

DATED: JUNE 14, 1995

SIGNED BY: RICHARD L. BANGART

Mr. Douglas E. Bryant, Commissioner  
South Carolina Department of Health  
and Environmental Control  
2600 Bull Street  
Columbia, SC 29201

Dear Mr. Bryant:

This is to transmit the results of the NRC review and evaluation of the South Carolina radiation control program. This review, which concluded on March 24, 1995, was conducted by Mr. Richard L. Woodruff, Regional State Agreements Officer, Region II. The results of this review were discussed in a meeting with you and members of your staff on March 24, 1995.

As a result of our review of the State's program and the routine exchange of information between the NRC and the State, the staff has determined that, at this time, the South Carolina program for regulation of agreement materials is adequate to protect the public health and safety and is compatible with the regulatory program of the NRC.

Please note there has been a change in the format of this letter from our previous review letters. This letter summarizes the findings regarding all 30 program indicators as opposed to only discussing those indicators where deficiencies were noted. Enclosure 1 contains an explanation of our policies and practices for reviewing Agreement State programs. Enclosure 2 summarizes our review findings for program indicators where we have identified recommendations for improvement. We request specific responses from the State on the findings and recommendations in Enclosure 2 within 30 days of this letter.

Enclosure 3 presents a summary of the review findings where the State has adequately satisfied the indicators. A response to the items in Enclosure 3 is not required.

We were pleased with the improvements that have been made in the program since our last review. Specifically, we noted that the State does not have any licensing or inspection backlogs, regulations have continued to be updated and implemented in a timely manner, and our recommendations from the 1993 review have been resolved.

D. Bryant

- 2 -

I appreciate the courtesy and cooperation extended to Mr. Woodruff by your staff during the review.

Sincerely,

Richard L. Bangart, Director  
Office of State Programs

Enclosures:

1. Application of "Guidelines for NRC Review of Agreement State Radiation Control Programs"
2. Status of Previous Findings and Summary of Review Findings and Recommendations for the South Carolina Radiation Control Program March 24, 1993, to March 24, 1995
3. Summary of Assessment of Indicators Adequately Satisfied by the South Carolina Radiation Control Program

cc w/encl: Max K. Batavia, Chief  
Bureau of Radiological Health

Virgil R. Autry, State Liaison Officer

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cc w/encl: Max K. Batavia, Chief  
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Virgil R. Autry, State Liaison Officer

bcc w/encl: The Chairman  
Commissioner Rogers  
Commissioner de Planque  
Commissioner Jackson

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DCD (SP01)

PDR (Yes X NO \_\_\_)

State File

\*See previous concurrence

OFC	ORA:RSAO*	DRSS:RII*	RA:RII*	OSP:SPM*	OSP:DD*	
NME	RWoodruff	JStohr	SEbnetter	CHMaupin	PLohaus	
DTE	06/5/95	06/5/95	06/5/95	05/30/95	05/30/95	

OFC	NMSS:D*	OGC*	OSP:D			
NME	CPaperiello	FCameron	RBangart			
DTE	06/2/95	06/5/95	06/ /95			

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APPLICATION OF "GUIDELINES FOR NRC REVIEW  
OF AGREEMENT STATE RADIATION CONTROL PROGRAMS"

The "Guidelines for NRC Review of Agreement State Radiation Control Programs," were published in the Federal Register on May 28, 1992, as an NRC Policy Statement. The Guidelines provide 30 indicators for evaluating Agreement State program areas. Guidance as to their relative importance to an Agreement State program is provided by categorizing the indicators into two categories. Category I indicators address program functions which directly relate to the State's ability to protect the public health and safety. If significant problems exist in several Category I indicator areas, then the need for improvements may be critical.

Category II indicators address program functions which provide essential technical and administrative support for the primary program functions. Good performance in meeting the guidelines for these indicators is essential in order to avoid the development of problems in one or more of the principal program areas, i.e., those that fall under Category I indicators. Category II indicators frequently can be used to identify underlying problems that are causing, or contributing to, difficulties in Category I indicators.

It is the NRC's intention to use these categories in the following manner. In reporting findings to State management, the NRC will indicate the category of each comment made. If no significant Category I comments are provided, this will indicate that the program is adequate to protect the public health and safety and is compatible with the NRC's program. If one or more significant Category I comments are provided, the State will be notified that the program deficiencies may seriously affect the State's ability to protect the public health and safety. If, following receipt and evaluation, the State's response appears satisfactory in addressing the significant Category I comments, the staff may offer findings of adequacy and compatibility as appropriate or defer such offering until the State's actions are examined and their effectiveness confirmed in a subsequent review. If additional information is needed to evaluate the State's actions, the staff may request the information through follow-up correspondence or perform a follow-up or special, limited review. NRC staff may hold a special meeting with appropriate State representatives.

The Commission will be informed of the results of the reviews of the individual Agreement State programs and copies of the review correspondence to the States will be placed in the NRC Public Document Room. Pursuant to Section 274j of the Act, the Commission may terminate or suspend all or part of its agreement with a State if the Commission finds such termination or suspension is required to protect the public health and safety or the State has not complied with one or more requirements of section 274 of the Act.

ENCLOSURE 1

STATUS OF PREVIOUS FINDINGS AND  
SUMMARY OF REVIEW FINDINGS AND RECOMMENDATIONS  
FOR THE SOUTH CAROLINA RADIATION CONTROL PROGRAM  
MARCH 24, 1993, TO MARCH 24, 1995

SCOPE OF REVIEW

The twentieth regulatory program review with South Carolina representatives was held during the period of March 13-17, and March 20-24, 1995, in Columbia, South Carolina. This program review was conducted in accordance with the Commission's Policy Statement for reviewing Agreement State Programs published in the Federal Register on May 28, 1992, and the internal procedures established by the Office of State Programs. The State's program was reviewed against the 30 program indicators provided in the policy statement. The review included one inspector accompaniment, discussions with program management and staff, technical evaluation of selected license and compliance files, review of the State's policies and procedures, and the evaluation of the State's responses to an NRC questionnaire that was sent to the State in preparation for the review.

The State was represented by Mr. Max K. Batavia, Chief, Bureau of Radiological Health (BRH); Mr. James K. Peterson, Director, Division of Radioactive Materials, BRH; Mr. Virgil R. Autry, Director, Division of Radioactive Waste Management (DRWM), Bureau of Solid and Hazardous Waste (BSHW); Mr. Henry J. Porter, Manager, Radiological Waste Engineering and Compliance, DRWM; Mr. Ronald W. McKinney, Director, Waste Assessment and Emergency Preparedness Division, BSHW; and Mr. Albert Craft, Director, Division of Radiation Monitoring, Bureau of Environmental Quality Control Laboratories.

Selected license and compliance files were reviewed by Mr. Richard L. Woodruff, Regional State Agreements Officer, Region II. The review of the Division of Radioactive Materials, BRH, was conducted during the period of March 13-17, 1995, and the review of the DRWM was conducted during the period of March 20-24, 1995. Field accompaniments of one inspector was made by Mr. Woodruff to the Barnwell low level radioactive waste (LLRW) burial site on March 21, 1995. Mr. Woodruff also visited the Division of Radiation Monitoring Laboratory, the Regional Calibration Laboratory, and the Emergency Response Section, on March 22, 1995.

CONCLUSION

The program for control of agreement materials is, at this time, adequate to protect the public health and safety and is compatible with the regulatory program of the NRC.

STATUS OF PROGRAM RELATED TO PREVIOUS NRC FINDINGS

The results of the previous review were reported to the State in a letter to Mr. Thomas E. Brown, Jr., Interim Commissioner, dated May 21, 1993. All comments and recommendations made at that time were satisfactorily addressed and resolved, as documented during our visit on April 11-14, 1994.

CURRENT REVIEW FINDINGS AND RECOMMENDATIONS

All 30 indicators were reviewed and the State fully satisfies 29 of these indicators. Recommendations were made regarding one Category II indicator discussed below. The remaining 29 indicators are discussed in Enclosure 3.

