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September 8, 1982

Alton B. Cobb, M.D., State Health Officer  
State Board of Health  
Felix J. Underwood Building  
2423 N. State Street  
P. O. Box 1700  
Jackson, Mississippi 39205

Dear Dr. Cobb:

In accordance with the policy of the U. S. Nuclear Regulatory Commission (NRC), I have enclosed a copy of our report of the NRC's 1981 review of the Mississippi Radiation Control Program for agreement materials. The report contains the findings of the NRC staff and your comments on these findings.

For your information, the criteria used by the NRC staff as the basis for our review is contained in the "Guide for Evaluation of State Radiation Control Program", February 1, 1980, Revision 3.

If you have any questions concerning the report, please do not hesitate to contact me.

Sincerely,

(Original signed by R. L. Woodruff)  
Richard L. Woodruff  
State Agreements Representative

Enclosures:  
As stated

cc w/encls:  
Mr. G. Wayne Kerr  
Mr. Eddie S. Fuente

bcc w/encls:  
D. A. Nussbaumer, OSP  
State of Mississippi  
Document Management Branch  
R. L. Woodruff, ETP, RII

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RLWoodruff:sa  
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REPORT and EVALUATION  
OF THE  
MISSISSIPPI RADIATION CONTROL PROGRAM  
FOR THE PERIOD  
APRIL 26, 1980 TO SEPTEMBER 11, 1981

21st Regulatory Program Review

REPORT AND STAFF EVALUATION OF THE MISSISSIPPI RADIATION CONTROL PROGRAM  
FOR THE PERIOD APRIL 26, 1980 TO SEPTEMBER 11, 1981

The 21st Regulatory Program Review of the Mississippi Radiation Control Program was conducted during the period of September 8-11, 1981. The State was represented by Mr. E. Fuente, Director, Division of Radiological Health and Mr. Jeff Grasser. The NRC was represented by Mr. R. L. Woodruff. A field evaluation of a State inspector was conducted on September 8, 1981. Selected license and inspection files were reviewed on September 9 and 10, 1981. A summary meeting to discuss the results of the regulatory program review was held with Dr. Alton Cobb, State Health Officer, Dr. William Riecken, Assistant to the State Health Officer, Mr. B. Redding, Chief, Bureau of Environmental Health, and Mr. E. Fuente, Director, Division of Radiological Health on September 11, 1981.

Conclusions

The staff believes the Mississippi Program for Control of Agreement materials is adequate to protect the public health and safety and comparable with the Regulatory Programs of the NRC and other Agreement States; however, some areas are still in need of improvement as noted below:

Comment Letter to Dr. Cobb

1. The program presently has a staffing level of 0.82 person years per 100 licenses. This is below the NRC recommended range of 1.0-1.5 person years per 100 licenses and, is beginning to affect the compliance program, specifically the ability to maintain the inspection schedule. It was recommended that this position be filled expeditiously as considerable time is needed for specialized training in the agreement materials program before an individual is ready to assume programmatic duties. The reviewer stated that NRC will attempt to give priority to this individual in NRC training courses and, will pay per diem and travel expenses.
2. The reviewer commented that the health physics positions had been increased by two pay grades since the last review; however, the median health physics salaries still ranked low when compared to median salaries of the other agreement state programs. The radiation control program had experienced an attrition rate of 50% within the professional staff since the last review.
3. The reviewer commented to Dr. Cobb that an automated data processing system was currently being utilized for the fee collection process and that the reviewer had recommended to Mr. Fuente that consideration be given to expand the system for use in the management of licensing and inspection data.

Comment Letter to Mr. Fuente

1. Special Requirements for Teletherapy Licenses, 10 CFR 35.21, through 35.25, have not been incorporated into the Mississippi Regulations or as a license requirement. This rule became effective on July 9, 1979.

Compatibility with regulations other than Part 19, basic radiation protection standards and UMTRCA, is a Category II Indicator.

2. Licenses are issued for periods ranging from one to four years depending upon the priority of the license. Priority I and II licenses are renewed every year, (although in most cases, the renewal is primarily an extension of the expiration date) Priority III licenses are renewed every three years, and Priority IV licenses are renewed every four years. This renewal frequency creates additional workloads for the program staff and the licensee. These resources could be better utilized in other program areas such as field inspections.

Licensing procedures is a Category II Indicator.

3. Licensing checklists are not routinely used by the license reviewers.

This deficiency (Licensing Procedures) is also a Category II Indicator.

4. License applications covered pertinent points of an acceptable radiation program, but, in some cases detailed information was lacking. For example: one application needed more details on the incinerator used, leak test procedures, and bioassay procedures; some licenses needed more details on QA test and calibration of dose calibrators; some licenses needed more details on how surveys would be performed; one research application did not define what was meant by the term "lower animals"; and one mobile Nuclear Medicine Service license application needed additional information to determine that a "portable" dose calibrator would not be used.

This deficiency (Licensing Procedures) is also a Category II Indicator.

5. A license condition in a well logging license placed additional labeling requirements on a "vehicular storage compartment door," where a container would be stored and referenced the Mississippi State Board of Health Environment Regulations, Part 801-Radiation, Section D.203 (f)(1). This reference applies to the labeling of containers. The appropriate reference section should have been "Section D.203(e)," which applies to "areas" where a container may be stored. The additional labeling requirements "Keep Three Feet Away" were on the storage area rather than the storage container. Two other licenses listed Group I materials in license Item 6 and Group II materials in license Item 7.

These deficiencies are related to Licensing-Quality Assurance which is a Category II Indicator.

6. The inspection overdue list had increased by 6% since the last review; however, this increase was in the Priority III and IV categories. Five of the overdue were radiographic, Priority I licensees, and eleven were Priority II licensees. The Priority I radiographers were overdue from 12 to 26 months. The overdues have resulted in part because the program only has two persons for the licensing and compliance activities, one of which has been undergoing training.



Status of Inspection Program is a Category I Indicator, but this deficiency is of minor significance at this time because the increase was in the Priority III and IV categories and because an inspector was undergoing training.

7. Based upon the inspection accompaniment, and discussions with the staff, considerable time is utilized at the beginning of the inspections for a detailed review of the licensee's records.

It was recommended that inspectors focus more on the operational aspects of the licensee's radiation protection program and its management, and less on records review.

This deficiency is and related to Inspection Procedures which is a Category II Indicator.

8. During the inspection accompaniment and discussions with the staff, we were pleased to learn that inspectors are routinely performing independent measurements; however, teletherapy spot-check measurements are not performed. It was recommended that the independent measurement efforts be expanded to include teletherapy spot-check measurements.

Independent Measurements is a Category II Indicator.

9. Inspection reports reviewed during the meeting showed considerable improvement over previous reports in the license files; however, in several instances additional details were needed for documentation of (a) entrance and exit interviews with management, (b) the scope of the licensee's program, (c) personnel monitoring program and exposure received, (d) independent measurement performed by the inspector, and (e) some reports had not been signed as having had been reviewed by management. It was recommended that the reports be reviewed by supervision and training seminars be conducted as needed to assure that the reports adequately document inspection findings.

Adequacy of Inspection Reports is a Category II Indicator.

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 inspection files; (2) Information related to the program indicators specified in the NRC's "Guide for Evaluation of Agreement State Radiation Control Programs"; (3) the results of a field evaluation of a State inspector; (4) the review of selected licenses issued by Mississippi since April 26, 1980; and (5) the State's and NRC's continuing exchange of information program.

### Summary Discussion with Dr. A. Cobb, State Health Officer

A summary meeting to present the results of the review of the Mississippi Radiation Control Program was held with Dr. Alton Cobb and Dr. William Riecken, Assistant to the State Health Officer on September 11, 1981. Mr. Bobby Redding, Chief, Bureau of Environmental Health, and Mr. Eddie Fuente, Director, Division of Radiological Health, were also present at this meeting.

The reviewer informed Dr. Cobb that he would receive a copy of the staff comments regarding the technical aspects of the program; however, the letter would be addressed to Mr. Fuente.

In response to the NRC representative's comments, Dr. Cobb stated: (1) A third professional person had been approved for the agreement material program and that a register is being established by the State Personnel Office, (2) A move is underway by the Health Office to have the health physics salaries realigned to be more comparable with other professional job classifications in state and private industry; and (3) Appropriate consideration would be given to the data processing needs of the radiation program.

Dr. Cobb inquired of the reviewer what would happen if "Mississippi gave the Agreement back to NRC." In response, the reviewer briefly discussed the advantages of maintaining the agreement portion of the radiation program.

### PROGRAM CHANGES RELATED TO PREVIOUS NRC COMMENTS AND RECOMMENDATIONS

#### 1. Comment to Dr. Cobb

We find that the program presently has a staffing level of .94 person years per 100 licenses and a budget that correspond to \$168.00 per license. Both of these values are below the NRC recommended ranges of 1.0-1.5 person years per 100 licenses and \$200-\$350 per license respectively. These factors become more significant when we foresee additional staff efforts being required in the near future for the following program areas: (1) The renewal of many medical and industrial radiography licenses in their entirety to conform with the State's revised radiation control regulations; (2) The inspection to DOT requirements of package preparation and shipping procedures by State licensees; and (3) The development of State response to questions concerning low level radioactive waste disposal and high level radioactive waste burial sites.

#### Recommendation

We recommend that the State fill the remaining vacancy as soon as possible with a view toward the planned implementation of the above program areas (These are Category II indicators).

#### State Response

The state planned to fill the vacant health physics position within a few months.

Present States

A Health Physicist I was transferred from X-Ray to the Radioactive Material Section; however, the HP II supervisor in the Materials Section took another job, which still leaves only 2 full time professionals in the agreement program.

2. Comment to Dr. Cobb

It was noted that after the review of last year, a recommendation was made to the State to consider reclassification and review of the salary schedule for professional staff and this had not been performed. The reviewer also pointed out Mississippi's relative position in a list of median agreement State's staff salaries which showed a standing near the bottom of this list for the State of Mississippi.

Recommendation

It was strongly recommended that the state consider a reclassification of the salary schedule for professional staff in the program.

State Response

The Health Physicist positions were reclassified upward by two pay grades.

Present States

Mississippi's relative position in a list of median agreement states staff salaries has not improved. The Mississippi pay increases were offset by corresponding pay increases of other agreement states.

3. Comment to Mr. Fuente

It was encouraging to see that the level of training for the staff increased from 2.1 percent for last year's review, to 6.2 percent for this year's review. This value lies within the NRC's recommended range of 5 to 10 percent of staff effort for training (This is Category II indicator).

State Response

This Division has in fact served as a residency program for its professional staff and has effectively served as a spring board for many high qualified, fully trained and competent employees. The overwhelming fact is that our salary structure, as it exists, cannot compete with the likes of medical and dental schools, industry and other governmental agencies. Therefore, we can anticipate a continual attrition of staff and a continual need to train new employees until such time as a cognizance of the professional expertise and appropriate remuneration of same is granted.

If the vacant position I now have is not cut from my budget, this person, when employed, will be trained for the radioactive materials program.

Present Status

The state has continued to train the professional staff as courses become available and the Health Physicist I that was transferred to materials from X-Ray has been trained to perform materials inspections. The inspection emphasis has reduced the number of over due Priority I licensees; however, there have been an overall increase in overdues.

4. Comment to Mr. Fuente

Because of the importance of the exit meeting to the overall inspection, it may be desirable to also indicate in an inspection report, 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 the State indicated was their current policy to include the appropriate levels of management in exit meetings wherever possible (This is a Category II indicator).

Recommendation

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.

State Response

During any audit by our Health Physicist, effort is made to interview as high a level of management to insure proper management attention to any violations and/or discrepancies in the program as noted by the Health Physicist. In the future, names and titles of all persons interviewed will be a part of inspection reports.

Present Status

Recent inspection reports have shown considerable improvement over previous reports.

