



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

APR 10 1985

PERFORMANCE APPRAISAL

NRC/STATE CONTRACTS FOR ENVIRONMENTAL MONITORING

CONTRACT NUMBER: 29-83-622

CONTRACTOR: State of Tennessee

DATE OF PERFORMANCE APPRAISAL: March 14-15, 1985

CONDUCTED BY: *S. S. Adamovitz*
S. S. Adamovitz, Radiation Specialist

April 3, 1985
Date Signed

REVIEWED BY: *D. M. Montgomery*
D. M. Montgomery, Chief
Independent Measurements and Environmental
Protection Section

April 4, 1985
Date Signed

SCOPE: The appraisal was performed by a review of reports, correspondence, day-to-day contacts, and evaluation of the promptness and judgement exercised in the resolution of any unusual situations or problems which arise in the program. The annual appraisal was culminated by a visit to the State laboratory to inspect facilities and equipment, review records, and discuss aspects of the program with State personnel. This report is prepared as a basis for contract renewal and any recommendations for program improvements.

STATE OF TENNESSEE CONTRACT APPRAISAL
AND REVIEW OF THE ANNUAL REPORT

On March 14 and 15, 1985, representatives of the U.S. Nuclear Regulatory Commission met with representatives from the State of Tennessee's Division of Radiological Health to review activities conducted under Contract No. 29-83-622 for 1983. This contract provides for a cooperative program for measuring concentrations of radioactivity and radiation levels in the environment around the following NRC licensed activities located within the State.

Nuclear Fuel Services, Inc.
Sequoyah Nuclear Power Plant
Watts Bar Nuclear Power Plant

Attendance at this meeting is presented in Enclosure 1.

OVERALL PROGRAM STATUS

This appraisal incorporated a review of the 1983 annual report, an inspection of the State Radiation Laboratory and a preliminary review of the State's performance under the 1984 contract. The State of Tennessee has adhered well to schedules in obtaining and analyzing samples and generally met contract requirements for sampling and analysis. Reporting requirements were also met, although the completed annual report was late due to the State's inability to obtain data from an NRC licensee in a timely manner. Specific problem areas are discussed in detail under Performance.

STAFF

The State of Tennessee's Radiological Environmental Section is located in the Division of Radiological Health. In 1984, the Environmental Section successfully recruited one individual to fill a vacancy and bring current staff to a total of two environmental specialists. Laboratory analyses are performed by the Environmental Laboratories' Radiochemistry Section. Personnel assigned to this section include two full-time chemists and one part-time chemist.

TRAINING

Training offered during 1984 for State employees at the Radiological Environmental Sciences Laboratory (RESL) in Idaho Falls, Idaho was attended by a chemist from the Environmental Laboratories. Additional training of the laboratory staff in radiochemical methods and nuclear instrumentation is needed to provide the level of expertise necessary to maintain a radiological laboratory. Present staff has gained knowledge through experience in the radioanalytical field. However, a course with emphasis in nuclear instrumentation would give them the necessary background in instrumentation and data handling.

FACILITIES AND EQUIPMENT

A new computer for sample tracking and data compilation was acquired in 1984. This new system simplified recordkeeping and the transmitting of analytical results. Although the present laboratory space is adequate to fulfill contract requirements, plans are now underway to move the Radiochemistry Laboratory in December 1985 to a newly renovated building. The laboratory would then have a separate area designated in the building. Laboratory equipment was upgraded in 1984 by the acquisition of a new liquid scintillation spectrometer. Further commitments to acquire new equipment are needed to replace outdated gamma spectroscopy system and alpha-beta proportional counter. The gamma spectroscopy system was inoperable for extended periods of time during the previous year and does not automatically reduce data in identifying and quantifying radionuclides. It should be noted that failure to replace existing equipment in the near future could adversely impact the ability of the laboratory to meet contractual requirements. Replacement of the present system would alleviate labor intensive data reduction and improve reliability of gamma spectral analyses. Future planning and budgets should provide for replacement of these two systems.

PERFORMANCE

The State of Tennessee is required by the Environmental Monitoring contract to submit an annual report within 120 days from the end of the calendar year. A summary of all State results was submitted in a timely manner but lacked TVA data. A subsequent report submitted June 15 (45 days late) contained the missing licensee data. Discussions with State personnel indicated that problems with transmittal of TVA data had been resolved for the 1984 report.

Various environmental samples, reported as duplicate collections, are required by the contract to be splits. These included milk, fish and food products for Sequoyah and Watts Bar, and surface waters and vegetation for NFS. State personnel indicated sample collection procedures would be checked to confirm split samples are being collected as required.

Environmental analyses were missing for ground and surface water samples from NFS. Ground water data has been provided for CY 1984 and State personnel will report missing CY 1983 data in a later summary. Isotopic uranium and thorium analyses were missing from surface water samples due to samples not being sent to RESL. State personnel stated that individuals responsible for providing samples to RESL would be provided with a list of NRC required analyses.

The State's air particulate samples were composited over different time periods than the licensee's. State personnel stated that individuals responsible for compositing the air samples would be made aware of the licensee's schedule so that reporting periods would coincide.

The 1983 Environmental Report showed some wide variations between State and licensee gross alpha-beta results for NFS sewer samples. However, State analytical and counting procedures improved in 1984 as indicated by the State, NFS, and RESL triple split results. Comparison of analytical results among the three showed only slight variations.

The Radiochemistry Laboratory participates in the EPA Quality Assurance Program. A review of the quality control data for 1983 and 1984 indicated that an increasing variety of samples are being analyzed with good producibility and accuracy.

The State of Tennessee's Radiological Environmental Program was reviewed against the criteria established by the NRC. As discussed above, several problem areas were identified in the 1983 report. However, based on program improvements initiated in 1984 and a continued effort to meet all contractual requirements, continuation of this contract program is recommended.

ENCLOSURE

Attendance at the NRC-State of Tennessee meeting on March 14 and 15, 1985.

State of Tennessee

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Dr. Tom Maxson, Director, Environmental Laboratories
Roger L. Halsey, Supervisor, Environmental Monitoring
Elizabeth Steter, Environmental Specialist, Environmental Monitoring
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U.S. Nuclear Regulatory Commission - Region II

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