A questionnaire containing the 30 indicators with specific questions pertaining to each indicator was sent to the State prior to the review. The assessments and recommendations below are based upon the evaluation of the State's written response to the questionnaire, comparison with previous review information, review of the State's written procedures and policies, discussions with program managers and staff members, reviewer observations, and licensing and inspection casework file reviews. Specific assessments and recommendations are as follows:

### Inspection Reports (Category II)

#### NRC Guidelines

Findings of inspections should be documented in a report describing the scope of inspections, substantiating all items of noncompliance and health and safety matters, describing the scope of licensees' programs, and indicating the substance of discussions with licensee management and licensee's response.

Reports should uniformly and adequately document the results of inspections, including confirmatory measurements, status of previous noncompliance, and identify areas of the licensee's program which should receive special attention at the next inspection. Reports should show the status of previous noncompliance and the independent physical measurements made by the inspector.

#### Assessment

BRH: Sixteen compliance files were selected for the casework review. The inspection casework was selected from those license casework files having current inspections (including pre-license inspections) to verify continuity between the licensing program and the inspection program. The compliance casework sample contained inspections performed by each inspector. The casework sample consisted of 2 nuclear pharmacies, 2 pool storage irradiators, 3 manufacturing, 1 generally licensed devices (GL) distributor, 2 industrial radiography, 2 institutional medical, 1 teletherapy, 2 private medical, and 1 mobile nuclear medicine files. The reports uniformly documented the scope of the inspections, scope of the licensee's program, substantiated all items of non-compliance and health and safety matters, confirmatory measurements and indicated the substance of discussions with licensee management.

The Bureau developed two new inspection report forms for "remote afterloading brachytherapy devices" and "reciprocity inspections," and revised their "medical" inspection form. The forms were reviewed and the following two areas were discussed with BRH staff. The medical inspection form does not contain provisions for documenting the status of the licensee's ALARA program which is required under RHA 4.7.1 of the State's regulations. The State's industrial radiography regulations (RHA Part V) were revised (1994 edition); however, the 1992 inspection form was not revised to reflect changes in the regulations. In particular, the form needs to document whether the licensee is in compliance with the alarming rate meter provisions required in RHA 5.14.

DRWM: Six compliance files were selected for review and the sample included inspections performed by each inspector. The casework sample consisted of the following compliance files: Chem-Nuclear Defense Consolidation Facility, the LLRW disposal facility, the Chem-Nuclear Environmental and Dosimetry Laboratory, 1 storage facility for contaminated steam generators, 1 research and development facility for site remedial operations, and 1 laboratory facility for analysis of environmental samples taken from contaminated sites. The reports uniformly documented the scope of the inspections, scope of the licensee's program, substantiated all items of non-compliance and health and safety matters, confirmatory measurements, and indicated the substance of

discussions with licensee management. The DRWM satisfies the criteria for this indicator.

#### Recommendation

We recommend that the BRH medical inspection report form be revised to document the status of the licensee's ALARA program, and the industrial radiography inspection report form be revised to incorporate the changes made in the 1994 edition of RHA Part V regulations, including the alarming rate meter.

#### SUMMARY OF DISCUSSIONS WITH STATE REPRESENTATIVES

A summary meeting regarding the results of the review was held on March 24, 1995. The following persons were present during the summary meeting: Mr. Douglas E. Bryant, Commissioner, Department of Health and Environmental Control; Mr. John McNeely, Deputy Commissioner for Health Regulation; Mr. R. Lewis Shaw, Deputy Commissioner for Environmental Quality Control; Mr. Max K. Batavia, Chief, Bureau of Radiological Health; Mr. Hartsill W. Truesdale, Chief, Bureau of Solid and Hazardous Waste; Mr. Virgil R. Autry, Director, Division of Radioactive Waste Management; and Mr. James K. Peterson, Director, Division of Radioactive Materials .

The scope of the review was discussed and the State was informed that the review findings would be reported to the State in a letter signed by the Director, Office of State Programs, and that a written reply would be requested. The State was informed that since no Category 1 comments were identified, this indicates that the State's program is adequate to protect public health and safety, and compatible with the NRC's program. The State was informed that there were no licensing or inspection backlogs, that regulations needed for compatibility had been adopted within the 3 year time frame, and that the previous recommendations had been addressed and resolved.

In reply, Mr. Bryant related that he was pleased to receive a good report, and the State would respond to our written comments.

SUMMARY OF ASSESSMENT OF INDICATORS ADEQUATELY SATISFIED  
BY THE SOUTH CAROLINA RADIATION CONTROL PROGRAM  
MARCH 24, 1993, TO MARCH 24, 1995

The assessments below are based upon the evaluation of the State's written response to the questionnaire, comparison with previous review information, discussions with the program managers and staff members, reviewer observations, review of the State's policies and procedures, one inspector accompaniment, and licensing and inspection casework file reviews. The State fully satisfies the following indicators:

1. Legal Authority (Category I)

NRC Guidelines

Clear statutory authority should exist, designating a State radiation control agency and providing for promulgation of regulations, licensing, inspection and enforcement.

States regulating uranium or thorium recovery and associated wastes pursuant to the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA) must have statutes enacted to establish clear authority for the State to carry out the requirements of UMTRCA.

States regulating the disposal of low-level radioactive waste in permanent disposal facilities must have statutes that provide authority for the issuance of regulations for low-level waste management and disposal. The statutes should also provide regulatory program authority and provide for a system of checks to demonstrate that conflicts of interest between the regulatory function and the developmental and operational functions shall not occur.<sup>1</sup>

Assessment

The State's responses to the questionnaire were reviewed and discussions were held with the Bureau of Radiological Health (BRH) Program manager and the Division of Radioactive Waste Management (DRWM) manager concerning changes to the State's statutory authority for the regulation of agreement materials. The South Carolina Nuclear Energy Act (Chapter 7) was last amended in 1991 and clearly designates the Department of Health and Environmental Control (DHEC) as the agency responsible to administer a program for the control and regulation of radiation sources that is consistent with the U. S. Atomic Energy Act, including the development of regulations, collection of fees, issuance of orders, determination of compliance, impoundment of sources, management and disposal of radioactive waste, and emergency actions to protect public health and safety. Copies of these State statutes were obtained and verified to be identical to those reviewed during previous reviews. Copies are on file in the NRC Region II Office.

2. Status and Compatibility of Regulations (Category I)

NRC Guidelines

The State must have regulations essentially identical to 10 CFR Part 19, Part 20 (radiation dose standards, effluent limits, waste manifest rule and

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<sup>1</sup>The level of separation (e.g., separate agencies) should be determined for each State individually.



certain other parts), Part 61 (technical definitions and requirements, performance objectives, financial assurances) and those required by UMTRCA, as implemented by Part 40.

The State should adopt other regulations to maintain a high degree of uniformity with NRC regulations.

For those regulations deemed a matter of compatibility by NRC, State regulations should be amended as soon as practicable but no later than 3 years.

The radiation control program (RCP) has established procedures for effecting appropriate amendments to State regulations in a timely manner, normally within 3 years of adoption by NRC.

Opportunity should be provided for the public to comment on proposed regulation changes (required by UMTRCA for uranium mill regulation.)

Pursuant to the terms of the Agreement, opportunity should be provided for the NRC to comment on draft changes in State regulations.

#### Assessment

The State adopts and maintains regulations that are compatible with the NRC regulations. The State adopts regulations in accordance with the administrative procedures adopted by the Board of Health and Environmental Control (Board) that provide for public hearings and comments, and proposed regulations are also provided to the NRC for comment prior to adoption. The State can adopt regulations that are required for compatibility through an administrative process of the Board with publication in the State Register; however, all other regulations (not needed for compatibility) must go through the Board to the State Legislative Review Committee and the State Legislature for adoption. The South Carolina regulations for radioactive materials (Regulation 61-63, January 1994 edition) were reviewed for uniformity and compatibility during the April 1994 visit. Since the 1994 visit, the State has adopted regulations on "Notification of Incidents" (56 FR 40757) and "Quality Management Program and Misadministrations" (56 FR 34104). The State has adopted all regulations needed for compatibility up to the "Licensing and Radiation Safety Requirements for Irradiators" (58 FR 7715) that will need to be adopted prior to July 1, 1996.