5. Comment and Recommendation to Mr. Fuente

We recommend that a brief summary statement be included in written inspection reports which gives results of questioning of workers and technicians concerning their operating procedures with radioactive materials. The summary statement should indicate whether or not the licensee's training for and monitoring of operational procedures were being followed in practice (This is a Category II indicator).

### State Response

With regard to the statement on discussion of procedures with the workers and technicians, it has been and will be the policy and procedure of the staff to review a program with the operators to determine adherence to submitted operating procedures.

### Present Status

The state has made considerable improvement in the techniques of discussion of procedures with workers as determined by recent inspection reports and inspector accompaniment.

## ORGANIZATION

Legal Authority. There have been no changes to the statutory authority on the Radiation Control Program since the last review in April, 1980. The statutory authority for Radiation Control is the Mississippi code, Chapter XIV Radiation Protection Program, Sections 45-14-1 through 45-14-41. The State Board of Health is designated as the State Agency to administer the state wide Radiation Protection Program. Section 45-14-11 provides for the general powers of State Board of Health which, among others includes: (1) the adoption, promulgation, amendment in appeal of rule, regulations, standards for licensing for registration of sources of radiation, (2) the transportation of sources of radiation to comply with the provisions of the rules, regulations, and standards of the state, (3) the requirements for licensing and registration of persons for use or possession of sources of radiation, (4) the exemption of certain sources of radiation, (5) the conduction of environmental radiation surveillance in monitoring programs, and (6) the response to any emergency which involves radioactive materials. Section 45-14-13, deals with the licensing and registration of persons who use or process sources of radiation. Section 45-14-21 provides for the refusal to grant license or registration and the suspension or revocation or amendment of license or registration. Section 45-14-23, Emergency impounding of sources of radiation, states that authorized representatives of the agency shall have the authority in the event of an emergency 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 this chapter or any rules or regulations issued there under. Section 45-14-25, Transportation of Radioactive Materials, states that the State Board of Health is authorized to adopt, promulgate, amend and appeal rules and regulations governing the Transportation of Radioactive Materials in Mississippi. Section 45-14-31, provides the schedule of fees for Radioactive Materials Licenses. Current copies of the enabling act and other statutes are located in the files.

Location of Radiation Control Program Within The State Organization. The Mississippi Radiation Control Program is located in the Environmental Engineering Division which is located under the Bureau of Environmental Health. The Bureau is one of four Bureaus that report directly to the State Health Officer. The director of the Division of Radiological Health is Mr. E. Fuente. Mr. Fuente reports directly to Mr. Redding who is the Chief of the Bureau of Environmental



Health. Mr. Redding reports directly to the State Health Officer, Dr. A. B. Cobb. Mr. Fuente stated that he believed that the Mississippi Radiation Control Program is comparably located relative to other State Board of Health Programs and he also believes that he has access to appropriate levels of management personnel within the Mississippi State Board of Health. An organizational chart for the Board of Health showing the location of the Division of Radiological Health is attached to this report as Appendix A.

Internal Organization Of The Radiation Control Program. Mr. Fuente is Director of the Radiological Health Branch. His branch is divided into four sections: Radioactive Materials, X-Ray, Environmental and Response Plan, and Low and High Level Waste. The Radioactive Materials Section has three positions and is headed by Jeff Grasser who is a Health Physicist III; Barbara Erwin, a Health Physicist I is the only other position that is presently filled; and a Health Physicist Trainee position is vacant. The X-ray section is headed by a Health Physicist III also who could provide assistance to the Radioactive Materials Section. The Environmental and Emergency Response Plan is headed by Health Physicist III and this section has two Health Physicist Trainees, a Laboratory Technologist which is vacant and a general service employee. The Low and High Level Waste Section consists of an Environmental Engineer who is in training. The Radioactive Materials Section does not utilize regional offices. A copy of the Radiological Health Branch Organization Chart is enclosed as Appendix B.

Legal Assistance. Legal staff is available to the Division of Radiological Health from the Attorney Generals Office. In previous years the Health Department had their own legal staff who were knowledgeable regarding the Radiation Control Program statutes, regulations and possible needs. This position is vacant at present but the Health Department has plans to replace the lawyer position.

Technical Advisory Committees and Consultants. State legislation provides for the establishment of the Radiation Advisory Council which now consist of eight members appointed for terms ranging from 2 to 4 years and 1 exofficio member who serves as secretary and who is director of the Radiological Health Branch. The council's function is to advise the Radiation Control Program on policies and programs for Radiation Control and to assist in the formation and approval of rules, regulations, and standards. It is required to meet once a year and records of those meetings are maintained by the Radiological Health Program Director. Since the last review the council has met on October 20, 1980, April 15, 1981, and June 17, 1981. The council includes specialities in medicine, a radiologist, a dentist, a chiropractor, a member from both houses of the legislature, a member representing industry, and a member of an institution of higher learning. The reviewer audited the minutes from the Radiation Advisory Council Meetings and found them to be complete and well documented. The membership of the Radiation Advisory Council is included as Appendix C.

The Senator on the council is appointed by the governor, the representative is appointed by the Speaker of the House, the industry representative appointed by the State Industrial Board and the representatives from the medical community and other representatives are appointed and approved by the State Health Officer. No



members of the council are in possession of a private license from the Radiological Health Branch, however, they may be licensed indirectly as a broad licensee user.

Mr. Fuente stated that the Radiation Advisory Council as well as individual council members may be contacted for consultation as needed. In addition, the program uses the Nuclear Regulatory Commission, the Bureau of Radiological Health, and the Environmental Protection Agency for assistance with complex and unique problems involving the Radiation Control program.

#### MANAGEMENT AND ADMINISTRATION

Emergency Response Plan. There have been no changes in the Emergency Response Plan for Agreement Materials since the previous review. The Radiological Health Branch and the State Office of Civil Defense have worked jointly to develop plans for response to Radiological Emergencies. A copy of these plans were placed in the OSP files according to the previous report. The Radiological Response Plan identifies responsibilities, agencies, state and local authorities, and telephone numbers for emergency notification procedures and a list of the names and telephone numbers of Radiological and Civil Defense Officials to contact (24 hours a day) in the event of a Radiation accident. For transportation type accidents the plans assumes that the state police would be first at the site of an accident who in turn would notify the state or local Civil Defense official. Civil Defense personnel responding to the accident are required to contact the State Radiological Health Branch for consultation. There appears to be good communication between the state police, civil defense, and the Radiological Health Branch and no significant problems have been encountered as of this review.

The comprehensive plan for response covering accidents at fixed Nuclear facilities has been published as of 1980. A copy of this plan has been placed in the OSP files.

Budget. Funds for the Radiological Health Program are obtained from the state general fund, license and registration fees, a FDA X-Ray contract, and an EPA safe drinking water grant. Mr. Fuente provided the following breakdown for the fiscal year 1981 that runs from July 1, through June 30.

| <u>Item</u>                      | <u>Dollars</u>   |
|----------------------------------|------------------|
| State general funds              | \$178,487.36     |
| Fees                             | 123,739.23       |
| EPA Safe Drinking Water Contract | 25,476.00        |
| X-Ray Contract (FDA)             | <u>23,021.16</u> |
| Total                            | \$350,723.75     |

The amount funded for the Agreement Materials Program is not separate but has been approximated at \$64,500.00 for FY 82, which represents a 22% increase over the Agreement Materials Program for FY 81. This corresponds to \$233.00 per license which is within the NRC's recommended range of \$200.00 to \$300.00 per license.

License fees are collected by the state according to the schedule of fees that was last revised on March 2, 1979, and that was discussed in the previous review. The fees are paid directly to the State General Fund, however, they are specifically ear marked for the Radiological Health Branch. Mr. Fuente stated that the fees fund approximately 16% of the budget.

Administrative Procedures. To assure uniformity in operational aspects by the various staff members the staff has kept informed of current developments through the issue of policy memorandums and through the use of an internal policy manual that covers licensing inspection enforcement, X-Ray procedures, and Environmental Laboratory procedures. This manual was discussed in the previous review report. Through the use of this manual and due to the small number of staff the administrative procedures are quite adequate to provide a high degree of uniformity and continuity in regulatory practices.

The Radiation Control Program has developed licensing and inspection guides which have been patterned after NRC guides and some guides and procedures from other states.

A semi-annual statistical tabulation of licensing and inspection information is prepared by hand by the branch personnel and supplied to NRC. It was recommended to Mr. Fuente and to Dr. Cobb that the licensing and inspection data be handled with automated data processing equipment which would greatly enhance the internal management of licensing and inspection procedures for both the staff and management.

License and registration fees data are managed by the program staff. A statement of fees due and the annual billing date is conducted on March of each year. Procedures call for three billings after which a list is generated of delinquent fees. The fee data is handled through the use of data processing equipment. A review of the overdue fee list revealed that less than \$200.00 of the Agreement Materials Program fees were overdue. A number of X-Ray facilities were overdue, most of which were dental units and the total fees overdue from X-Ray units were less than \$2,000.00.

Press releases and the handling of public relation problems or questions are handled through internal policy by the State Public Health Information Officer. The State Public Information Officer is kept informed of unusual public relations subjects and is consulted whenever press releases are needed. For the convenience of the public in obtaining agency public documents the agency PDR has been established in Room 247, 2423 North State Street, Jackson, Mississippi. The PDR provides limited services to members of public upon request for access to public documents on file. As a general administrative rule, all information is made a matter of public record except when a formal request is received from the applicant and the information meets the criteria for withholding such information from public record. Such materials may include matters dealing with industrial security for a process, or memoranda which reflect advice, opinion or recommendations rather than statements of facts.

Planning. The Radiation Control Program management periodically assess workload trends, resources, and change in legislative and regulatory responsibilities with the staff to determine equipment services and funding. However, time has not been utilized for formal reporting except as required for budgetary needs.

Laboratory Support. The program has its own laboratory for the analyses for environmental independent measurement type samples or samples containing alpha, beta, gamma or neutron emitters. A mobile laboratory now exist in a trailer for use by the Radiological Health Branch. A complete listing of the Program Radiation Counting Equipment is attached as Appendix D.

Office Facilities, Equipment and Support Services. Mr. Fuente stated that the office space has been considered adequate in the past but with increased personnel additional space would be needed, and the laboratory room is quite restrictive. He also stated that the Health Officer had plans for a new building which would include additional office space and laboratory facilities. The level of secretary support for the agreement material program is 0.4 person year per 100 licenses administered. Some automated data processing is available through the State word processing center, however, the utilization of the word processing center has been restricted with respect to the radiation program use. This was discussed with Mr. Fuente and Dr. Cobb at the close out meeting and it was recommended that the agreement program be upgraded with additional automatic data processing capability.

Public Information. Licensing and inspection files are not open to the public but an individual may request a specific file or information. If it is determined than an individual needs only to see a license or a specific document then that is all of the material that is provided. Similarly, inspection files are available for public viewing when an adequate reason is given. Mr. Fuente stated, that this policy is consistent with state administrative procedures and that proprietary information is protected from public disclosure by agency procedures.

## PERSONNEL

Qualifications. Job discriptions for the professional staff were changed during 1980. The minimum requirements for a Health Physicist Trainee is a bachelors degree from an accredited four year college or university with a major in physics, chemistry, biology, or mathematics or a closely related physical or natural science such as engineering or biology. The minimum requirements for Health Physicist I, II, and III positions require 1, 2, or 3 years of training in addition to the above minimum requirements or a year of training at each of the HP grade levels. All of the professional staff either meet or exceeds the minimum education qualifications. The revised job discriptions have been included as Appendix E.

