person who violates any provision of the Act or any regulation or order issued thereunder may upon conviction be punished in accordance with Section 71-3517 of the Act.

Sec. A.9 Impounding. Sources of radiation shall be subject to impounding pursuant to Section 71-3516 of the Act.

Sec. C.50 Modification, Revocation, and Termination of Licenses.

(a) The terms and conditions of all licenses shall be subject to amendment, revision, or modification whenever consented to by the licensee.

(b) Any license issued by the Department under authority of the State Radiation Control Act may be revoked, suspended, or limited for violation of these regulations.

(c) Except in cases of an emergency, no license shall be limited, suspended, or revoked unless, prior to the institution of proceedings therefor, facts or conduct which may warrant such action shall have been called to the attention of the licensee in writing and the licensee shall have been accorded an opportunity to demonstrate or achieve compliance with all lawful requirements.

(d) The Agency may terminate a specific license upon request submitted by the licensee to the Agency in writing.

Written Procedures for Implementation

A. The Director of Health has the authority to call hearing and issue orders. This authority has not been delegated.

B. Legal Counsel

1. The Department of Health has it own legal counsel who may assist in preparation of necessary orders for the Director of Health signature in coordination with Assistant Director of Health, Medical Care Administration and the Director, Division of Radiological Health.

   The Attorney General would file application for any violation of order issued by the Department to District Court.

2. Legal matters would be filed in a timely matter.

3. The Department's attorney and the Attorney General are sufficiently familiar with our Radiation Control Act and Regulations to act responsibly.

4. Adequate funds will be available through the Department to arrange for legal services as needed.

C. Other legal services which may be required.

1. The Department of Health has several hearing examiners with substantial experience in the Hearing process. They are selected by the Director of Health.

2. Court reporters are available as needed and paid by the Department.

3. Hearing rooms are available in the Department office facilities for public meeting.

4. The Department has its own notary public. Administrative inspection warrants are available from county court and district court. Any local or state law enforcement assistance is available as needed from county sheriffs and city police chiefs.

D. Off-Duty Enforcement Action.

Any off-duty enforcement action shall be determined by the Director of the Division, or in his absence by a Radiological Health Specialist IV or III in that order with concurrence of the Assistant Director of Health (Medical Care Administration) or the Director of Health.

Orders can be issued under emergency situation of severe radiation health and safety factors.

If life threatening is an issue an immediate oral order shall be issued followed by a written order.

In the event large numbers of the public are involved, the Radiation Emergency Response Plan would be activated.

E. Criteria for Escalated Enforcement Actions.

1. Immediate action will be taken to protect public health and safety for any radiation exposure with obvious harmful effects to humans. These levels are listed in Protection Action Guides of Nebraska Radiation Emergency Response Plan, Annex A.

2. The penalties are established by the Nebraska Radiation Control Act and the courts. The Department can and will impound sources, modify licenses, suspend license, revoke registration and licenses as necessary to protect public health and safety.

F. Public Notice and Participation.

The public will be advised of any emergency action to be taken in their behalf. If necessary, public hearing will be held to provide public information.

Radioactive Material License Inspection Priority

Priority I (Inspections Annually)

- Industrial Radiography
- Irradiators
- Distributors
- Type A Broad Scope Academic

Priority II (Inspections Every 3 Years)

- Nuclear Medicine
- Pacemaker
- Teletherapy
- Brachytherapy
- Well Logging
- Field Tracer

Priority III (Inspections Every 5 Years)

- Educational
- Calibration Sources
- Industrial Gauges - Inplant
- Industrial Gauges - Field
- Gas Chromatographs
- Other Licenses

August 1981

APPENDIX K

We recommend that all inspection reports be reviewed by a supervisor for adequacy of content and that this supervisory review be documented and dated on the inspection report. Also, inspection reports should contain a brief summary statement which gives the results of the questioning of workers and technicians concerning their operational procedures for the use of radioactive materials. This summary should indicate whether or not the licensee's training for and monitoring of operational procedures were being followed in practice.

We recommend that each inspection report include the names and titles of individuals from the licensee's management staff with whom the inspector met during the exit meeting. Because of the importance of the exit meeting to the overall inspection, it may be desirable to also indicate in inspection reports the highest level of management having responsibility for licensed operations that was contacted for, but was unable to attend, the exit meeting. This is a way to emphasize what you indicated was the Division's policy; to include the appropriate levels of management in exit meetings, whenever possible.

I appreciate the courtesy and cooperation extended to Mr. Doda by you and the entire radiation control program staff. I would appreciate your review of these recommendations and your comments on them.

Sincerely,

Original Signed by
DONALD A. NUSSBAUMER

Donald A. Nussbaumer
Assistant Director
for State Agreements Program
Office of State Programs

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Letter to Dr. H. D. Smith

cc: Dr. H. D. Smith
Mr. L. Graham
NRC Public Document Room
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bcc: J. Montgomery, RSL-IV

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