BRH: The Materials Director in the Bureau of Radiological Health (BRH) related that the irradiator regulations would be codified prior to the required three year adoption date. The regulations on "Notification of Incidents" and "Quality Management Program and Misadministrations" were reviewed and determined to be compatible with NRC regulations.

DRWM: The Director, Division of Radioactive Waste Management (DRWM), Bureau of Environmental Quality Control, related that a regulation package had been submitted to the State legislature for consideration. This package contained low-level radioactive waste provisions and proposed fee changes. The waste provisions have been received in draft form and commented on by the Office of State Programs (OSP). The package also contained a revised definition of "Land Disposal Facility," as required by 58 FR 33886.

The following regulations will need to be adopted to maintain compatibility with NRC regulations:

- "Licenses and Radiation Safety Requirements for Irradiators," 10 CFR Part 36 (58 FR 7715) that became effective on July 1, 1993 and will need to be adopted by July 1, 1996.
- "Definition of Land Disposal and Waste Site QA Program," 10 CFR Part 61 (58 FR 33886) that became effective on July 22, 1993, and will need to be adopted by July 22, 1996.
- "Decommissioning Recordkeeping, and License Termination: Documentation Additions," 10 CFR Parts 30, 40, 70, and 72 amendments (58 FR 39628) that became effective on October 25, 1993 and will need to be adopted by October 25, 1996.
- "Self-Guarantee as an Additional Financial Mechanism," 10 CFR Parts 30, 40, and 70 amendments (58 FR 68726 and 59 FR 1618) that became effective on January 28, 1994, and will need to be adopted by January 28, 1997.
- "Timeliness in Decommissioning of Materials Facilities," 10 CFR Parts 30, 40, and 70 amendments (59 FR 36026) that became effective on August 15, 1994, and will need to be adopted by August 15, 1997.
- "Preparation, Transfer for Commercial Distribution, and Use of Byproduct Material for Medical Use," 10 CFR Parts 30, 32, and 35 amendments (59 FR 61767, 65243, and 60 FR 322) that became effective on January 1, 1995, and will need to be adopted by January 1, 1998.

3. Location of the Radiation Control Program Within the State Organization  
(Category II)

NRC Guidelines

The RCP should be located in a State organization parallel with comparable health and safety programs. The Program Director should have access to appropriate levels of State management.

Where regulatory responsibilities are divided between State agencies, clear understandings should exist as to division of responsibilities and requirements for coordination.

Assessment

A copy of the organization charts was provided and reviewed. There have been no changes in the organizational relationship between the Department of Health and Environmental Control (DHEC) and the Governor's Office since the previous review. All Agreement State functions are contained within DHEC.

DHEC reports to a Board consisting of six members that are appointed by the Governor and confirmed by the State Senate. The Board Chairman is appointed by the Governor and serves in the Governor's Cabinet. The Commissioner of DHEC is hired by the Board. DHEC has a Deputy Commissioner of Health Regulation, and a Deputy Commissioner of Environmental Quality Control (EQC). The Bureau of Radiological Health (BRH) reports through the Health Regulation side of the Department and the Division of Radioactive Waste Management (DRWM) reports through the EQC side of the Department. Emergency Management and the Environmental Laboratory are also under EQC.

#### 4. Internal Organization of the RCP (Category II)

##### NRC Guidelines

The RCP should be organized with the view toward achieving an acceptable degree of staff efficiency, place appropriate emphasis on major program functions, and provide specific lines of supervision from program management for the execution of program policy.

Where regional offices or other government agencies are utilized, the lines of communication and administrative control between these offices and the central office (Program Director) should be clearly drawn to provide uniformity in licensing and inspection policies, procedures and supervision.

##### Assessment

The internal organizational charts for BRH and DRWM were received and reviewed. An "Intradepartmental Memorandum of Agreement (MOA) for Support Services between the Deputy for Health Regulation and the Deputy for Environmental Quality Control" was reviewed. The Memorandum, which addresses respective responsibilities of each Bureau in regulating radioactive materials, was reviewed. Based on the review, the reviewer determined that the MOA establishes clear lines of authority and responsibilities, and provides uniformity in licensing and inspection policies, emergency response, and laboratory support services.

BRH: There have been no major changes in the BRH organization since the previous review relative to Atomic Energy Act (AEA) materials. BRH has two Divisions, Radioactive Materials and the Division of Electronic Products. The Radioactive Materials Division regulates all materials licenses except for the Barnwell Low-Level Radioactive Waste site and other waste related processing facilities. All BRH materials license reviews and inspections are conducted from the central BRH Office. The Regional Calibration Facility is located under the Division of Electronic Products.

DRWM: The Division's organization has not changed since the last review. All licensing and compliance activities related to the Barnwell site and other licensing activities related to waste processing and site remediation are regulated by the DRWM.

#### 5. Legal Assistance (Category II)

##### NRC Guidelines

Legal staff should be assigned to assist the RCP or procedures should exist to obtain legal assistance expeditiously. Legal staff should be knowledgeable regarding the RCP program, statutes, and regulations.

##### Assessment

The response to the questionnaire was reviewed and discussions relative to legal assistance were held with the BRH and DRWM managers. Legal assistance is available, as needed, from DHEC and the managers related that the support has been excellent. Mr. Carlise Roberts, Jr., is the General Counsel assigned to DHEC and he is also a member of the Southeast Compact Commission. Records indicate that legal assistance was obtained on four civil penalty cases since the previous review.

## 6. Technical Advisory Committees (Category II)

### NRC Guidelines

Technical committees, federal agencies, and other resource organizations should be used to extend staff capabilities for unique or technically complex problems.

A State Medical Advisory Committee should be used to provide broad guidance on the uses of radioactive drugs in or on humans. The Committee should represent a wide spectrum of medical disciplines. The Committee should advise the RCP on policy matters and regulations related to use of radioisotopes in or on humans.

Procedures should be developed to avoid conflict of interest, even though Committees are advisory. This does not mean that representatives of the regulated community should not serve on advisory committees or not be used as consultants.

### Assessment

The review of the questionnaire responses from BRH and DRWM confirmed that the State uses a seven member Technical Advisory Radiation Control Council (TARC) as provided for in the Nuclear Energy Act to provide support for the RCP. Membership comes from the Associated Industries of S. C.; Chiropractor's Association; Dental Association; Medical Association; Radiological Association; an Ex-Officio member; and a State-at-Large member. Two meetings are required each year and the Council has met on five occasions since the previous review. Recommendations from the Council are provided to the Board.

BRH: The Bureau coordinates the meetings and maintains the meeting minutes. The TARC meeting minutes were reviewed.

DRWM: The Division also participates in TARC meetings to provide the status of the waste site and during the Council's review of new regulations that will be submitted to the Board for approval.

## 7. Contractual Assistance (Category II)

### NRC Guidelines

Because of the diversity and complexity of low-level radioactive waste disposal licensing and regulation, States regulating the disposal of low-level radioactive waste in permanent disposal facilities should have procedures and mechanisms in place for acquisition of technical and vendor services necessary to support these functions that are not otherwise available within the RCP.

The RCP should avoid the selection of contractors which have been selected to provide services associated with the LLW facility development or operations.

### Assessment

DRWM: Based on discussions with DRWM management, the agency has procedures in place for obtaining contractual assistance. The discussions confirmed, however, that no contracts have been awarded during this review period. Monies have been set aside for a third party review of the final closure plan for the Barnwell site; however, the formal request for this project and the selection of a contractor will be made later on this year and prior to closure of the site.

## 8. Quality of Emergency Planning (Category I)

### NRC Guidelines

The State RCP should have a written plan in response to incidents at licensee facilities which takes into account such incidents as spills, overexposures, transportation accidents, fire or explosion, theft, etc.

The plan should define the responsibilities and actions to be taken by State agencies. The plan should be specific as to persons responsible for initiating response actions, conducting operations and cleanup.