Number of Personnel. The following breakdown of program effort for the Radioactive Materials Program was provided by Mr. Fuente.

| <u>Name and Title</u>                                   | <u>Person-Year in<br/>Radioactive Materials</u> |
|---|---|
| Eddie S. Fuente, Director<br>Radiological Health Branch | .25   |
| Jeff Grasser<br>Health Physicist III                    | 1.00  |
| Barbara Erwin<br>Health Physicist I                     | 1.00  |
| Health Physicist Trainee                                | Vacant  |
| Alice D. White, Secretary                               | .65   |
| Ouida George, Clerk-Typist                              | .35   |

The person years applied to the Health Physicist positions were not full-time due to the training involved for these persons. The reviewer considered the full-time professional staff persons years as 2.25 person-years for 276 licenses or 0.82 persons-years per 100 licenses. This low staffing level does not compare favorably with the NRC guideline range of 1 to 1.5 person-years per 100 licenses. It was recommended to Mr. Fuente and Dr. Cobb that the vacant position be filled as soon as possible and they were aware of the time it takes for Junior level staff members to become trained in inspection and enforcement activities.

Duties. Mr. Fuente supervises the entire Radiological Health Branch including all sections and with respect to the agreement materials program he signs licenses, reviews inspection reports, signs enforcement letters and on occasion will accompany inspectors. Mr. Grasser and Ms. Erwin were both assigned full-time duties in the agreement materials program and each person has been trained to perform license reviews and independent compliance inspections. Mr. Grasser was formally a X-Ray inspector before being promoted to the Health Physicist III position in the Radioactive Materials Section. Mr. Charles Hilton, Health Physicist III is Supervisor of the X-Ray program and he has sufficient training and experience to work in the Materials Section if needed.

Training. The training program for the Radiological Health Branch consists primarily of attendance for the staff members at the NRC sponsored courses and on-the-job training with senior staff members until the new staff members become proficient in their duties. The new staff member accompanies a senior Health Physicist on materials inspections to observe operations and after several inspections the junior staff member is allowed to perform inspections under the direct supervision of a senior staff member. New staff members are not only trained on inspection procedures but also in the techniques of license application reviews. The State Health Department has a program that will permit economic subsistence to qualified staff members for attendance in graduate degree programs. However, due to economics and low staffing levels in the Radiological

Health Branch, the branch has not been able to participate in this program in recent years. Training efforts since the last years review has been 76 days for the Radiation Control Program staff. This corresponds to approximately 5% of the total professional staff effort as having received training and this compares favorably with the 5-10% training effort guideline range recommended by NRC. The agreement materials staff is currently undergoing training at NRC core courses and have been scheduled for additional NRC core courses in the coming fiscal year. It was noted to Mr. Fuente that the agreement materials staff have never attended the NRC sponsored course "Teletherapy Calibration". This is primarily due to the course being cancelled by NRC I&E during the past fiscal year. It was recommended that the agreement materials staff attend the teletherapy calibration short course when the course is rescheduled by NRC. The reviewer also stated that on-the-job accompaniment type training in teletherapy spot check measurements could be made available to his staff on a limited bases if needed. Staff attended training courses during the review period are as follows:

- Fuente, Eddie S. - Radiological Emergency Response Coordinator Course, sponsored by FEMA in Metairie, Louisiana, May 12-16, 1980.
- Hilton, Charles E. - Radiological Emergency Response Coordinators Course sponsored by FEMA at Metaria, Louisiana, May 12-16, 1980.
- Grasser, Jeff, - Medical Uses of Radionuclides for State Regulatory Personnel sponsored by NRC in New York during March 23-27, 1981.
- Safety Aspects of Industrial Radiography for State Regulatory Personnel sponsored by NRC in Baton Rouge, Louisiana during April 6-10, 1981.
- Erwin, Barbara, - Safety Aspects of Industrial Radiography for State Regulatory Personnel sponsored by NRC in Baton Rouge, Louisiana during August 18-22, 1980.
- Inspection Procedures sponsored by NRC in Glenn Ellyn, Illinois during August 24-29, 1980.
- Medical Uses of Radionuclides for State Regulatory Personnel sponsored by NRC in New York, New York during September 22-26, 1980.



Salaries. The salary ranges for the various positions in the branch are as follows:

| <u>Position</u>                       | <u>Salary Range</u> |
|---------------------------------------|---------------------|
| 1. Director                           | 20,155 - 30,201     |
| 2. Environmental Engineer in Training | 17,700 - 24,731     |
| 3. Health Physicist III               | 16,515 - 23,171     |
| 4. Health Physicist II                | 15,100 - 20,987     |
| 5. Health Physicist I                 | 13,665 - 19,177     |
| 6. Health Physicist Trainee           | 12,480 - 15,017     |
| 7. Lab Technologist II                | 12,480 - 18,699     |

Promotional opportunities are available to the staff if a position is vacant and the necessary funds are available. Opportunities for advancement within the program arise through a vacancy in a higher level or by special approval of both the state State Health Officer and the Budget and Finance Commission. There are ten steps from the minimum to the maximum salary in each position. There is one year interval between steps 1 and 8. Above step 8 there are two longevity steps in which salary increases depend upon years of service and approval by the Budget Commission. Periodic salary increases such as cost of living and longevity are based upon a grant from the Mississippi legislature.

Salary increases since the last review have ranged from 7 to 12 percent for the Health Physicist positions. This range is based upon two types of increases. The individuals were provided a cost of living raise and a productivity raise. There has not been an upgrading of the Health Physicist positions relative to other professional categories. It was recommended to Mr. Fuente and Dr. Cobb that the NRC would support a realignment of the Health Physicist personnel relative to other professional categories in the Mississippi state government and relative to those salaries which the professionals would receive in other states in the region and private industry.

Staff Turnover. The radiation program has experienced a 50 percent turnover in staff since the last review meeting. The primary reason given for this turnover has been salary ranges as some of the most experienced staff have gone to other positions and other agencies. At the time of the review there was one Health Physicist Trainee vacancy under the agreement materials program and one Laboratory Technologist II vacancy in the Environmental and Emergency Response Plan Section. Since the last review six persons have left the Radiation Control Program. The Health Physicist III supervisor of the agreement materials program was replaced by Jeff Grasser. The Health Physics III Supervisor in Environmental and Emergency Response Plan was replaced by Greg Dimpsey.

Recruiting. There have been no changes in the methods that the program fills vacancies since the last review meeting. Vacancies are normally filled through the personnel office using Mississippi State Merit System procedures. Applicants for professional positions in the branch are not required to take a written examination. Outside advertisements are utilized in recruitment efforts. Notices are sent to all state agencies by the personnel office.



## REGULATIONS

Compatibility. Mississippi revised their Radiation Control Regulations effective January 12, 1980, and a copy of the regulations were placed in the state agreement program files. It was determined that the regulations adopted were compatible with those of NRC.

It has been the policy of the branch to comment on the proposed changes to NRC's regulations when appropriate. The state can adopt regulations administratively and licensees are notified of such changes when needed.

The January 12, 1980 revision of the state regulations were amended during action by the Mississippi State Board of Health on December 13, 1979. This action permitted disposal of radioactive material by release into the sanitary sewer system, disposal by incineration, disposal of specific waste and modification of records of surveys, radiation monitoring, and disposal. This regulation revision is a supplement to the 1980 revision as published and is included in this report as Appendix F.

A memorandum was sent to all "Mississippi Teletherapy Licensees and Linear Accelerator Registrants" from Mr. Fuente on June 23, 1980, in which the teletherapy and/or accelerator room radiation monitor and the use of a portable radiation survey meter requirement was instituted. The administrative action required the licenses to install in each teletherapy or accelerator room, a radiation monitoring device to continuously monitor beam condition, it required the monitor to be equipped with a back-up battery power supply and required a visible signal to make the operator continuously aware of beam condition and it required operating procedures to be monitored to require daily operational testing of the installed radiation monitor. It was noted during the review that "Special Requirements for Teletherapy License", 10 CFR 35.21 through 35.35 have not been incorporated into a Mississippi regulations or as a license requirement. This rule became effective on July 9, 1979, and it was recommended to Mr. Fuente that the revisions of 10 CFR 35.21 through 35.25 be incorporated into Mississippi rules or into the teletherapy license requirements.

A copy of the memorandum ordering changes in the teletherapy and/or accelerator room radiation monitor and the use of the portable radiation survey meter has been included as Appendix H.

Updating of Regulations. Complete updating of Mississippi regulations require several months for complete action. The action involves the following procedures: (1) regulations are submitted to the Radiation Advisory Council, (2) 30 days before the State Board of Health's consideration of proposed regulations or amendments to regulations, notice of intended action must be given to the Secretary of State and persons having requested advanced notice of the rule making proceedings, (3) State Board of Health's consideration and adoption of the regulations, and (4) adoption, amendment or repeal by the State Board of Health must be filed by the Secretary of State at least 30 days before the effective date.

Drafts of the regulation revisions are provided to the NRC for comment at the same time that they are presented to the Radiation Advisory Council. Depending upon the type of regulation revision, the state has the option of adding additional conditions to the licensing documents and the state can issue orders if a health and safety condition exists.

The Mississippi regulations provide transportation requirements under 801.C.100, "Preparation of Radioactive Material for Transport". A copy of this regulation is included in the January 12, 1980 revision and it appears that this regulation is compatible with the NRC and DOT regulations.

## LICENSING

Licensing Actions. As of the date of this review there were 276 active licenses in the State of Mississippi. Since the last review 326 licensing actions have been performed by the staff. Of these, 36 were new licenses and 290 were amendments. It was noted during the review that many of the licensing actions for renewal were for Priority I, II, or III licenses that have a renewal frequency more restrictive than that practiced by NRC and many other Agreement States. This creates additional workloads for the program staff and it was also commented that many state programs and the NRC have gone to a 5-year renewal frequency for all materials licenses.

In all of the license files that were reviewed, the information that was submitted to the agency by the applicant was sufficient to describe the essential elements of the applications in sufficient detail to establish the basis for licensing action. Two pre-licensing visits for complex licenses were performed since the last review. Pre-licensing visits are made on a case-by-case bases on the judgement of the license reviewer. There were two very complex licensing actions since the last review. The licensing actions on these cases have not been completed as the applications were sent to this office for our comments and review. These applications were for a Nuclear Pharmacy and a Nuclear Laundry.

Applications in this category have never been issued by the state. Renewal applications are reviewed to assure that supporting information is in the file and that the information reflects the current scope of the licensees program.

Adequacy of Product Evaluations. The Radiological Health Program did not evaluate any devices or sealed sources during this review period.

Licensing Procedures. The branch internal policy manual has licensing guides and standard license conditions that are essentially identical to those used by NRC. The state has developed their own medical licensing guide which also is essentially identical. Licensing checklists are not routinely used by license reviewers and it was recommended to Mr. Fuente and his staff that license reviewers use checklists as an aid for assuring that reviews of applications are complete. These checklists should be developed to reflect the items referred to in the NRC Regulatory Guides 10.2, 10.5, 10.8 and Division 8 Regulatory Guides. These checklists should remain with the license application for review by management.

During this review a total of 13 license files were reviewed. Details of the license file review are attached to this report as Appendix I. License applications cover pertinent points of an acceptable radiation program but in some cases detailed information was lacking; for example, one application needed more details on the incinerator use, leak test procedures, and bioassay procedures; some licenses needed more details on QA test and calibration of dose calibrators; some licenses needed more details on how surveys would be performed; one research application did not define what was meant by the term "lower animals"; and one mobile nuclear medicine service license application needed additional information to determine that a "portable" dose calibrator would not be used.

It was also noted during the review that licenses are issued periods ranging from 1 to 4 years depending upon the priority of the license. Priority I and II licenses are renewed every year (although in most cases the renewal is primarily an extension of the expiration date). Priority III licenses are renewed every three years, and priority IV licenses are renewed every four years. This renewal frequency is more restrictive than that practiced by NRC and many other agreement states and it creates additional workloads for program staff and the licensee. The reviewer feels that the time could be more advantageously spent in other program areas needing attention such as inspections. It was noted to Mr. Fuente that many state programs have gone to a 5-year renewal frequency for all material licenses.

