

NRC INSPECTION MANUAL PRPB

MANUAL CHAPTER 1415

STATE CONTRACTS PROGRAM FOR ENVIRONMENTAL MONITORING

1415-01 PURPOSE

To establish policy and procedures for contracts with States to independently monitor the environs of NRC-licensed facilities.

1415-02 OBJECTIVES

02.01 To assign responsibilities for administering the State contract program.

02.02 To establish criteria for evaluating the capability and performance of States and a basis for initiating and renewing contractual arrangements.

02.03 To provide procedures and guidance for appraisals, appraisal reports, and other administrative and programmatic requirements.

1415-03 DEFINITIONS

03.01 Appraisal. Three types are defined:

a. Acceptance appraisal. A systematic preagreement review to determine the ability of a State to provide services of the quality necessary for the program.

b. Performance appraisal. A systematic review of the quality of programmatic or administrative performance of States in providing contracts.

c. Followup appraisal. A review conducted when necessary to check the actions taken on recommendations of previous appraisals, or to obtain resolution of identified problems or deficiencies.

03.02 Contract. A written understanding between NRC and a State under which the State performs a service and is reimbursed from NRC funds.

The Regional Offices and the Office of Nuclear Reactor Regulation (NRR) are responsible for negotiating the funding and technical terms of the contract and for monitoring and certifying contract performance. The Office of Administration is responsible for officially consummating the contract and for making payment to the States.

03.03 Criteria. Standards against which ability to perform a task can be measured. Although criteria are most effective when expressed quantitatively, in some cases they must be expressed qualitatively.

1415-04 POLICY

04.01 Regional Offices and the Office of Nuclear Reactor Regulation (NRR) shall collaborate with the States in conducting independent environmental measurements to evaluate the quality of licensees' environmental radioactivity and radiation measurements.

04.02 States having major licensed facilities shall be encouraged to participate in the program and, subject to budget limitations, goals, and objectives, shall be accepted into the program upon meeting the criteria given in this chapter.

04.03 Formal reports shall be written for acceptance and performance appraisals of contracts. The reports shall be used as the basis for initiating and renewing contracts.

04.04 Results of this program will be used in evaluating licensee performance.

1415-05 RESPONSIBILITIES

05.01 Office of Nuclear Reactor Regulation (Division of Radiation Protection and Emergency Preparedness)

- a. Develops the general program. Identifies the program objectives, technical scope, procedures, and appraisal program.
- b. Provides technical support to the Regions in administrating the program.
- c. Assesses Regional implementation of the State contract program.

05.02 Regional Offices

- a. Identify candidate States and conduct initial discussions regarding contracts.

b. Perform acceptance appraisals of the States, and negotiate agreements, funding, and technical requirements of contracts.

c. Recommend renewal or modification of contracts.

d. Obtain specific technical information related to licensee environmental monitoring programs.

e. Send a letter of notification to each licensee affected by a State contract.

f. Meet with representatives of States and licensees, as necessary, to plan, implement, and monitor the program.

g. For contract programs, schedule and conduct a triennial appraisal to determine the adequacy of each State's performance and its conformance with contract requirements. Prepare a formal report of the appraisal. Identify program deficiencies and negotiate necessary changes to program, contracts, and renewals.

h. Communicate with States by telephone quarterly or as necessary to ensure that work is being performed on schedule.

i. Review annual data obtained from States for use during inspections of licensee radiological monitoring programs.

05.03 Participating States. Specific requirements are stated in the contracts. The following is a summary of general requirements.

a. Provide facilities and personnel to perform work described in the contract.

b. Arrange for collection of samples in the environs of specified facilities. Obtain assistance, as required, of State or local agencies or private firms for services and access to property.

c. Notify the Regional Office of any unusual conditions observed in carrying out the program at licensed facilities.

d. Provide the Regional Office with reports of data and information at intervals specified by the contract.

1415-06 BASIC REQUIREMENTS

Regional Offices and the Office of Nuclear Reactor Regulation shall conduct an environmental monitoring program as described in this Manual Chapter and in the Appendix to MC 1415.

END

Appendix

A. Guidance and Requirements for State Contracts Program for Environmental Monitoring

APPENDIX A

GUIDANCE AND REQUIREMENTS FOR STATE CONTRACTS

PROGRAM FOR ENVIRONMENTAL MONITORING

A. INTRODUCTION

The NRC administers contracts whereby States provide assistance by collecting samples or making radioactivity measurements in the environs of NRC-licensed facilities. These measurements duplicate, as closely as possible, certain parts of the licensee's environmental monitoring efforts, but they are made independently of licensee programs. The results of the State's monitoring are used to check the accuracy of licensee monitoring programs and aid in verifying the ability of the licensee to measure radioactivity in environmental media.