Emergency communication procedures should be adequately established with appropriate local, county, and State agencies. Plans should be distributed to appropriate persons and agencies. NRC should be provided the opportunity to comment on the plan while in draft form.

The plan should be reviewed annually by program staff for adequacy and to determine that content is current. Periodic drills should be performed to test the plan.

### Assessment

Based upon the review of the questionnaire, discussions with staff, and the review of an interdepartmental memorandum, the emergency response type actions have been assigned to the Nuclear Emergency Planning Division (NEPD), Bureau of Solid and Hazardous Waste Management, EQC. An interdepartmental memorandum of understanding was signed on December 7, 1993, that established the response to radiological incidents at fixed nuclear facilities (licensed by NRC), facilities licensed by the BRH, facilities licensed by DRWM, and transportation type incidents. All incidents are reported to the 24-hour emergency number provided by the Division of Emergency Planning. If the event involves a facility licensed by BRH, the Division notifies the BRH for response. Barnwell site events are reported directly to the DRWM.

The NEPD emergency response communication list was last revised in September of 1994, and was determined to be current. The plan has been tested at eight fixed facility drills since the last review. The NRC Region II State Liaison Officer related that there were no outstanding deficiencies resulting from the exercises.

BRH: Discussions with BRH managers and staff confirmed that events were being communicated to them by NEPD. The BRH also maintains a roster of emergency personnel and a call list for responding to events and emergencies during normal work hours, after hours, on weekends, and on holidays. This list was updated in September of 1994, and was determined to be current. This list is provided to all specific licensees on a routine basis. The BRH technical staff are on a pager system. A review of the incident file confirmed that events were being properly reported.

DRWM: The LLRW site has an "on-site" inspector who receives event notifications during normal work hours. Notifications are also made to the DRWM after hours, on weekends, and on holidays following Chem-Nuclear procedures. The DRWM Director and the on-site inspector are also on a pager system. Emergency notification call lists were observed to be posted during the inspector accompaniment to the site.

9. Budget (Category II)

NRC Guidelines

Operating funds should be sufficient to support program needs, such as staff travel necessary to the conduct of an effective compliance program, including routine inspections, follow-up or special inspections, (including pre-licensing visits) and responses to incidents and other emergencies, instrumentation and other equipment to support the RCP, administrative costs in operating the program including rental charges, printing costs, laboratory services, computer and/or word processing support, preparation of correspondence office equipment, hearing costs, etc., as appropriate. States regulating the disposal of low-level radioactive waste facilities should have adequate budgetary resources to allow for changes in funding needs during the LLW facility life cycle. After appropriations, the sources of program funding should be stable and protected from competition from or invasion by other State programs.

Principal operating funds should be from sources which provide continuity and reliability, i.e., general tax, license fees, etc. Supplemental funds may be obtained through contracts, cash grants, etc.

Assessment

A review of the questionnaire response and discussions with the BRH and DRWM managers indicated that sufficient monetary resources are available for carrying out the regulatory program.

BRH: The Materials Program is only about 30% funded by fees which are deposited into the State General Fund, and the fees are published in the regulations. The BRH receives appropriations from the legislature. The BRH Chief related that he had sufficient funds for operational needs; however, the current Legislature is expected to cut from 2% to 5% from the appropriations for the next fiscal year. The fiscal year runs from June 30 to July 1 of each year. The current BRH funds are for 1.4 million dollars.

DRWM: This part of the program is also funded from appropriated monies. The Director reported that approximately 85% of the funds are provided by fees. The program has \$525,761 budgeted for operation. The State also maintains a \$60 million trust fund for the long term care of the site after closure, which is in addition to the Decommissioning Trust Fund. The DRWM Director related that the funds are projected to be sufficient at this time.

10. Laboratory Support (Category, II)

NRC Guidelines

The RCP should have laboratory support capability in house, or readily available through established procedures, to conduct bioassays, analyze environmental samples, analyze samples collected by inspectors, etc., on a priority established by the RCP.

In addition, States regulating the disposal of low-level radioactive waste in permanent disposal facilities should have access to laboratory support for radiological and non-radiological analyses associated with the licensing and regulation of low-level waste disposal, including soils testing, testing of environmental media, testing of engineering properties of waste packages and waste forms, and testing of other engineering materials used in the disposal of low-level radioactive waste. Access to laboratory support should be available on an "as needed" basis for nonradiological analyses to confirm

licensees' and applicants' programs and conditions for nonradiological testing should be prescribed in plans or procedures.

#### Assessment

The Laboratory is located in the Bureau of Laboratories (Bull street location). A tour of the Environmental Laboratory was conducted on March 22, 1995. A review of the questionnaire responses from BRH and DRWM, file casework review, and discussions with the managers confirmed that the Laboratory provides timely and accurate results on confirmatory measurement samples. The Laboratory is funded from State appropriations, a \$290,000 Department of Energy (DOE) contract to evaluate all ingestion pathways from the Savannah River Plant, and a \$85,000 contract from NRC for environmental monitoring around nuclear power plants. The Laboratory has technical procedures and equipment to analyze all types of media and capabilities for alpha, beta, and gamma quantifications. The Laboratory maintains state-of-the-art equipment and a modern emergency response mobile laboratory.

Environmental samples collected around fixed nuclear facilities, the Savannah River Plant, and the Barnwell site are split with the respective sites for analysis. The Laboratory also participates in the EPA cross check program. The laboratory conducts TLD measurements, and analyzes environmental samples collected around the Savannah River Plant, the Barnwell LLRW site, all nuclear power plants, and a hazardous waste incinerator. The NRC Region II manager of the Confirmatory Measurements Branch related that NRC has never experienced any problems with the analysis and accuracy of environmental samples provided by the State laboratory.

#### 11. Administrative Procedures (Category II)

##### NRC Guidelines

The RCP should establish written internal policy and administrative procedures to assure that program functions are carried out as required and to provide a high degree of uniformity and continuity in regulatory practices. These procedures should address internal processing of license applications, inspection policies, decommissioning and license termination, fee collection, contacts with communication media, conflict of interest policies for employees, exchange-of-information, and other functions required of the program. Administrative procedures are in addition to the technical procedures utilized in licensing, and inspection and enforcement.

##### Assessment

BRH: The assessment was based upon the questionnaire response, discussions with staff, the review of procedures, and observations. The Bureau maintains copies of personnel procedures contained in the State Human Resource Regulations, which became effective on August 8, 1994. Staff meetings are held with upper DHEC management on a weekly basis and internal staff meetings are held at least weekly and on an "as needed" basis with the technical staff. Employee orientation courses are held for all new employees. All mail is sent to the Technical Divisions for action as appropriate, and the system was verified to provide for tracking of license applications, processing of documents, reciprocity notifications, collection of fees, proprietary information, and freedom of information requests. All other administrative guidance documents are posted on the bulletin boards in the technical divisions. The administrative and technical staff in the Materials Division were questioned on various administrative topics to verify their knowledge and awareness of the procedures.

DRWM: The Division also maintains copies of administrative procedures and guidance documents provided by DHEC and the Bureau of Environmental Control (EQC). Discussions were held with each of the staff members at various times during the review to verify their knowledge and awareness of the administrative and technical procedures. The Division Director is knowledgeable concerning the administrative functions in DHEC concerning the Agreement Program, the waste site, and was recently appointed the Governor's State Liaison Officer. Discussions were held at various times throughout the review with the technical and administrative personnel to verify their knowledge of the administrative and technical procedures in carrying out the program. The knowledge and experience of the managers contribute to the success of this program.

12. Management (Category II)

NRC Guidelines

Program management should receive periodic reports from the staff on the status of regulatory actions (backlogs, problem cases, inquiries, regulation revisions).

RCP management should periodically assess workload trends, resources and changes in legislative and regulatory responsibilities to forecast needs for increased staff, equipment, services, and funding.

Program management should perform periodic reviews of selected license cases handled by each reviewer and document the results. Complex licenses (major manufacturers, low-level radioactive waste disposal facilities, large scope, Type A Broad, and those which have the potential for significant releases to the environment) should receive second party review (supervisory, committee, consultant). Supervisory review of inspections, reports, and enforcement actions should also be performed.