The timely renewal procedure in use by the RCP is essentially the same as described in previous reports. A renewal notice is sent to the licensee approximately 30 days in advance of the license expiration date. If a renewal application is not received, a second notice is sent and telephone contact is attempted with the licensee. There is no indication that renewal applications have been a problem in the program.

Because the licensing reviewers and the inspection staff are one and the same, the program is easily coordinated between licensing and compliance activities, which results in frequent review of the compliance history and backup information in the license application. Files are maintained in an orderly fashion which allows for fast and accurate retrieval of information and documentation. The small staff also allows for a successful exchange of information program with the NRC.

Quality Assurance. Mr. Fuente checks and signs all licenses after they are prepared. Because of the change in personnel in the Materials Section since the last review, some temporary quality control problems were experienced; however, the staff has now been trained and it appears that the quality control problem has been corrected. Two licenses had typographical errors in which the licenses listed group I materials in license item 6, and group II materials in license item 7. It was noted that in a well logging license, a license condition placed additional labeling requirements on a "vehicular storage compartment door", where a container would be stored, and referenced the Mississippi State Board of Health and Environmental Regulations, Part 801-Radiation, Section D.203(f)(1). This reference applies to the labeling of containers. The appropriate reference

section should have been "Section D.201(e)," which applies to "areas" where a container may be stored. The additional labeling requirements "Keep Three Feet Away" were on the storage area rather than the storage container. It was recommended to Mr. Fuente and his staff that a quality assurance procedure be established to identify and correct any licensing discrepancies before they are mailed to the licensee.

Medical Advisory Committee. The branch still uses the medical members of the Radiation Advisory Council as an informal Medical Advisory Committee. Mr. Fuente stated that this committee took no actions during this review period.

### COMPLIANCE

Status of Inspection Program. The program utilizes a combination of a filing system and a "status board" to determine the number of inspections due by priority at any given time. The status board is mounted on the wall showing each county which has pins indicating the number of inspections due in each priority. The status board is updated after each inspection by the person performing the inspection. The status board is reviewed on a semi-annual basis. NRC reports are developed from the board and information in the filing system. Mr. Fuente reported that 132 inspections were performed since the last review period. The number of overdue inspections as of September 11, 1981, was 45. A table listing the priority of inspections performed and inspections overdue is shown below:

| <u>Priority</u> | <u>Inspections Performed</u> | <u>Inspections Overdue</u> |
|-----------------|------------------------------|----------------------------|
| I               | 32                           | 5                          |
| II              | 33                           | 11                         |
| III             | 30                           | 9                          |
| IV              | <u>37</u>                    | <u>20</u>                  |
| Total:          | 132                          | 45                         |

The five Priority I inspections are overdue by 12 to 26 months. All of these Priority I licenses overdue are radiographers and most are out of state licensees that have established offices within the state. The total inspections overdue list has increased by 6 percent since the last review. However, this increase was in the Priority III and IV categories primarily, and was a result of personnel changes and training in the agreement materials program. It was recommended to Mr. Fuente that an effort be made to reduce the number of overdue inspections particularly those of Priority I and II licenses.

As previously noted in this report it was recommended to Mr. Fuente during the review that consideration be given to the use of an automated data processing system for the management of licensing and inspection data. An automated system is currently being utilized for the fee collection process but this computer is located in another department and we were pleased to learn during the closing interview with Dr. Cobb that appropriate consideration would be given to the Radiation Control Program data processing needs.



Inspectors Performance and Capability. Program management evaluates inspector capability by reviewing inspection reports and inspector accompaniments. Since the last review Mr. Fuente accompanied Jeff Grasser on a radiographic licensee inspection and he also accompanied Jeff Grasser and Barbara Erwin on a radiographic inspection. During the accompaniments the inspectors were evaluated to assess their performance and to assure uniform application of branch policies and guides.

An accompaniment by the NRC reviewer was made of a state inspector during this review. The state inspector was found to be competent to evaluate health and safety problems and licensee compliance with state regulations.

Response to Incidents and Alleged Incidents. The staff stated that inquiries are promptly made to evaluate the need of an onsite investigation whenever the state receives notification of an incident or an alleged incident. Evaluations are made on a case by case basis, and in general prompt investigations are performed of incidents that are required to be reported to the agency within 30 days. The staff also stated that if medical consultants were not available within the state that the branch would not hesitate to call upon NRC consultants.

As of the date of this review 3 incidents had occurred since the previous review of 1980. These incidents are summarized as follows:

On November 9, 1980, the state civil defense called the branch about a vial that was found by some boys. This vial was labeled as having contained gallium-67 and the date on the label was 5-17-78. The vial was disposed of by a local licensed hospital. This incident was investigated by the branch staff and no activity was found. Incident closed.

On March 3, 1981, the State Civil Defense notified the branch that they were missing a radium-DEF instrument check source that had been lost during a training exercise. This check source was never found but was determined not to be a health and safety matter. Item closed.

On July 24, 1981, an Alabama licensed radiographer reported a source disconnected during radiographic operations. The disconnection resulted in two radiographers receiving doses of 12R and 6.78R. The incident was investigated by Mr. Fuente and Mr. Grasser. Pictures of the reenactment were taken and Mr. Fuente stated that their assessment revealed that the radiographers probably received less than 5R. Compliance actions on this incident are still pending and the incident has not been closed as of the date of this review. The State of Alabama was made aware of the incident and copies of correspondence were sent to the Alabama RCP.

Enforcement Procedures. Branch forms RH-8 are issued when inspection findings show that no items of noncompliance or only minor items of noncompliance have occurred. This form is essentially identical to the NRC Form 591. Enforcement letters are issued within 30 days of the inspection; however, the goal of the branch is to issue the enforcement letter within seven days and the letters require a 10-day response time from the licensee. Enforcement letters are

reviewed and signed by Mr. Fuente. Upon receipt of the enforcement response from the licensee, the response is reviewed by both the program Director and the inspector prior to acknowledging receipt of the response. The enforcement letters request the licensee to state what steps will be taken to prevent a recurrence of the noncompliance item. The letters clearly specify all items of noncompliance and health and safety matters identified during inspections and they reference the appropriate regulation or license conditions that were violated.

The branch has the authority to impound radioactive material under section 45-14-23 of the Mississippi Radiation Control Act and to hold hearings to show cause why a license should not be revoked.

Equipment Failure. Mr. Fuente stated that there had been no incidents which resulted from equipment failures which could have been generic in nature since the last review period. He also confirmed that his office would notify the NRC or any other state agency as needed.

Inspection Procedures. An inspection manual has been prepared by the staff and consists of NRC inspection guides, policy memos, checklist, and branch directives. The field inspection reports are patterned after the field reports used by NRC. It is the states policy to conduct unannounced inspections except in cases where a specific visitor or Health Physicist is needed to be present during the inspection. Exit interviews are held with the highest level of management available at the end of the inspection. Upon return to the office the inspectors will debrief Mr. Fuente, particularly if any items of noncompliance are noted.

It was noted during the inspection accompaniment and based upon discussions with other staff, considerable time is utilized at the beginning of the inspections for a detailed review of the licensee records. It was recommended to the staff and Mr. Fuente that inspectors focus more on the operational aspects of the radiation protection program and its management and less on records review. Specifically, after the entrance interview the inspectors should (a) conduct a tour of the operations and facilities to observe security, housekeeping, availability of safety equipment, posting and labeling, (b) observe operations to determine if protective equipment is being utilized, and (c) interview selected workers and auxiliary personnel to determine the level of instruction and training provided to the workers. The inspection should assess the effectiveness of managements role in the radiation safety program, particularly managements awareness of the safety program, reports to management, internal audits, and the corrective actions taken along with the ALARA program. The record system then must be evaluated to determine if the system is working properly, if the records are reviewed by the radiation safety office and management, and to document compliance.

Inspection Frequency. The states inspection priority system has not changed during the last two reviews. However, the inspection frequency as related to license priority and the categories of licenses in each priority is listed in Appendix K. In general the inspection priority system is more frequent than NRC's, specifically those categories in priorities II, III, and IV.



Mr. Fuente stated that his staff must obtain an appointment with Ingalls Shipbuilding Company before performing an inspection. This is an exception to the unannounced inspection policy. Also he stated that broad license inspections are usually announced because of the difficulty of meeting with appropriate users and management, who are subject to be on sabbatical leaves, vacations and during periods of active classroom participation. The state also has a policy of inspecting all radiographic licensees who are in the state under reciprocity. On occasion the state has had trouble with Alabama licensees coming into Mississippi without proper notification.

Adequacy of Inspection Reports. A review of selected compliance files is attached as Appendix L. In general the documentation contained in the inspection files is adequate to document health and safety matters, describe the scope of inspection, discussions held with licensee management, previous items of noncompliance, interviews with workers, and independent measurements.

Inspection reports reviewed during a meeting show considerable improvement over previous reports in the license files, however in several files, additional details are needed for documentation of (a) entrance and exit interviews with management, (b) scope of the licensees program, (c) personnel monitoring programs and exposures received, (d) independent measurements performed by the inspector and (e) some reports had not been signed as having been reviewed by management. The reviewer did not feel that this was a major item; however, it was recommended to the staff and Mr. Fuente that reports be reviewed by supervision, and training seminars be conducted as needed to assure that reports adequately document inspection findings and in particular the items addressed in the above comments.

Independent Measurements. A list of radiation survey instrumentation is attached to this report as Appendix D. In general the states policy is to obtain independent measurements during each inspection. Surveys and smears are being taken during most inspections and documented in the inspection reports. It was emphasized to the staff the importance of conducting independent measurements and that consideration should be given to conducting independent measurements as a "mini" training course during the inspection and discussions with licensee staff. The importance of conducting frequent independent measurements and the methodology used, was stressed as being very effective means to demonstrate to the licensee staff the proper methods and techniques to use during surveys.

It was noted that the staff does not conduct teletherapy spot check measurements. This is because staff members have never attended the teletherapy spot check training course conducted by NRC/IE. Mississippi staff members were scheduled to attend this course during the summer of 1981; however, the course was cancelled by NRC. It was recommended that the staff attend this course whenever it becomes available. It was also stated to Mr. Fuente and Dr. Cobb that should the teletherapy procedures course not become available from NRC that the reviewer would be available to provide some training in this area in the form of inspector accompaniments and on a one-to-one basis with the state's staff.

The instrumentation used for surveys in the field, and the laboratory instrumentation appears to be adequate for program operations. With regards to calibration, the Branch has an understanding with Dr. Paul Skierkowski, who is the Radiation Safety Officer at the University of Mississippi for calibration of state equipment. The Branch calibrates on a 6-month frequency; however, the understanding with Dr. Skierkowski is that instruments will be calibrated per the state's request utilizing two cesium-137 sources. The calibration also can be done at the Oxford facility by the state personnel.

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

Surveillance of Radiation Producing Machines. As noted in previous reports the state licenses and regulates naturally occurring and accelerator produced radioactive materials (NARM). As of this review the state had only one radium gauge license and had not licensed any accelerators to date. As previously noted, one source of revenue for the state is a FDA X-Ray Compliance contract. The state has been very active in the inspection of X-Ray machines under this contract. The NARM sources are licensed in the same matter as agreement materials.

Environmental Surveillance. As noted in previous reports the state still maintains an environmental monitoring program. The environmental section samples water in accordance with the Safe Water Drinking Act and samples are collected from locations throughout the state and reported to EPA annually. Public water supplies are monitored for gross alpha and beta content and further analyses are performed if gross alpha exceeds 5 picocuries per liter or if gross-beta exceeds 50 picocuries per liter. An active environmental sampling program is conducted in the vicinity of the Grand Gulf Nuclear Station, Tatum Salt Dome, Ingalls Shipyard, and other miscellaneous locations. A listing of these locations including sample types, location, frequency, and type of analysis is provided in Appendix M.