B. PURPOSE

This appendix provides guidance and requirements for administering the NRC-State contracts program. Guides are included (Attachments 1 and 4) for evaluating a State laboratory for the purpose of entering into a contractual arrangement and thereafter appraising its performance. These evaluations, called "acceptance appraisals" and "performance appraisals," provide a basis for initiating and renewing contracts with the States. Applicable sections of the Basic Requirements also serve as guidelines for initiating the contractual arrangement with the States.

C. BASIC REQUIREMENTS

1. In effect, under this program the States act as agents of NRC by providing manpower, equipment, and analytical services to conduct an independent environmental monitoring program. The States do not directly inspect licensees. Any activities not covered by a contract or agreement must be done under State authority.
2. The States are paid to perform a service for NRC. Their performance must be assessed both individually and collectively.

3. Regional Offices should use the list of responsibilities under Section 05.02, IMC 1415, to establish plans for working with individual States. Additional requirements may result from the nature of individual contracts.

4. In functioning as the primary NRC contact with the States, Regional Offices should establish, for the States, any other rules or requirements necessary for the Region to efficiently monitor the work. These rules and requirements need not be written, but they should be discussed in the initial meeting with the State when a contract is implemented. They should also be reviewed with the State periodically, such as during the triennial performance appraisal of contracts.

5. Regional Offices provide overall management and coordination of the State contracts. They are the principal contact with the States, providing administrative and technical coordination and conducting the triennial performance appraisals of contracts. The following is a general discussion of the sequence of events and procedural steps for the program.

a. Initiating a contract. The Region identifies candidate States, initiates discussions regarding contracts and negotiates with the States to establish contract requirements, funding, or other arrangements related to the monitoring program to be conducted. These actions are coordinated, as necessary, with NRR and with the Offices of the General Counsel, Governmental and Public Affairs, and Administration. The Region conducts the acceptance appraisal of the State as described in Attachment 1.

The Regional Office arranges a separate meeting with the State to discuss implementation of the contract if the Regional Office decides a meeting is necessary. Attachment 2 contains an example of a meeting agenda.

After a contract is signed both the NRC and State, the Regional Office sends a letter of notification to each licensee affected by the contract. Attachment 3 is a sample format for the letter.

The Regional Office arranges a meeting with each licensee to implement the program at the site. This meeting should include licensee, State, and Regional Office representatives. The items in the example meeting agenda of Attachment 2 are also used for this meeting.

b. Monitoring performance under a contract. The Regional Office maintains an awareness of program operations by periodic telephone calls to the States, the frequency depending upon the State's performance. The State's reporting requirements in the contract include an annual report and a quarterly summary of NRC funds expended and a description of services rendered. In order to sign vouchers for work performed and to ensure that the State is conducting an ongoing program, the Regional Office should periodically contact the State official responsible for the program to encourage the State to identify problems and to provide assistance needed in conducting the monitoring program. Regional Offices schedule and conduct an appraisal of each State once during the contract cycle (three years) to determine the adequacy of their performance under the contract and prepare a report of the appraisal. Attachment 4 contains guidance for the performance appraisal. Program reviews of States having a contract with the NRC may be done concurrently.

Regional Offices continually evaluate program and contract requirements in order to recommend improvements in the program and to identify changes needed in individual contracts.

NRR reviews and evaluates Regional Office recommendations and reports of State performance.

Regional Offices maintain contact with the States, and the Radiological and Environmental Sciences Laboratory (Idaho Falls, Idaho) (RESL) on the collection and analysis of environmental samples.

6. Appraisals are used in deciding whether to initiate or renew a contract with a State. Therefore, a written report is required for each acceptance and performance appraisal. Appraisal reports must include sufficient information regarding the program to support the decision by management. The reports shall contain a discussion and conclusions for each of the program elements located below, using the evaluation guides in Attachments 1 and 4.

a. Management support. Extent to which the program is being (or apparently will be) supported by management within the State. Some indications of management support will include the allocation of funds or budget and the number of experienced personnel.

b. Policies and standards. Extent to which, and how adequately, the State's policies and standards

relating to environmental monitoring are written, published, and carried out.