For the implementation of very complex licensing actions, such as initial license review, license renewals and licensing actions associated with a low-level radioactive waste disposal facility, there should be an overall Project Manager responsible for the coordination and compilation of the diverse technical reviews necessary for the completion of the licensing action. The Project Manager should have training or experience in one or more of the main disciplines related to the technical reviews which the Project Manager will be coordinating, such as health physics, engineering, earth science, or environmental science.

When regional offices or other government agencies are utilized, program management should conduct periodic audits of these offices.

Assessment

BRH: The Materials Director prepares quarterly reports on the status of licensing, inspection, enforcement actions, and misadministrations. The reports for 1994 were reviewed. Discussions with program staff revealed that staff meetings are held at least weekly with the Materials Division supervisor and also as needed during the week. File documentation and casework reviews verified that all licensing actions, inspection reports, and enforcement cases receive supervisory review. Documentation (Inspector Accompaniment Forms) reviewed also shows that all inspectors are accompanied at least annually by managers.

DRWM: The Division staff utilizes the same computer system as the Bureau for tracking the licensing and inspection functions related to the regulatory



oversight of the Barnwell facility, and the other waste processing type licenses. The processing of transportation permits is handled via a computerized system, and the Barnwell oversight program has a special inspection schedule.

#### 13. Office Equipment and Support Services (Category II)

##### NRC Guidelines

The RCP should have adequate secretarial and clerical support. Automatic typing and Automatic Data Processing and retrieval capability should be available to larger (greater than 300-400 licenses) programs. Similar services should be available to regional offices, if utilized.

States should have a license document management system that is capable of organizing the volume and diversity of materials associated with licensing and inspection of radioactive materials.

Professional licensing, inspection, and enforcement staff should not be used for fee collection and other clerical duties.

##### Assessment

BRH: Based upon the questionnaire response and discussions with the Bureau Chief, the Bureau's computer system is being upgraded to a local area network (LAN) with the addition of new computers. The system will have modem capability to link with the Internet System and CD-ROM for training and information purposes. The system will also contain an "e-mail" computer mail capability. Licenses are generated and stored via the computer, and enforcement letters are also computerized. Each Bureau Division has an administrative person (Secretary) for administrative support and the Bureau has it's own facsimile machine and copy machines for daily use. Larger reproduction jobs and tasks are available from other divisions in DHEC as needed.

DRWM: The Division's program is on a network, with e-mail capabilities, and the program is utilizing Wordperfect 6.0, Lotus, and Dbase IV software. Each staff member has a computer and the program is presently establishing capabilities for using the Internet system. Two full time secretaries are utilized and their duties include waste transportation permitting duties. The Division's have their own facsimile, printers, and copy machines.

#### 14. Public Information (Category II)

##### NRC Guidelines

Inspection and licensing files should be available to the public consistent with State administrative procedures. It is desirable, however, that there be provisions for protecting from public disclosure proprietary information and information of a clearly personal nature.

Opportunity for public hearings should be provided in accordance with UMTRCA and applicable State administrative procedure laws during the process of major licensing actions associated with UMTRCA and low-level radioactive waste in permanent disposal facilities.

##### Assessment

Based on a review of the questionnaire responses, document reviews, and discussions held with BRH and DRWM staff, the State operates under a "Freedom

of Information Act" (FOIA) which requires files to be available to the public. However, personal or medical information can be withheld as appropriate (Chapter 4, Title 30, 1987). The DHEC has a public information office in which all FOIA requests (involving BRH and DRWM) are coordinated, and administrative procedures have been developed for the coordination of this type of information. A copy of this Act is on file in the NRC Region II Office and the Act was last revised in 1987, and verified during this review. Both the BRH and the DRWM were verified to have sufficient capabilities to secure proprietary information.

15. Qualifications of Technical Staff (Category II)

NRC Guidelines

Professional staff should have a bachelor's degree or equivalent training in the physical and/or life sciences. Additional training and experience in radiation protection for senior personnel, including the director of the radiation protection program, should be commensurate with the type of licenses issued and inspected by the State. For States regulating uranium mills and mill tailings, staff training and experience should also include hydrology, geology, and structural engineering.<sup>2</sup> For programs which regulate the disposal of low-level radioactive waste in permanent facilities, staff training and experience should include civil or mechanical engineering, geology, hydrology, and other earth science, and environmental science. In both program areas, staff training and experience guidelines apply to available contractors and resources in State agencies other than the RCP.

Written job descriptions should be prepared so that professional qualifications needed to fill vacancies can be readily identified.

Assessment

BRH: The qualifications of the technical staff were reviewed and all technical staff members involved with materials licensing and inspection activities have at least a Bachelor of Science degree in the physical and/or life sciences. All of the technical staff have received training in health physics. All of the materials technical staff meet the requirements of the guideline.

Program managers related that no changes had been made in the job descriptions, therefore, the descriptions were not reviewed during this review as they have been previously reviewed and found to be acceptable. The managers have been provided copies of NRC's Qualification Journals for materials license reviewers and materials inspectors.

DRWM: The Division technical staff consist of two mechanical engineers, one chemical engineer, and three health physicists. These job descriptions also have not changed since the previous review, and all job descriptions have been previously reviewed and found to be acceptable. Geology, hydrology, and other environmental science expertise is available within DHEC.

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<sup>2</sup> Additional guidance is provided in the Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement (46 FR 7540, 36969 and 48 FR 33376).

16. Staffing Level (Category II)

NRC Guidelines

Professional staffing level should be approximately 1-1.5 person-year per 100 licenses in effect. RCP must not have less than two professionals available with training and experience to operate RCP in a way which provides continuous coverage and continuity. The two professionals available to operate the RCP should not be supervisory or management personnel.

For States regulating uranium mills and mill tailings, current indications are that 2-2.75 professional person-years of effort, including consultants, are needed to process a new mill license (including in situ mills) or major renewal, to meet requirements of Uranium Mill Tailings Radiation Control Act of 1978.

States which regulate the disposal of low-level radioactive waste in permanent disposal facilities should allow a baseline RCP staff effort of 3-4 professional technical person-years (in addition to the two professionals for the basic RCP indicated in the first bullet of this indicator). However, in some cases, the level of site activity may be such that a lower level is adequate, particularly if contractor support is on call. In any event, staff resources should be adequate to conduct inspections on a routine basis during operations of the LLW facility, including inspection of incoming shipments and licensee site activities and to respond to emergencies associated with the site. During periods of peak activity, additional staff or specialty consultants should be available on a timely basis.

Assessment

Based upon the data provided in the questionnaires, interviews with staff, and observations made during the review, the reviewer determined that the staffing is adequate to maintain a fully adequate and compatible program.

BRH: Currently the Bureau materials program has four full time equivalents (FTE) of technical staff persons including the first line supervisor for the regulation of 316 specific licenses (including eighteen major licenses). This staffing was calculated to be equivalent to 1.3 person-years per 100 licenses.

DRWM: The Division has five full time technical staff, one full time administrative person to handle the transportation permits, and one full time secretary in addition to the Division Director. One health physicist is a full time inspector at the Barnwell site.

17. Staff Supervision (Category II)

NRC Guidelines

Supervisory personnel should be adequate to provide guidance and review the work of senior and junior personnel.

Senior personnel should review applications and inspect licenses independently, monitor work of junior personnel, and participate in the establishment of policy.

Junior personnel should be initially limited to reviewing license applications and inspecting small programs under close supervision.

### Assessment

BRH: The questionnaire responses, review of documents, and discussions with staff confirmed that the Bureau Chief is technically trained as an engineer and has many years experience in State Government and in supervisory positions under DHEC. The Materials Director and the Section Supervisor are trained in health physics, and they accompany inspectors, monitor work performed by the technical staff, and develop technical policy. Only the senior personnel are allowed to perform tasks independently as verified during discussions with staff and the review of the file casework.

DRWM: Based upon previous reviews, the Division Director has many years of technical supervision of the radioactive waste program, training of technical personnel, and supervision of employees. The Manager of the Radiological Waste, Engineering, and Compliance Section is also a mechanical engineer and has several years in supervision and inspection activities related to the Barnwell site. All junior personnel perform work under the direction of senior personnel as determined during the review of file casework and discussions with staff.