LIST OF APPENDICES

- A. Organizational Chart - State Board of Health
- B. Organizational Chart - Radiological Health Branch
- C. Radiation Advisory Council
- D. Instrumentation
- E. Job Descriptions
- F. Waste Disposal Amendment
- G. Teletherapy Room Monitor Requirement
- H. License Reviews
- I. Inspection Frequency
- J. Compliance Reviews
- K. Environmental Surveillance

APPENDIX A  
ORGANIZATIONAL CHART  
MISSISSIPPI STATE BOARD OF HEALTH

MISSISSIPPI STATE BOARD OF HEALTH

ORGANIZATION CHART

CENTRAL OFFICE

STATE HEALTH OFFICER - Chief of Special Staff

BUREAU OF PERSONAL  
HEALTH SERVICES

BUREAU OF ENVIRONMENTAL  
HEALTH

BUREAU OF  
TECHNICAL SERVICES

BUREAU OF  
ADMINISTRATIVE SERVICES

Sanitation  
Division

Environmental  
Engineering Division

Public Water Supply

Radiological Health

Solid Waste Management

Occupational Safety & Health

Milk & Shellfish Sanitation

Food/General Sanitation & Vapor  
Control

Child Care

APPENDIX B  
ORGANIZATIONAL CHART  
RADIOLOGICAL HEALTH BRANCH



RADIOLOGICAL HEALTH BRANCH  
BUDGET 502

Attachment #2

DIRECTOR II  
Fuente 0404

CLERICAL

Secretary IV  
White 0410

Clerk Typist III  
George 0416

RADIOACTIVE MATERIALS

Health Physicist III  
Grasser 0407

Health Physicist I  
Erwin 2981

Health Physicist Trainee  
Vacant 3190

X-RAY

Health Physicist III  
Hilton 0406

Health Physicist Trainee  
Gaines 2925

Health Physicist Trainee  
Hasty 2982

ENVIRONMENTAL AND  
EMERGENCY RESPONSE PLAN

Health Physicist III  
Dempsey 0405

Health Physicist Trainee  
Buckley 0409

Health Physicist Trainee  
Smith 0408

Laboratory Technologist II  
Vacant

General Service Employee II  
Watkins 3426

LOW AND HIGH LEVEL WASTE

Environmental Engineer  
(In-Training)  
Green 2978

APPENDIX C  
RADIATION ADVISORY COUNCIL

MISSISSIPPI RADIATION ADVISORY COUNCIL

| NAME   | REPRESENTS                                  | DATE APPOINTED                      | TERM EXPIRES                        |
|--|---|-------------------------------------|-------------------------------------|
| Senator James D. Disharoon<br>Post Office Box 750<br>Hazlehurst, MS 39083<br>(601) 894-1417  | Miss. State Senate (1st)<br>(2nd)           | May, 1980<br>Aug. 1980              | Aug. 1980<br>Aug. 1982              |
| Representative Don W. Richardson<br>P. O. Box 9332<br>Jackson, MS 39206<br>(601) 982-2969  | Miss. House of Rep. (1st)<br>(2nd)<br>(3rd) | Aug. 1976<br>Aug. 1978<br>Aug. 1980 | Aug. 1978<br>Aug. 1980<br>Aug. 1982 |
| T. Scott McCay, M.D. (Radiologist)<br>St. Dominic Hospital<br>969 Lakeland Drive<br>Jackson, MS 39216<br>(601) 982-0121  | Miss. St. Med. Assn.                        | July, 1981                          | Aug. 1982                           |
| Dean Williams, D.D.S.<br>2807 Old Mobile Highway<br>Pascagoula, MS 39567<br>(601) 769-8521   | Miss. Dental Assn.                          | Dec., 1979                          | Aug. 1982                           |
| Ottis G. Ball, M.D. (Radiologist)<br>Dept. of Radiology<br>Division of Nuclear Medicine<br>Miss. Baptist Medical Center<br>1225 N. State Street<br>Jackson, MS 39201<br>(601) 968-1722 | Miss. Radiological Soc.<br>(2nd)            | Aug. 1976<br>Aug. 1980              | Aug. 1980<br>Aug. 1984              |
| Mr. J. P. McGaughy, Jr.<br>Asst. Vice President, Nuclear Prod.<br>Miss. Power & Light Co.<br>P. O. Box 1640<br>Jackson, MS 39205<br>(601) 969-2399                                     | Private Industry                            | Aug. 1980                           | Aug. 1984                           |
| John I. Paulk, Ph.D., P.E.<br>Assoc. Dean & Dir. of Engineering<br>and Industrial Research Station<br>Mississippi State University<br>P. O. Drawer DE<br>Mississippi State, MS 39762   | Institutions of<br>Higher Learning          | (1st) Aug. 1976<br>(2nd) Aug. 1980  | Aug. 1980<br>Aug. 1984              |
| Victor Minella, D.C.<br>Pachuta, MS 39347  | Miss. Chiropractic<br>Association           | Sept. 1978                          | Sept. 1982                          |

APPENDIX D  
INSTRUMENTATION

## INSTRUMENTATION

### Laboratory:

Eberline Radiation Monitor (GM)  
Model #RM-4  
Detector HP-270

Packard Tri-Carb (3H)  
Liquid Scintillation Spectrometer  
Model #3375

Gamma Products (A,B)  
Low Background Alpha-beta  
Model #G4000

Tennelec (A,B)  
Low background Alpha-beta  
LB1000 Series  
2 detectors

Harshaw Chemical Co. (Direct Radiation)  
Thermoluminescence Detector  
Model #3000, 2000A, 2000B, 2000P

Random Electronics (A)  
Alpha Scintillation Counter  
Model 918-A

Nuclear Data (Gamma Isotopic)  
Model 6600 Computer System  
W/PGT 15% Geli, 3 X 3 NaI

### Field:

Nuclear Measurement Corp.  
Air Samplers Model #A8-77-R(9)

Pneumatic Air Sampler (ERAMS)  
Model #1-32025(6)

Staplex Portable Air Sampler (3)

Eberline Alpha Counter (A)  
Model PAC-4G (2)

Eberline Alpha Probe (A)  
Model #AC-21 (2)



Victoreen Survey Meter (Lab and Field) (GM)  
Thyac II

Eberline Geiger Counter (GM)  
Model #E-510 (4)

Reuter-Stokes, PIC (PIC)

Eberline Portable ION Chamber (PIC)  
Model PIC-6A

Eberline Geiger Counter (GM)  
Model #E-520 (2)

HP Probe Model #HP-270 (2) (GM)

Lublum Micro R Meter (Scintillation)  
Model #19 (5)

Rade Co., Inc., Portable Air Sampler  
Model H-809B (2)

APPENDIX E  
JOB DESCRIPTIONS

## BRANCH DIRECTOR II

### Characteristics of Work

This is administrative work in which the incumbent serves as director of a medium-sized branch within a division of an agency. Work involves formulating, directing and controlling the operations of a branch through section needs and other subordinate personnel. Incumbent establishes objectives, standards and control measures for programs which are limited in scope and in impact. Incumbent also determines policy in own area of expertise and provides input into other phases of agency operations. Internal and external contacts are made to provide and exchange information, coordinate activities, and provide assistance and guidance. Work is subject to infrequent review through conferences and reports by the division director to whom the incumbent reports.

### Examples of Work

The following examples are intended only as illustrations of various types of work performed in positions allocated to this occupational class. No attempt is made to be exhaustive; related, similar, or other logical duties are performed as assigned.

Plans, directs, and coordinates the activities of a branch through section heads and other subordinate personnel.

Formulates policies, rules and regulations as necessary.

Ensures coordination of activities of the branch with other branches within the division.

Assists in directing fiscal accounting and budgeting activities.

Assists in approving budget requests and expenditures.

Provides administrative leadership for all phases of programs within the branch.

Maintains effective public relations with other state agencies and the public, including interpretation and advocacy of agency policy.

Approves appointment of personnel as needed.

### Minimum Requirements

A Master's Degree from an accredited four-year college or university and five (5) years in the special experience defined below, three (3) years of which must have included line or functional administrative or advanced technical supervision,

OR

BRANCH DIRECTOR II  
Page 2

Minimum Requirements (Cont'd)

A Bachelor's Degree from an accredited four-year college or university and six (6) years in the special experience defined below, three (3) years of which must have included line or functional administrative or advanced technical supervision,

OR

Above the high school diploma or equivalent (GED), related experience may be substituted on an equal basis for education, except there shall be no substitution for the six (6) years special experience and the three (3) years line or functional supervision.

Special Experience

Employment must have been in an administrative, professional capacity in an area of work related to the functional responsibility of the branch in which the position exists. In those branches where registered specialists provide the primary source of functional and technical knowledge for planning and accomplishing the mission of the branch, the incumbent must also be registered and experienced in that profession. Work experience must have included supervising and coordinating a variety of functions.

## ENVIRONMENTAL ENGINEER IN TRAINING

### Characteristics of Work

This is entry level environmental engineering work involving routine application of engineering principles of a professional nature in connection with the implementation of federal, regional, and statewide programs for the control of drinking water, air and water pollution, or other environmental activities. The work affords some opportunity for the use of independent judgment in planning work details and making minor technical decisions. The work involves some contacts with federal, state, county, and municipal officials, consulting engineers, industrial officials, developers, water and sanitary system operators, and the general public. On some assignments, supervision is exercised over subordinate engineering and/or clerical personnel. The work is performed under close supervision from an environmental engineer of a higher classification.

### Examples of Work

The following examples are intended only as illustrations of various types of work performed in positions allocated to this occupational class. No attempt is made to be exhaustive; related, similar, or other logical duties are performed as assigned.

Conducts on-site inspections of public water supply systems, pollution abatement facilities, systems under construction, discharge points, complaint sites, and sampling points.

Provides limited technical assistance to local government officials, industrial officials, consulting engineers, developers, and system operators on drinking water systems and air and water pollution control systems.

Answers routine questions and provides information about drinking water and air and water pollution systems, standards, and regulations.

Conducts field tests to ensure proper operation of air and water treatment systems.

Processes the issuance of permits.

Prepares work progress reports.

### Minimum Requirements

A Bachelor's degree from an accredited four-year college or university in engineering, preferably with courses in environmental engineering,

AND

Possession of a valid certificate of registration as a Professional Engineer from the Mississippi State Board of Registration for Professional Engineers.



## HEALTH PHYSICIST II

### Characteristics of Work

This is professional work involving a radiological health program. Incumbents in this classification plan and conduct inspections and surveys of all types of facilities using radioactive material; and develop and implement an environmental radiation surveillance program. The work includes coordinating programs involving the application of professional radiological theories and the interpretation of laws, rules, requirements and activities of a radiological health program. Supervision is received from a health physicist of a higher classification or an administrative superior.

### Examples of Work

The following examples are intended only as illustrations of various types of work performed in positions allocated to this occupational class. No attempt is made to be exhaustive; related, similar, or other logical duties are performed as assigned.

Assists in conducting a radiological health program.

Plans and conducts dental, medical, and industrial x-ray inspections.

Reviews and evaluates design specifications of radiation facilities.

Reviews and issues radioactive material licenses in accordance with regulations.

Conducts inspections pertinent to radioactive material licenses issued by the Mississippi State Board of Health.

Performs compliance investigations relative to "incidents" occurring through operations authorized by the Mississippi State Board of Health Radioactive Material License.

Plans and conducts work relative to environmental surveillance activities; prepares written reports on findings.

Designs radioisotope laboratories.

Maintains records and files.

Assists in developing training programs, seminars, and conferences.

### Minimum Requirements

A Master's degree from an accredited four-year college or university in physics, chemistry, biology, or mathematics, or a closely related physical or natural science such as engineering or geology and one (1) year of experience in work related to the above described duties.

Minimum Requirements (Continued)

A Bachelor's degree from an accredited four-year college or university in the above and two (2) years of experience as stated above,

OR

One (1) year of experience as a Health Physicist I.

## HEALTH PHYSICIST III

### Characteristics of Work

This is advanced professional and supervisory work involving a radiological health program. Incumbents in this classification assist an administrative superior in planning, organizing, and directing the over-all statewide comprehensive radiation control program. Work includes preparing and supervising the preparation of clear and concise scientific and technical reports; and establishing and maintaining effective working relations with associates, subordinates, governmental or industrial officials and the general public. Employee has wide latitude for the exercise of professional judgement in all aspects of the program. Work is reviewed for conformance to established policy by the division director.

### Examples of Work

The following examples are intended only as illustrations of various types of work performed in positions allocated to this occupational class. No attempt is made to be exhaustive; related, similar, or other logical duties are performed as assigned.

Assists in planning and implementing a comprehensive program of radiation control.

Assists and supervises the work of the professional staff supervising the various sections within the division.

Assists in the formulation and interpretation of administrative policies and regulations of the radiological health programs.

Provides technical assistance and advice in all phases of the program.

Consults with professionals in medicine, research, industry, and other fields about problems involving the control and use of sources of radiation.

Assists in the establishment, enforcement and revision of the radiation regulations.

Performs administrative duties in assisting the director in areas of budgets, equipment, personnel, etc.

Assists in developing training programs, seminars, and conferences.

Initiates studies and prepares complex technical reports concerning radiological control activities.

A Master's degree from an accredited four-year college or university in physics, chemistry, biology, or mathematics, or a closely related physical or natural science such as engineering or geology and two (2) years of experience in work related to the above described duties.

Minimum Requirements (Continued)

A Bachelor's degree from an accredited four-year college or university in the above and three (3) years of experience as stated above,

OR

One (1) year of experience as a Health Physicist II.

## HEALTH PHYSICIST I

### Characteristics of Work

- This is professional work involving a radiological health program. Incumbents in this classification plan and conduct inspections and surveys of all types of facilities using radioactive material. Work is performed in accordance with rules and regulations concerning radiological health, hazards inherent to radioactive materials and the methods of controlling these hazards, which would include the disposal of radioactive waste. Supervision is received from a health physicist of a higher classification or an administrative superior.

### Examples of Work

The following examples are intended only as illustrations of various types of work performed in positions allocated to this occupational class. No attempt is made to be exhaustive; related, similar, or other logical duties are performed as assigned.

Assists in conducting a radiological health program.

Plans and conducts dental, medical, and industrial x-ray inspections.

Conducts inspections and radiation hazard surveys of all types of facilities using radioactive material.

Performs compliance investigations relative to "incidents" occurring through operations authorized by a Mississippi State Board of Health Radioactive Material License.

Plans and conducts work relative to environmental surveillance activities; prepares written reports on findings.

Maintains records and files.

Participates in radiological health training programs.

### Minimum Requirements

A Master's degree from an accredited four-year college or university with a major in physics, chemistry, biology, or mathematics, or a closely related physical or natural science such as engineering or geology.

OR

A Bachelor's degree from an accredited four-year college or university with a major in the above, and one (1) year of experience in work related to the above described duties,

OR

-One (1) year of experience as a Health Physicist Trainee.



## HEALTH PHYSICIST TRAINEE

### Characteristics of Work

This is entry level professional radiological health work. Incumbents in this classification will assist in the inspection and survey of all types of facilities using radioactive materials, and which involves use of equipment and techniques in the investigation, determination and analysis of radiation levels. Incumbents will be closely supervised by a health physicist in a higher classification.

### Examples of Work

The following examples are intended only as illustrations of various types of work performed in positions allocated to this occupational class. No attempt is made to be exhaustive; related, similar, or other logical duties are performed as assigned.

Assists in carrying out a radiological health program; conducts dental, medical, and industrial x-ray inspections.

Assists in inspections and radiation hazard surveys of all types of facilities using radioactive material.

Prepares written reports on result of surveys and inspections.

Maintains records and files.

Participates in presentation of training programs, seminars, and conferences on radiological health.

### Minimum Requirements

A Bachelor's degree from an accredited four-year college or university with a major in physics, chemistry, biology, or mathematics, or a closely related physical or natural science such as engineering or geology.

## LABORATORY TECHNOLOGIST II.

### DEFINITION

Under general direction, to perform professional scientific work of advanced character in the study and identification of microscopic organisms, procedures of serological and chemical analyses, and to perform related work as assigned.

### EXAMPLES OF DUTIES

Performs advanced professional microbiological or chemical work in the Laboratories of the State Board of Health; supervises and trains subordinates.

### EDUCATION AND EXPERIENCE

A Master's degree with a major in microbiology or chemistry or public health laboratory practice.

OR

A Bachelor's degree in microbiology or chemistry or medical technology plus two (2) years experience in a clinical or environmental laboratory.

OR

A Bachelor's degree with a total of 36 semester hours in chemistry and microbiology combined plus two (2) years experience in a clinical or environmental laboratory.

OR

A Bachelor's degree in one of the basic sciences plus a certificate in medical technology from an accredited school of medical technology plus two (2) years experience in a clinical or environmental laboratory.

### KNOWLEDGE AND ABILITIES

Thorough knowledge of current principles and techniques of public health laboratory microbiological or chemical procedures.

Ability to assume responsibilities of planning daily activities, supervising and training subordinates.

APPENDIX F

WASTE DISPOSAL REGULATIONS AMENDMENT

AMENDMENTS TO "REGULATIONS FOR THE CONTROL OF RADIATION,"  
ADOPTED BY THE MISSISSIPPI STATE BOARD OF HEALTH  
ON DECEMBER 13, 1979

It is hereby ordered that the "Regulations for the Control of Radiation," adopted by the Mississippi State Board of Health on December 13, 1979, be, and the same is hereby amended as follows:

Amend SECTION 801.D.301(b) and (c), General Requirements, to read as follows:

(b) as authorized pursuant to 801.D.302, or

(c) as provided in 801.D.303, applicable to the disposal of radioactive material by release into the sanitary sewerage system, or in 801.D.306 for disposal of specific wastes, or in 801.D.106 (Concentration in Effluents to Unrestricted Areas).

Amend SECTION 801.D.303(a)(4), Disposal by Release Into Sanitary Sewerage System, to read as follows:

(a)

(4) The gross quantity of radioactive material, excluding Hydrogen-3 and Carbon-14, released into the sewerage system by the licensee does not exceed one (1) curie per year. The quantities of Hydrogen-3 and Carbon-14 released into the sanitary sewerage system may not exceed five (5) curies per year for Hydrogen-3 and one (1) curie per year for Carbon-14.

Delete, SECTION 801.D.304(a)(b) and (c), Disposal by Burial in Soil.

Amend SECTION 801.D.305, Disposal by Incineration, to read as follows:

No licensee shall treat or dispose of radioactive material by incineration except for materials listed under 801.D.306 or as specifically approved by the Agency pursuant to 801.D.106 and 801.D.302.

Add, SECTION 801.D.306(a)(1)(2) and (b)(c), Disposal of Specific Wastes, to read as follows:

(a) Any licensee may dispose of the following radioactive material without regard to its radioactivity:

(1) 0.05 microcuries or less of Hydrogen-3 or Carbon-14, per gram of medium, used for liquid scintillation counting; and

(2) 0.05 microcuries or less of Hydrogen-3 or Carbon-14, per gram of animal tissue averaged over the weight of the entire animal; provided, however, tissue may not be disposed of under this section in a manner that would permit its use either as food for humans or as animal feed.

(b) Nothing in this section, however, relieves the licensee of maintaining records showing the receipt, transfer and disposal of such radioactive material as specified in 801.A.4 of these regulations; and

(c) Nothing in this section relieves the licensee from complying with other applicable federal, state and local regulations governing any other toxic or hazardous property of these materials.

Amend SECTION 801.D.401(b) and (c)(3), Records of Surveys, Radiation Monitoring and Disposal, to read as follows:

(b) Each licensee or registrant shall maintain records in the same units used in this section, showing the results of surveys required by 801.D.201, monitoring required by 801.D.207(b) and 801.D.207(c), and disposals made under 801.D.302, 801.D.303 and deleted 801.D.304 (which provided for burial of small quantities of radioactive material in soil; however, this section was deleted on August 13, 1981.

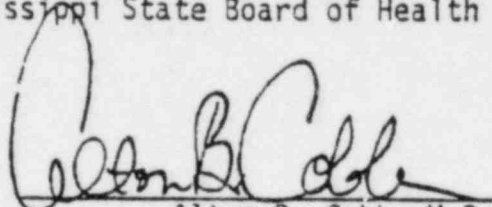
(c)(3) Records of disposal of licensed material made pursuant to 801.D.302, 801.D.303 or 801.D.304 shall be maintained until the Agency authorizes their disposition.

Amend Appendix B, SECTION D, to read as follows:

APPENDIX B

NOTE: For purposes of SECTION 801.D.303, where there is involved a combination of isotopes in known amounts, the limit for the combination should be derived as follows: Determine, for each isotope in the combination, the ratio between the quantity present in the combination and the limit otherwise established for the specific isotope when not in combination. The sum of such ratios for all the isotopes in the combination may not exceed "1" (i.e., "unity").

This is to certify that the above Amendments to the "Regulations for the Control of Radiation," were adopted by the Mississippi State Board of Health on July 8, 1981.

  
\_\_\_\_\_  
Alton B. Cobb, M.D.  
Executive Officer



APPENDIX G  
TELETHERAPY ROOM MONITOR  
REQUIREMENT



MISSISSIPPI  
STATE BOARD OF HEALTH

2423 NORTH STATE STREET, P. O. BOX 1700  
JACKSON, MISSISSIPPI 39205

ALTON B. COBE, M.D., M.P.H.  
STATE HEALTH OFFICER

June 23, 1980

MEMORANDUM

TO: ALL MISSISSIPPI TELETHERAPY LICENSEES AND LINEAR ACCELERATOR REGISTRANTS

FROM: EDDIE S. FUENTE, DIRECTOR, DIVISION OF RADIOLOGICAL HEALTH *ESF*

SUBJECT: TELETHERAPY AND/OR ACCELERATOR ROOM RADIATION MONITOR AND THE USE OF PORTABLE RADIATION SURVEY METER

The Division of Radiological Health, Mississippi State Board of Health, was recently made aware of a number of teletherapy equipment malfunctions which have included faulty shutter operation and improper indication of beam status. These types of malfunctions have the potential for causing excessive (even lethal) radiation exposures of both operating personnel and patients if not promptly detected and appropriately rectified. These malfunctions are being investigated and corrective action is being pursued with the teletherapy manufacturers and users involved.

The U. S. Nuclear Regulatory Commission notified all Agreement States of their Order to Modify all U. S. Nuclear Regulatory Commission teletherapy licenses and requested that, if such a requirement was not already in effect in Mississippi, all Mississippi teletherapy licensees take immediate steps to install a radiation monitor in each teletherapy room and, in the interim, require that any person entering the teletherapy room following an irradiation shall enter with an operable, calibrated radiation survey meter and determine the beam condition.

We have determined that a teletherapy room radiation monitor will provide the capability to promptly detect and alert teletherapy unit operators of situations where the source is not fully shielded so that appropriate emergency action can be taken to avoid excessive radiation exposure. The room radiation monitor is intended to provide the teletherapy operator with continuous information on beam status. These room radiation monitors would be an additional requirement to the required door interlock system.

Based on the foregoing, installation of a permanently mounted radiation monitor in each teletherapy and/or linear accelerator room is necessary and that the public health, safety and interest require that this modification be made immediately.