### 18. Training (Category II)

#### NRC Guidelines

Senior personnel should have attended NRC core courses in licensing orientation, inspection procedures, medical practices, and industrial radiography practices.

The RCP should have a program to utilize specific short courses and workshops to maintain appropriate level of staff technical competence in areas of changing technology.

The RCP staff should be afforded opportunities for training that are consistent with the needs of the program.

#### Assessment

BRH: Review of questionnaire responses indicates that all of the technical staff have received training in all of the core courses, except for one staff member who needs the inspection procedures course. This staff member has applied for the August 1995 inspection course at the NRC Technical Training Center.

DRWM: The response to the questionnaire and discussions with the Division Director confirmed that all of the Division technical staff have received training in inspection procedures, and transportation. The senior staff should also receive training in radioactive materials licensing since the program regulates the waste processing type licenses in the state. To meet senior staff training needs, the Director has recommended two persons for the licensing course and three persons for the radiation protection engineering course.

Both BRH and DRWM utilize short courses and workshops sponsored by other agencies to the extent possible.

19. Staff Continuity (Category II)

NRC Guidelines

Staff turnover should be minimized by combinations of opportunities for training, promotions, and competitive salaries.

Salary levels should be adequate to recruit and retain persons of appropriate professional qualifications. Salaries should be comparable to similar employment in the geographical area.

The RCP organization structure should be such that staff turnover is minimized and program continuity maintained through opportunities for promotion. Promotion opportunities should exist from junior level to senior level or supervisory positions. There also should be opportunity for periodic salary increases compatible with experience and responsibility.

Assessment

BRH/DRWM: Based upon the questionnaire responses and discussions with BRH and DRWM managers, all employees received a 2% increase in salary in 1994, and also some additional increases based upon job performance. There has been no technical staff turnover in BRH and DRWM since the last review. The job descriptions verify that promotions to higher job classifications are based upon training and experience, and the position becoming available.

20. Technical Quality of Licensing Actions (Category I)

NRC Guidelines

The RCP should assure that essential elements of applications have been submitted to the agency, and that these elements meet current regulatory guidance for describing the isotopes and quantities to be used, qualifications of persons who will use material, facilities and equipment, and operating and emergency procedures sufficient to establish the basis for licensing actions. Additionally, in States which regulate the disposal of low-level radioactive waste in permanent disposal facilities, the RCP should assure that essential elements of waste disposal applications meet State licensing requirements for waste product and volume, qualifications of personnel, facilities and equipment, operating and emergency procedures, financial qualifications and assurances, closure and decommissioning procedures, and institutional arrangements in a manner sufficient to establish a basis for licensing action. Licensing activities should be adequately documented, including safety evaluation reports, product certifications, or similar documentation of the license review and approval process.

Pre-licensing visits should be made for complex and major licensing actions.

Licenses should be clear, complete, and accurate as to isotopes, forms, quantities, authorized uses, and permissive or restrictive conditions.

The RCP should have procedures for reviewing licenses prior to renewal to assure that supporting information in the file reflects the current scope of the licensed program.

Assessment

BRH: Fifteen license files were selected for casework review. The Bureau currently has 316 specific licensees, including eighteen major licenses. The review sample included all of the major licenses that have not been reviewed

during the past 3 reviews. The sample contained two nuclear pharmacies, one large pool type irradiator, three manufacturing, one distribution, two institutional medical facilities containing HDR units, one private medical (cardiology), one teletherapy, one nuclear laundry, one mobile nuclear medicine, and two industrial radiography with portable gauges. The technical quality of the licensing actions was determined to meet the criteria listed in the above guideline and adequate for issuance of the license. The program does not have a licensing backlog, and pre-licensing visits are made to all major licenses prior to issuance of the license. All new licenses are hand delivered when issued.

DRWM: The Division currently has fourteen specific licenses which include 7 licenses issued to Chem-Nuclear, Inc. at the Barnwell site, and 7 other licenses related to the LLRW industry, including Carolina Metals. Seven license casework files were selected for review. The casework sample contained the following licenses: the Chem-Nuclear disposal facility, the Defense Consolidation Facility, one instrument calibration, one laboratory, one storage, one waste research and development, and one decontamination facility. The technical quality of these licensing actions was determined to meet the criteria of the guidelines and are adequate for issuance of the licenses. Discussions with the DRWM Director and documentation in files suggest that the closure plan is being adequately evaluated and monitored, and the long term trust monies are projected to be sufficient for the State's needs for long term care.

#### 21. Adequacy of Product Evaluations (Category I)

##### NRC Guidelines

RCP evaluations of manufacturer's or distributor's data on sealed sources and devices outlined in NRC, State, or appropriate ANSI Guides, should be sufficient to assure integrity and safety for users.

The RCP should review manufacturer's information on labels and brochures relating to radiation health and safety, assay, and calibration procedures for adequacy.

Approval documents for sealed source or device designs should be clear, complete and accurate as to isotopes, forms, quantities, uses, drawing identifications, and permissive or restrictive conditions.

Approval documents for radioactive waste packages, solidification and stabilization media, or other vendor products used to treat radioactive waste for disposal should be complete and accurate as to the use, capabilities, limitations, and site specific restrictions associated with each product.

##### Assessment

Neither BRH nor DRWM has performed any product evaluations during this review period. Therefore, no product evaluation, source, or device files were reviewed. Discussions were held with the Sealed Source and Device (SS&D) reviewer in BRH concerning reference materials and checklist provided by NRC for SS&D reviews, and it was confirmed that these referenced materials and procedures were available and would be followed for review of SS&D.

## 22. Licensing Procedures (Category II)

### NRC Guidelines

The RCP should have internal licensing guides, checklists, and policy memoranda consistent with current NRC practice.

In States which regulate the disposal of low-level radioactive waste in permanent disposal facilities, the RCP should have program specific licensing guides, plans, and procedures for license review and policy memoranda which relate to specific aspects of waste disposal. The program should include the preparation of safety evaluation reports, product certifications, or similar documentation of license review and approval process.

License applicants (including applicants for renewals) should be furnished copies of applicable guides and regulatory positions.

The present compliance status of licensees should be considered in licensing actions.

Under the NRC Exchange-of-Information program, evaluation sheets, service licenses, and licenses authorizing distribution to general licensees and persons exempt from licensing should be submitted to NRC on a timely basis.

Standard license conditions comparable with current NRC standard license conditions should be used to expedite and provide uniformity in the licensing process.

Files should be maintained in an orderly fashion to allow fast, accurate retrieval of information and documentation of discussions and visits.

### Assessment

BRH: The Bureau utilizes State guides patterned after NRC policy guidance and procedures for the evaluation of applications and the writing of the license document. The State has developed and distributed six new licensing guides based upon the NRC guides developed for implementation of Part 20, and has revised twenty-one older licensing guides to be current with the new standards (Part 20 equivalent) and other regulations that have been adopted. These guides were determined to be equivalent to similar guides developed by NRC. Standard license conditions are also utilized for uniformity, and they were determined to be equivalent to the standard conditions utilized by NRC, and implementation was verified during the casework reviews. Copies of NRC's standard licensing conditions, and license review guides were provided to the program on diskettes for their information. The casework was reviewed for technical adequacy of application review, significant errors and omissions, utilization of licensing procedures and standard conditions, consideration of the applicable licensee's enforcement history and status, and documentation. The casework review confirmed that the licensing procedures are adequate to protect public safety and are uniform with NRC policies.

DRWM: The Division uses the same policy guidance, license conditions, and check lists for the waste related licenses as described above for the BRH licenses. These facilities were originally licensed prior to the reorganization of DHEC. Copies of the NRC standard conditions, licensing policy guidance, was also provided to the DRWM staff for their use. As determined during previous reviews, the Barnwell LLRW facility was licensed using criteria similar to the NRC Branch Technical Positions (BTPs) that existed or were being developed by NRC at the time of the licensing action.