Each license that authorizes possession and use of licensed material for use in teletherapy equipment and each registration that authorizes the possession and use of a linear accelerator are hereby amended to add the following conditions:

- 1) As soon as possible, but no later than 90 days from the date of this memorandum, each teletherapy and/or accelerator room shall be equipped with a radiation monitoring device which continuously monitors beam condition and is equipped with a back-up battery power supply for emergency operation. This device shall energize a visible signal to make the operator continuously aware of beam condition in order that appropriate emergency procedures may be instituted to prevent unnecessary radiation exposure. Operating procedures shall be modified to require daily operational testing of the installed radiation monitor.
- 2) No later than 15 days from the date of this memorandum, until the room monitor required by Paragraph 1 is installed, and thereafter, whenever it is not operational, any person entering the teletherapy and/or accelerator room following an irradiation shall enter with an operable, calibrated radiation survey meter and shall determine the beam condition.

If you should have any questions or comments regarding this memorandum, please do not hesitate in contacting this Agency at (601)354-6657 or P. O. Box 1700, Jackson, Mississippi 39205.

/b

APPENDIX H  
LICENSE REVIEWS

## APPENDIX H

### REVIEW OF SELECTED LICENSE FILES

#### Summary and Conclusions

A review was conducted of 24 license files. The files were reviewed in general for significant errors, omissions, deficiencies in the licensing actions, properly completed applications, appropriate signatures, and to determine if the licenses were properly supported by information in the file.

Cover letters are utilized to transmit renewal notices and license documents. In general, the reviewer found that the licenses were properly supported by information in the files, contained appropriate licensing conditions for the type of license being issued, and the reviews covered pertinent points of acceptable radiation programs; however, in some cases, detailed information was lacking. Specifics are listed in the chart at the end of this Appendix. It was noted that Priority I and II licenses are renewed every year and Priority III and IV licenses are renewed every 3 and 4 years, respectively. Checklists are not routinely used by the reviewers. These topics were discussed in the report under licensing procedures. The license files should be arranged so that each license folder has a copy of the current license and amendments and the corresponding back-up materials filed together but separated from the general correspondence section and separated from the inspection reports/compliance section of the folder. Superseded license materials should be clearly identified and separated from current information in the license folder.

#### Licenses Reviewed

The following licenses were reviewed and for the purposes of this report, a numerical code was assigned to each license as follows:

1. Schlumberger Well Services  
A Division of Schlumberger Technology Corporation  
500 Gulf Freeway, P. O. Box 2175  
Houston, TX 77001  
  
License Number - MS-463-01, Amendment 2  
Issued - 12/15/80, Amendment 2 Issued 8/31/81  
Expires - 12/1/81  
License Type - Well Logging and Instrument Calibration

2. Mississippi State University  
P. O. Drawer NE  
Mississippi State, MS 29762

License Number - MS-EBL-02, Amendment 17  
Issued - 8/6/81  
Expires - 8/1/82  
License Type - Broad Academic

3. University of Mississippi  
Division of Nuclear Medicine  
2500 North State Street  
Jackson, MS 39216

License Number - MS-163-01, Amendment 45  
Issued - January 1981  
Expires - February 1982  
License Type - Medical - Groups I, II, and III

4. University of Mississippi  
University, MS 38677

License Number - MS-EBL-01, Amendment 17  
Issued - 5/25/81  
Expires - 1/1/82  
License Type - Broad Academic

5. Mississippi Baptist Medical Center  
Department of Radiology  
Division of Nuclear Medicine  
1225 N. State Street  
Jackson, MS 39201

License Number - MS-023-01, Amendment 38  
Issued - 6/15/81  
Expires - 1/1/82  
License Type - Medical - Groups I, II and III

6. Pittsburg Des Moines Corporation  
P. O. Drawer E  
401 Avenue West  
Birmingham, AL 35218

License Number - MS-287-01, Amendment 11  
Issued - 6/17/81  
Expires - 9/1/82  
License Type - Industrial Radiography at Temporary Job Sites



7. Marathon Le Tourneau Company  
Marine Division  
Le Tourneau Rural Station  
Vicksburg, MS 39180  
  
License Number - MS-167-01, Amendment 18  
Issued - 7/15/81  
Expires - 12/1/81  
License Type - Industrial Radiography - Fixed Locations
  
8. GEO Construction Testing  
1118 Chess Drive  
Foster City, CA 94404  
  
License Number - MS-262-01, Amendment 19  
Issued - 3/31/81  
Expires - 12/1/81  
License Type - Industrial Radiography - Temporary Locations
  
9. Isomedix Incorporated  
Industrial Park South  
P. O. Box 2044  
Columbia, MS 39701  
  
License Number - MS-353-01, Amendment 11  
Issued - 4/10/81  
Expires - 5/1/82  
License Type - Irradiator - Cobalt-60
  
10. Ingalls Shipbuilding Division  
Litton Systems, Inc.  
P. O. Box 149  
Pascagoula, MS 39567  
  
License Number - MS-019-01, Amendment 38  
Issued - 6/3/81  
Expires - 12/1/81  
License Type - Industrial
  
11. Chicago Bridge and Iron Company  
8900 Fairbanks North Houston Road  
P. O. Box 40066  
Houston, TX 77040  
  
License Number - MS-206-01, Amendment 19  
Issued - 11/18/80  
Expires - 12/1/81  
License Type - Industrial Radiography - Temporary Locations

12. Pittsburg Testing Laboratories  
P. O. Box 1646  
Pittsburg, PA 15230  
  
License Number - MS-155-01, Amendment 20  
Issued - 1/19/81  
Expires - 2/1/82  
License Type - Radiography - Temporary Locations
  
13. Mississippi Baptist Medical Center  
Department of Radiation Therapy  
1225 North State Street  
Jackson, MS 39202  
  
License Number - MS-023-02, Amendment 19  
Issued - 12/18/80  
Expires - 3/1/82  
License Type - Teletherapy
  
14. Radiology Associates of Oxford, PA  
2211 South Lamar  
Oxford, MS 38654  
  
License Number - MS-479-01  
Issued - 4/28/81  
Expires - 5/1/82  
License Type - Medical - Groups I, II, and III
  
15. Peabody Testing Service  
A Division of Magnaflux Corporation  
650 New York Street  
Memphis, TN 38114  
  
License Number - MS-082-01, Amendment 22  
Issued - 10/30/80  
Expires - 11/1/81  
License Type - Radiography - Temporary Job Sites
  
16. Daniel Construction Company  
Division of Daniel International Corporation  
Daniel Building - 17th Floor  
Greenville, SC 29602  
  
License Number - MS-453-01  
Issued - 10/13/80  
Expires - 10/1/81  
License Type - Radiography - Temporary Locations

17. Magee General Hospital  
300 S.E. Third Avenue  
Magee, MS 39111

License Number - MS-452-01  
Issued - 10/31/80  
Expires - 11/1/84  
License Type - Medical - Groups I, II, and III

18. Owensby and Kritikos, Inc.  
671-B Whitney Avenue  
P. O. Box 1482  
Gretna, LA 70053

License Number - MS-451-01  
Issued - 8/19/80  
Expires - 9/1/81  
License Type - Radiography - Temporary Locations

19. Doctors Hospital  
2969 University Drive  
Jackson, MS 39216

License Number - MS-404-01  
Issued - 5/12/78  
Expires - 5/1/82  
License Type - Medical - Groups I, II and III

20. Holmes County Community Hospital  
106 Westwood Avenue  
P. O. Box 641  
Lexington MS 39095

License Number - MS-469-01  
Issued - 5/6/81  
Expires - 5/1/82  
License Type - Medical - Groups I and II

21. Delta Nuclear Service  
339 Arnold Avenue  
P. O. Box 1857  
Greenville, MS 38701

License Number - MS-465-01  
Issued - 3/18/81  
Expires - 3/1/82  
License Type - Medical - Groups I, II, and III

22. Signal Testing, Inc.  
P. O. Box 255  
321 Wood Street  
West Monroe, LA 71291

License Number - MS-462-01  
Issued - 4/23/81  
Expires - 5/1/82  
License Type - Radiography - Temporary Locations

23. North Mississippi Medical Center  
830 South Gloster Street  
Tupelo, MS 38801

License Number - MS-378-01, Amendment 6  
Issued - 5/15/81  
Expires - 5/1/82  
License Type - Medical - Groups I, II, and III

24. Vester J. Thompson, Jr., Inc.  
3707 Cottage Hill Road  
Mobile, AL 36609

License Number - MS-484-01  
Issued - 6/2/81  
Expires - 7/1/82  
License Type - Radiography - Temporary Locations

#### Summary Table

|    | <u>Specific Comments</u>  | <u>License Code</u>           |
|----|---|-------------------------------|
| a. | License Condition (17) was referenced to improper regulation code section.                                  | 1,                            |
| b. | License, current amendments should be separated from the general correspondence and the inspection reports. | 4, 6, 7, 13, 16<br>17, 18, 22 |
| c. | More details needed on kinds of animals to be used.   | 3,                            |
| d. | More details needed on incineration.  | 4,                            |
| e. | More details needed on leak test procedures.  | 4,                            |
| f. | More details needed on bioassay procedures.   | 4,                            |
| g. | Amendment application/correspondence not filed.   | 13,                           |

| <u>Specific Comments</u><br>(Continued)  | <u>License Code</u> |
|--|---------------------|
| h. Therapy calibration and spot check measurements not required.   | 13,                 |
| i. More details needed for dose calibrator and QA tests performed (procedures).  | 14, 17, 19, 23      |
| j. Typographical errors (items 6.A vs. 7.A).   | 19, 21              |
| k. More details on how the instruments will be used to perform surveys.  | 19, 23              |
| l. License Condition (13.B) should designate "... transportation of precalibrated and assayed radiopharmaceuticals..." | 21,                 |
| m. Application procedures called for CDV-742 dosimeters to be used as dose calibrators.                                | 23,                 |

APPENDIX I  
INSPECTION FREQUENCY



## APPENDIX I

### INSPECTION FREQUENCY

| Initial                                | 12 months after issuance                                 | 12 months after issuance                     | 12 - 24 months after issuance                                   | 24 + 35 months after issuance |
|--|--|--|---|-------------------------------|
| Follow-up                              | 12 months  | 12 - 24 months                               | 24 - 36 months  | 3 - 5 years                   |
|  | PRIORITY I   | PRIORITY II                                  | PRIORITY III  | PRIORITY IV                   |
| 1. Broad Licenses                      | 1. Large Medical Licenses                                | 1. Small Medical Licenses                    | 1. Environment  |                               |
| a) Academic*                           | a) Nuclear Medicine                                      | a) Nuclear Medicine                          |   |                               |
| b) Industrial                          | Institutional  | Private Practice                             |   |                               |
| c) Medical                             |  | b) Institutional                             |   |                               |
| 2. Major Industrial Processors & Users | 2. Large Irradiators greater than 20,000 Curies          | 2. Academic License Large scale R & D        | 2. Industrial Guages except for G.L.'s                          |                               |
| 3. Industrial Radiography              | 3. Particle accelerators and in-place neutron generators | 3. Small irradiators less than 20,000 Curies | 3. Small academic licenses including analytical X-ray equipment |                               |
| 4. Commerical Waste Disposal           | 4. Well logging  | 4. Human Use Teletherapy Licenses            | 4. Medical licenses in-vitro programs not covered by G.L.       |                               |
|  |  | 5. Limited Industrial Licenses               | 5. Other Specific License                                       |                               |

\*Reinspection may be extended up to 24 months

APPENDIX J  
COMPLIANCE REVIEWS

## APPENDIX J

### REVIEW OF SELECTED COMPLIANCE FILES

#### Summary and Conclusions

The State uses a field inspection form similar to that used by the NRC. The form provides a guide for the inspector during the inspection and provides a combination type report consisting of checklists, fill in the blank type statements, and sufficient room for narrative discussions as needed. In general, the files were reviewed to determine if the inspections were complete and substantiated all items of noncompliance and recommendations. The files were reviewed to determine if appropriate enforcement actions were taken, written in appropriate regulatory language, timeliness of letters, and if adequate responses were received from the licensee to close out the enforcement actions.