Numerous site-specific procedures have been developed over the years by the licensee, which are reviewed by the DRWM prior to implementation.

These BTPs are followed during the review of licensee proposals and site procedures. Discussions with the managers indicates that the procedures utilized for the regulation of the site have not changed significantly since the previous review.

### 23. Status of Inspection Program (Category I)

#### NRC Guidelines

The State RCP should maintain an inspection program adequate to assess licensee compliance with State regulations and license conditions. The inspection program in all States should provide for the inspection of licensee's waste generation activities under the State's jurisdiction.

In States which regulate the disposal of low-level radioactive waste in permanent disposal facilities, the RCP should include provisions for pre-operational, operational, and post-operational facility inspections. The inspections should cover all program elements which are relevant at the time of the inspection and be performed independently of any resident inspector program. In addition, inspections should be conducted on a routine basis during the operation of the low-level radioactive waste facility, including inspection of incoming shipments and licensee site activities.

The RCP should maintain statistics which are adequate to permit Program Management to assess the status of the inspection program on a periodic basis. Information showing the number of inspections conducted, the number overdue, the length of time overdue and the priority categories should be readily available.

At least semiannual inspection planning should be done for the number of inspections to be performed, assignments to senior versus junior staff, assignments to regions, identification of special needs and periodic status reports. When backlogs occur, the program should develop and implement a plan to reduce the backlog. The plan should identify priorities for inspections and establish target dates and milestones for assessing progress.

#### Assessment

BRH: The computerized inspection tracking system was reviewed. The program does not have an inspection backlog as determined from the review of the data system and the casework files. All inspections are performed during the calendar quarter in which they are due for inspection. The status of the inspection program is assessed monthly and on a quarterly basis, and the inspection due listing is generated on an as-needed basis which can be reviewed at any time. A review of the casework and the system verified that licenses and inspections are coded properly and the information is properly and promptly entered into the tracking system. Also, the State performed 4 reciprocity inspections of industrial radiographers, and an additional 15 radiographer field inspections (which is 42% of the total number of industrial radiography licensees in the State). Discussions with managers indicated that the compliance of reciprocity radiographers did not significantly differ from compliance of other radiographer licensees.

DRWM: The DRWM computerized tracking system was reviewed and verified that the inspection frequency for the DRWM regulated facilities were properly coded. The program does not have any inspection backlogs as verified from a cross check of the computer printout and the casework files. The program has



procedures for operational inspections that are independent of the resident inspector shipment type inspections. Statistical information on the site activities, shipments, and site status are maintained as verified by a review of the file documents.

#### 24. Inspection Frequency (Category I)

##### NRC Guidelines

The RCP should establish an inspection priority system. The specific frequency of inspections should be based upon the potential hazards of licensed operations, e.g., major processors, broad licensees, and industrial radiographers should be inspected approximately annually. Smaller or less hazardous operations may be inspected less frequently. The minimum inspection frequency, including for initial inspections, should be no less than the NRC system.

##### Assessment

BRH: A comparison was made of the inspection frequencies utilized by the BRH and those utilized by NRC. BRH utilizes the inspection frequencies that are as frequent as those used by NRC as verified during the comparison and during the review of the casework files. The HDR units were verified to be on a 1 year frequency. All casework was verified to have the proper inspection frequency entered into the computer tracking system.

DRWM: A comparison was made of the inspection frequencies utilized by the DRWM with those utilized by NRC. The comparison and the casework review verified that DRWM utilizes frequencies that are as frequent as those used by NRC.

#### 25. Inspector's Performance and Capability (Category I)

##### NRC Guidelines

Inspectors should be competent to evaluate health and safety problems and to determine compliance with State regulations. Inspectors must demonstrate to supervision an understanding of regulations, inspection guides, and policies prior to independently conducting inspections.

For the inspection of complex licensed activities such as permanent low-level radioactive waste disposal facilities, a multidisciplinary team approach is desirable to assure a complete compliance assessment.

The compliance supervisor (may be RCP manager) should conduct annual field evaluations of each inspector to assess performance and assure application of appropriate and consistent policies and guides.

##### Assessment

BRH: All BRH inspectors have been accompanied by supervisors since the last review as verified from the review of the State's Inspector Accompaniment Forms. The junior inspectors train with the senior inspectors on team inspections, as verified by the casework documentation and discussion with the junior staff. All BRH materials inspectors have been accompanied by the NRC reviewer within the past three reviews, except for one person who was in training during the review. All other inspectors (including the technical supervisors) were previously determined to be adequately trained to evaluate health and safety problems, and determine compliance with the regulations in accordance with State procedures.

DRWM: All DRWM inspectors were verified to have been accompanied by supervision annually, during the period covered by the review. The Barnwell site inspections (discussed under the Inspection Procedures indicator) were verified from inspection reports to be conducted via a combination of individual and team type inspections. The following inspector was accompanied during the review:

Date of Inspection: March 14, 1995  
Inspector: Henry J. Porter  
Licensee: Chem-Nuclear Systems, Inc.  
Location: Barnwell, SC  
License No.: 097  
License Type: LLRW burial site

This was a routine, announced, weekly inspection conducted with site management. A survey/inspection of the site was conducted and the status of the trench cover enhancement project was discussed. Discussions were also held with the site inspector concerning the daily transportation inspections and other projects assigned by the DRWM supervisor. The inspector was well prepared for this type of inspection and the inspection was conducted in accordance with the State's policies and procedures.

## 26. Responses to Incidents and Alleged Incidents (Category I)

### NRC Guidelines

Inquiries should be promptly made to evaluate the need for onsite investigations.

Onsite investigations should be promptly made of incidents requiring reporting to the Agency in less than 30 days (10 CFR 20.403 types).

For those incidents not requiring reporting to the Agency in less than 30 days, investigations should be made during the next scheduled inspection. Onsite investigations should be promptly made of non-reportable incidents, which may be of significant public interest and concern, e.g., transportation accidents.

Investigations should include in-depth reviews of circumstances and should be completed on a high priority basis. When appropriate, investigations should include reenactments and time-study measurements (normally within a few days). Investigation (or inspection) results should be documented and enforcement action taken when appropriate.

State licensees and the NRC should be notified of pertinent information about any incident which could be relevant to other licensed operations (e.g., equipment failure and improper operating procedures).

Information on incidents involving failure of equipment should be provided to the agency responsible for evaluation of the device for an assessment of possible generic design deficiency.

The RCP should have access to medical consultants when needed to diagnose or treat radiation injuries. The RCP should use other technical consultants for special problems when needed.

### Assessment

BRH: All of the incident files for the 1993 and 1994 calendar years have been distributed to the Office of State Programs (OSP) and all of these incidents

were reviewed prior to transmittal to OSP. The incident data systems utilized by the State and the regulations related to incident reporting requirements were reviewed, and the State's incident reporting system, which included allegations received, was discussed in detail with the BRH Materials Director. The program has been very responsive in responding and evaluating incidents and alleged incidents as they occur. The BRH has no outstanding incident reports for the review period as verified with Ms. Pat Larkins in OSP. The State reported six events for 1993 and fourteen events during 1994. The BRH responded to these events and allegations appropriately, as determined from a review of the incident reports and documentation in the files. No misadministrations were reported. The State related that several misadministrations reports had been received, however, upon further evaluation the State determined that the reports were "recordable" rather than misadministrations as prescribed in the State's QMP regulations. The reviewer verified that the reports were not truly misadministrations under the new QMP rule adopted by NRC and the State. Discussions were also held with the inspectors concerning how reportable events are evaluated during inspections.

DRWM: No incidents were reported to the DRWM and a review of the casework files confirmed that no incidents were documented for the review period. The Director related that there have been several transportation/packaging type deficiencies determined during the inspection process at the site, however, these are not considered to be incidents.

## 27. Enforcement Procedures (Category I)

### NRC Guidelines

Enforcement Procedures should be sufficient to provide a substantial deterrent to licensee noncompliance with regulatory requirements. Provisions for the levying of monetary penalties are recommended.