In general, the quality of the inspection reports have improved over the years, especially since the utilization of the newer forms; however, in some cases, additional details and documentation is needed as outlined in the summary table that follows. The reviewer found it difficult to review the folders in some cases because the inspection reports and enforcement actions had not been kept separate from the license back-up materials and general correspondence.

Twenty-four license compliance files were selected for review; however, only 12 had received inspections since the last review. Some of the licenses were new and some were overdue for inspection. For purposes of this report, a numerical code (1 through 24) was assigned to the following compliance files.

#### Compliance Files Reviewed

1. Schlumberger Well Services  
A Division of Schlumberger Technology Corporation  
500 Gulf Freeway, P. O. Box 2175  
Houston, TX 77001  
  
License Number - MS-463-01, Amendment 2  
Issued - 12/15/80, Amendment 2 Issued 8/31/81  
Expires - 12/1/81  
License Type - Well Logging and Instrument Calibration
  
2. Mississippi State University  
P. O. Drawer NE  
Mississippi State, MS 39762  
  
License Number - MS-EBL 02, Amendment 17  
Issued - 8/6/81  
Expires - 8/1/82  
License Type - Broad Academic

3. University of Mississippi  
Division of Nuclear Medicine  
2500 North State Street  
Jackson, MS 39216

License Number - MS-163-01, Amendment 45  
Issued - January 1981  
Expires - February 1982  
License Type - Medical - Groups I, II, and III

4. University of Mississippi  
University, MS 38677

License Number - MS-EBL-01, Amendment 17  
Issued - 5/25/81  
Expires - 1/1/82  
License Type - Broad Academic

5. Mississippi Baptist Medical Center  
Department of Radiology  
Division of Nuclear Medicine  
1225 N. State Street  
Jackson, MS 39201

License Number - MS-023-01, Amendment 38  
Issued - 6/15/81  
Expires - 1/1/82  
License Type - Medical - Groups I, II and III

6. Pittsburg Des Moines Corporation  
P. O. Drawer E  
401 Avenue West  
Birmingham, AL 35218

License Number - MS-287-01, Amendment 11  
Issued - 6/17/81  
Expires - 9/1/82  
License Type - Industrial Radiography at Temporary Job Sites

7. Marathon Le Tourneau Company  
Marine Division  
Le Tourneau Rural Station  
Vicksburg, MS 39180

License Number - MS-167-01, Amendment 18  
Issued - 7/15/81  
Expires - 12/1/81  
License Type - Industrial Radiography - Fixed Locations

8. GEO Construction Testing  
1118 Chess Drive  
Foster City, CA 94404  
  
License Number - MS-262-01, Amendment 19  
Issued - 3/31/81  
Expires - 12/1/81  
License Type - Industrial Radiography - Temporary Locations
  
9. Isomedix Incorporated  
Industrial Park South  
P. O. Box 2044  
Columbia, MS 39701  
  
License Number - MS-353-01, Amendment 11  
Issued - 4/10/81  
Expires - 5/1/82  
License Type - Irradiator - Cobalt-60
  
10. Ingalls Shipbuilding Division  
Litton Systems, Inc.  
P. O. Box 149  
Pascagoula, MS 39567  
  
License Number - MS-019-01, Amendment 38  
Issued - 6/3/81  
Expires - 12/1/81  
License Type - Industrial
  
11. Chicago Bridge and Iron Company  
8900 Fairbanks North Houston Road  
P. O. Box 40066  
Houston, TX 77040  
  
License Number - MS-206-01, Amendment 19  
Issued - 11/18/80  
Expires - 12/1/81  
License Type - Industrial Radiography - Temporary Locations
  
12. Pittsburg Testing Laboratories  
P. O. Box 1646  
Pittsburg, PA 15230  
  
License Number - MS-155-01, Amendment 20  
Issued - 1/19/81  
Expires - 2/1/82  
License Type - Radiography - Temporary Locations

13. Mississippi Baptist Medical Center  
Department of Radiation Therapy  
1225 North State Street  
Jackson, MS 39202
- License Number - MS-023-02, Amendment 19  
Issued - 12/18/80  
Expires - 3/1/82  
License Type - Teletherapy
14. Radiology Associates of Oxford, PA  
2211 South Lamar  
Oxford, MS 38654
- License Number - MS-479-01  
Issued - 4/28/81  
Expires - 5/1/82  
License Type - Medical - Groups I, II, and III
15. Peabody Testing Service  
A Division of Magnaflux Corporation  
650 New York Street  
Memphis, TN 38114
- License Number - MS-082-01, Amendment 22  
Issued - 10/30/80  
Expires - 11/1/81  
License Type - Radiography - Temporary Job Sites
16. Daniel Construction Company  
Division of Daniel International Corporation  
Daniel Building - 17th Floor  
Greenville, SC 29602
- License Number - MS-453-01  
Issued - 10/13/80  
Expires - 10/1/81  
License Type - Radiography - Temporary Locations
17. Magee General Hospital  
300 S.E. Third Avenue  
Magee, MS 39111
- License Number - MS-452-01  
Issued - 10/31/80  
Expires - 11/1/84  
License Type - Medical - Groups I, II, and III



18. Owensby and Kritikos, Inc.  
671-B Whitney Avenue  
P. O. Box 1482  
Gretna, LA 70053
- License Number - MS-451-01  
Issued - 8/19/80  
Expires - 9/1/81  
License Type - Radiography - Temporary Locations
19. Doctors Hospital  
2969 University Drive  
Jackson, MS 39216
- License Number - MS-404-01  
Issued - 5/12/78  
Expires - 5/1/82  
License Type - Medical - Groups I, II and III
20. Holmes County Community Hospital  
106 Westwood Avenue  
P. O. Box 641  
Lexington MS 39095
- License Number - MS-469-01  
Issued - 5/6/81  
Expires - 5/1/82  
License Type - Medical - Groups I and II
21. Delta Nuclear Service  
339 Arnold Avenue  
P. O. Box 1857  
Greenville, MS 38701
- License Number - MS-465-01  
Issued - 3/18/81  
Expires - 3/1/82  
License Type - Medical - Groups I, II, and III
22. Signal Testing, Inc.  
P. O. Box 255  
321 Wood Street  
West Monroe, LA 71291
- License Number - MS-462-01  
Issued - 4/23/81  
Expires - 5/1/82  
License Type - Radiography - Temporary Locations

23. North Mississippi Medical Center  
830 South Gloster Street  
Tupelo, MS 38801

License Number - MS-378-01, Amendment 6  
Issued - 5/15/81  
Expires - 5/1/82  
License Type - Medical - Groups I, II, and III

24. Vester J. Thompson, Jr., Inc.  
3707 Cottage Hill Road  
Mobile, AL 36609

License Number - MS-484-01  
Issued - 6/2/81  
Expires - 7/1/82  
License Type - Radiography - Temporary Locations

#### Summary Table

The following table lists the specific compliance comments developed during the review for each of the numerically coded compliance files.

|    | <u>Specific Comments</u>  | <u>License Code</u> |
|----|---|---------------------|
| a. | Report needs more details on the scope of the program, instrumentation used, and disposal of materials. | 2, 4, 7             |
| b. | More documentation needed on discussions held with workers, management meetings and/or exit interviews. | 4, 7, 10, 18<br>19  |
| c. | More details were needed to document surveys performed by licensee.                                     | 2, 4, 10            |
| d. | More details needed on exposure records, scope and range of personnel monitoring program.               | 2, 4, 8, 10         |
| e. | No record of inspection in folder.  | 6,                  |
| f. | Inspection report should be signed by supervisor after his review.                                      | 7, 10, 22           |
| g. | More details needed to document licensee's organization   | 7,                  |
| h. | The office enforcement summary and inspection record was not up to date.                                | 9,                  |

| <u>Specific Comments</u><br>(Continued)  | <u>License Code</u>                                |
|--|--|
| i. More details needed to document independent measurements performed by the inspectors.                       | 10,  |
| j. These were good reports except where noted elsewhere in this table.   | 3, 22, 23  |
| k. The date of the inspection was not noted in the enforcement letter.   | 18,  |
| l. The report should reference the code sections of the noncompliance items.                                   | 18,  |
| m. The inspection reports and compliance letters should be separated from other documents in the file folders. | 4, 6,<br>-   |
| n. These licenses had not been inspected since the last review; therefore, could not be evaluated.             | 1, 5, 11, 12,<br>13, 14, 15, 16,<br>17, 20, 21, 24 |

APPENDIX K  
ENVIRONMENTAL SURVEILLANCE

ENVIRONMENTAL SURVEILLANCE

GRAND GULF NUCLEAR STATION

Sample type: River Water  
No. of Location: 3  
Frequency: Monthly  
Analysis Type: Gamma Isotopic,  $3^H$ ,  $Sr^{89}$  &  $90$

Sample type: Cistern Water  
No. of Locations: 5  
Frequency: Monthly  
Analysis type: Gamma Isotopic,  $3^H$

Sample type: Well Water  
No. of Locations: 5  
Frequency: Bi-Monthly  
Analysis Type: Gamma Isotopic,  $3^H$

Sample type: Milk (Dairy)  
No. of Locations: 1  
Frequency: Monthly  
Analysis type: Gamma Isotopic,  $Sr^{89}$  &  $90$

Sample type: River Sediment  
No. of Locations: 3  
Frequency: Semi-Annually  
Analysis type: Gamma Isotopic

Sample type: I-131, Moble Gas Charcoal Cartridge  
No. of Locations: 9  
Frequency: Semi-Monthly  
Analysis type: Gamma Isotopic (Iodine)

Sample type: Particulate Filter  
No. of Locations: 9  
Frequency: Semi-Monthly  
Analysis type: Beta/Gamma

Sample type: Fish & Vegetation  
No. of Locations: Varies  
Frequency: Semi-Annually  
Analysis type: Gamma Isotopic

Sample type: Game, Beef, Goat  
No. of Locations: Varies  
Frequency: Annually  
Analysis type: Gamma Isotopic

Sample type: Soil  
No. of Locations: 8  
Frequency: Semi-Annually  
Analysis type: Gamma Isotopic

Sample type: TLD (Direct Radiation)  
No. of Locations: 25  
Frequency: Quarterly  
Analysis type: Thermoluminescence

#### VATUM SALT DOME

Sample type: Water, Soil, Urine  
No. of Locations: 140  
Frequency: Annually  
Analysis type: Gamma Isotopic,  $^3\text{H}$

#### INGALL'S SHIPYARD

Sample type: Water, Sediment, Oyster, Crab, Shell  
No. of Locations: 39  
Frequency: Semi-Annually  
Analysis type: Gamma Isotopic

#### MISCELLANEOUS

Sample type: Air Filter (State Wide)  
No. of Locations: 6  
Frequency: Monthly  
Analysis type: Beta/Gamma

Sample type: Finished Milk (Local Dairies)  
No. of Locations: (1 composite of 6 - 8 dairies)  
Frequency: Monthly  
Analysis type: Gamma Isotopic,  $\text{Sr}^{89}$  &  $^{90}$

Sample type: Precipitation (State Board of Health roof)  
No. of Locations: 1  
Frequency: Varies  
Analysis type: Gamma Isotopic, Alpha-beta

Sample type: Public Drinking Water  
No. of Locations: 1016

Frequency: Once in four years Analysis type: Alpha-beta,  $\text{Ra}^{226}$  &  $^{228}$ ,  
Uranium  $^{235}$ ,  $^3\text{H}$