Enforcement letters should be issued within 30 days following inspections and should employ appropriate regulatory language clearly specifying all items of noncompliance and health and safety matters identified during the inspection and referencing the appropriate regulation or license condition being violated.

Enforcement letters should specify the time period for the licensee to respond, indicating corrective actions and actions taken to prevent recurrence (normally 20-30 days). The inspector and compliance supervisor should review licensee responses.

Licensee responses to enforcement letters should be promptly acknowledged as to adequacy and resolution of previously unresolved items.

Written procedures should exist for handling escalated enforcement cases of varying degrees.

Impounding of material should be in accordance with State administrative procedures.

Opportunity for hearings should be provided to assure impartial administration of the radiation control program.

### Assessment

A review of the State's regulations (Department of Health and Environmental Control, Regulation 61-63, Radioactive Materials, January 1994 Edition) confirmed that the regulations contain provisions in RHA 1.6 for Inspections,

RHA 1.8 for Impounding, RHA 1.12 for Violations (court orders, public hearings, assessment of fines and civil penalties), and RHA 1.16 for a Schedule of Civil Penalties. The State can assess administrative fines for violations of State regulations, not to exceed \$1,000 per violation per day for Severity VI category violations, and not to exceed \$25,000 per violation per day for Severity I category violations.

BRH: The Bureau has issued four civil penalties since the last review. These fines, the 1992 enforcement procedures, the questionnaire response, and the casework were reviewed and the results verify that the procedures are being followed and provide a substantial deterrent to licensee noncompliance. Program managers also related that pre-license visits and the hand delivery of new licenses are believed to be effective as preventative tools in achieving compliance. The enforcement correspondence was determined to be timely, with specificity of noncompliance and health and safety matters, acknowledgement letters were timely, and the noncompliance issues were followed up in an appropriate manner.

DRWM: The Division has not issued any civil penalties to specific State licensees since the last review, however, several infractions of the waste permitting process have occurred and enforcement actions have been taken on waste generators that have shipped contaminated medical waste to a State permitted medical waste incinerator. These actions were discussed with the Division Director, but each file was not specifically reviewed. The Division takes enforcement actions under the same regulatory authority as described above, and administrative procedures for applying civil penalties and suspending transport permits have been developed and reviewed during previous reviews and visits. The review of these procedures, questionnaire response, and the compliance casework verify that the procedures are being followed and noncompliance issues are handled in an appropriate manner.

## 28. Inspection Procedures (Category II)

### NRC Guidelines

Inspection guides consistent with current NRC guidance should be used by inspectors to assure uniform and complete inspection practices and provide technical guidance in the inspection of licensed programs. NRC guides may be used if properly supplemented by policy memoranda, agency interpretations, etc.

Written inspection policies should be issued to establish a policy for conducting unannounced inspections, obtaining corrective action, following up and closing out previous violations, interviewing workers and observing operations, assuring exit interviews with management, and issuing appropriate notification of violations of health and safety problems.

Procedures should be established for maintaining licensees' compliance histories.

Oral briefing of supervision or the senior inspector should be performed upon return from nonroutine inspections.

For States with separate licensing and inspection staffs, procedures should be established for feedback of information to license reviewers.

### Assessment

All the DRWM and BRH inspectors, except one, have attended the NRC Inspection Procedures Course. The program utilizes the Inspection Guidance and

Procedures provided by NRC Inspection Manual, Inspection Procedure 87100 and Manual Chapter 2800. Updated copies of the these documents were provided on diskette to the BRH and DRWM program managers during the review for implementation.

BRH: The Bureau procedures, guides, and the casework reviews verify that the inspection procedures are consistent with NRC guidance, and are adequate to provide complete and uniform technical guidance to the staff inspectors. The casework review verified that the procedures are being followed.

DRWM: The Division also follows the inspection guidance as described above, and a separate inspection procedure has been developed for the Barnwell site as summarized below. This procedure was confirmed during the review of the casework and during the Barnwell site inspection accompaniment.

Summary of DRWM oversight of the Barnwell LLRW Disposal Site:

All shipments received at the Barnwell site are inspected for compliance with US Department of Transportation requirements, and South Carolina Radioactive Material License No. 097 conditions and State regulations. Inspections of individual waste packages are performed at the discretion of the DHEC inspector.

A weekly engineering inspection is performed by the engineering staff in the Division of Radioactive Waste Management. The inspection includes a drive over inspection of the site with emphasis placed on inspection of surface water drainage, construction activities, and observation of disposal operations. No records are inspected during the weekly engineering inspections. All inspections are documented.

An inspection of the 097 license is performed semi-annually. The inspection consist of a review of records required to be maintained under the license and the State regulation (R. 61-63), surveys and smears of the facility, observation of receipt and disposal of waste and release of trucks, and a drive over inspection of the disposal site.

Environmental monitoring of the disposal site is performed by DHEC. Selected groundwater wells are sampled quarterly by CNSI with DHEC oversight and samples are split with the DHEC for analysis. DHEC also monitors air, soil, vegetation, precipitation, and sediment. The results are reviewed by the Division of Radioactive Waste Management for compliance. Tritium plume monitoring wells are included in the quarterly groundwater monitoring program.

Sampling schedule

Sample Type	Collection Frequency	Type Analysis
Groundwater	quarterly	gamma emitters, gross alpha, gross beta, & tritium
Air	bi-weekly	specific gamma emitters, gross alpha & gross beta
Soil	annually	gamma emitters
Vegetation	annually	gamma emitters

Precipitation	bi-weekly	gross beta & tritium
Sediment	annually	gamma emitters

29. Confirmatory Measurements (Category II)

NRC Guidelines

Confirmatory measurements should be sufficient in number and type to ensure the licensee's control of materials and to validate the licensee's measurements. In States which regulate the disposal of low-level radioactive waste in permanent disposal facilities, access to testing should be available on an "as needed" basis for confirming licensee's and applicants' programs for measurements related to nonradiological aspects of facility operations, such as soils and materials testing and environmental sampling and analysis, to demonstrate compliance with 10 CFR Part 61 or compatible Agreement State regulations and ensure facility performance. Conditions for nonradiological testing should be prescribed in plans or procedures.

RCP instrumentation should be adequate for surveying license operations (e.g., survey meters, air samplers, lab counting equipment for smears, identification of isotopes, etc.).

RCP instrumentation should include the following types: GM Survey Meter, 0-50 mR/hr; Ion Chamber Survey Meter, several R/hr; micro-R-Survey meter; Neutron Survey Meter, Fast & Thermal; Alpha Survey Meter, 0-1,000,000 c/m; Air Samplers, Hi and Low Volume; Lab Counters, Detect 0.001 µCi/wipe; Velometers; Smoke Tubes; Lapel Air Samplers.

Instrument calibration services or facilities should be readily available and appropriate for instrumentation used. Licensee equipment and facilities should not be used unless under a service contract. Exceptions for other State agencies, e.g., a State University, may be made.

Agency instruments used for surveys and confirmatory measurements should be calibrated within the same time interval as required of the licensee being inspected.

Assessment

BRH: The inspection reports were reviewed for documentation concerning confirmatory measurements and independent measurements and were found to be consistent with NRC practices and sufficient to document licensee performance, with the exception, as noted, under the "Inspection Reports" indicator. The program utilizes a State Regional Calibration facility operated and managed by BRH for the routine calibration of portable alpha, beta, gamma type instrumentation. The calibration facility was visited during the review and discussed with the staff member responsible for instrument calibration. An updated listing of portable instrumentation was reviewed and discussions were held with the program managers and two inspectors concerning the availability of instrumentation and the analysis of samples. The review of the questionnaire response, discussions with Bureau staff, and casework review confirmed that adequate calibrated instrumentation was available and the criteria of this indicator is being satisfied.

DRWM: The Division provided a listing of equipment utilized for confirmatory measurements and the equipment was verified to be in calibration, and was also calibrated by the BRH Calibration Facility. All smears and environmental

samples are analyzed by the DHEC, Radiological Environmental Monitoring Laboratory. The review of the questionnaire response, discussions with Division staff, and casework review confirmed that adequate calibrated instrumentation was available and the criteria of this indicator are being satisfied.