c. Organization. Structure and effectiveness of the organization for ensuring a comprehensive, continuous program. Delegation of authority and responsibility to various organizational elements. The effectiveness of liaison, coordination, and communications between State organizations and with the NRC.

d. Staff. Adequacy of numbers and technical skill of the staff assigned to carry out the program.

e. Training. Extent and adequacy of training and education in areas related to the program. Promotion policy may be considered here or under management support.

f. Communications. Extent to which experience and accumulated knowledge gained from the program are disseminated within the State organization and to the NRC.

g. Quality assurance. Frequency, adequacy, and records of internal audit or inspection of the program to ensure quality and accuracy in sampling, measurements, data, and reports.

h. Facilities and equipment. Adequacy of the physical space and laboratory furniture; the type, number, and age or model of analytical and measuring instruments; and other laboratory hardware.

i. Performance. For the acceptance appraisal, past experience in environmental monitoring and comparison of State program results with related general experience of the NRC. (The general rule is that the State's program should be as good as or better than the best of the licensee programs.) For the performance appraisal, meeting the requirements of the contract. Review of the technical judgment exercised in conducting the program and the overall support provided to the program within the State.

j. Summary and recommendations. Summary, conclusions, or impressions of the overall program, including highlights of significant achievements or deficiencies or irregularities in contract implementation. Concluding recommendation(s) regarding acceptance into the contract program or renewal of the contract, including items or areas to be corrected or upgraded before action is taken on the contract.

7. Conclusions and recommendations included in appraisal reports shall be based on facts and findings clearly stated in the report.

8. A copy of the triennial appraisal report prepared by the Regional Office shall be furnished to the contract State.

9. Distribution of appraisal reports should be restricted to those having a responsible interest in them; normally NRR, Regional Offices, ADM/Division of Contracts and Property Management, and DOE's Radiological and Environmental Sciences Laboratory.

10. The determined quality of the State's overall performance or its acceptability for entrance into the program shall always be made known to the State. If the appraisal:

a. identifies significant deficiencies, it should serve as a basis for candid discussions with the State on remedial actions;

b. shows that performance generally has been good but there are areas where minor improvements are needed, the transmittal to the State should ask for comments regarding the needed improvements; and

c. shows that performance generally has been good and there are no recommendations for improvements, the transmittal to the State should so indicate.

11. Where actions are recommended to correct deficiencies or to make program improvements, the adequacy of the corrective action shall be determined and reported during or before the succeeding appraisal.

END

ATTACHMENT 1

ACCEPTANCE EVALUATION FOR CONTRACTS

The indicators and guidance in this part are used by the Nuclear Regulatory Commission to evaluate a State's capability for conducting an environmental monitoring program. The evaluation is performed by the NRC at the request of the State for the purpose of accepting the State in the NRC-State contracts program.

| <u>Indicators</u> | <u>Guide for acceptability</u> |
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| Organization | <p>The organizational lines of authority should be such that the State contracting officer has direct control over the analytical laboratory and field personnel, or formal arrangements made which allow the State contracting officer to request work performed under the contract to be carried out in a timely manner.</p> <p>Contract work should not be relegated a priority that it would be set aside until the laboratory completes what it considers its main task; the contract work should become part of the main task.</p> |

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| Current budget | The NRC-State collaborative program is not intended to provide full cost recovery to the State. Adequate funds must be available in the State's budget to support any increased activities resulting from a contract. State funds should at least be equal to the expected contract funds. |
| Proposed budget | Continuing financial support of the contract activities should be maintained. Where the current budget is not adequate to support a contract program, the proposed budget should include an adequate amount of funds for the purpose. The contract should be delayed until the proposed funding is authorized. |
| Experience in environmental surveillance | <p>The State laboratory shall have demonstrated proficiency in conducting an environmental radiological surveillance program, including sample collection and analysis, and experience in publishing periodic reports and papers covering the results of the program. The scope of such experience should be considerably greater than the program to be conducted under the expected contract.</p> <p>Laboratory personnel who will perform contract work should have experience in conventional chemistry, radiochemistry, and radiation measurements, particularly gamma analysis.</p> |

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| <p>Number of laboratory and field personnel</p> | <p>Sufficient personnel so that activities added to contract work will not degrade laboratory efficiency; for example, so a chemist will not be required to become a sample collector.</p> <p>The laboratory should have at least one person working full time on radiation counting, radiochemistry, or other closely related procedures.</p> <p>It is satisfactory to have environmental samples collected by a local individual, provided that individual receives the necessary training.</p> |
| <p>Qualifications</p> | <p>The responsible person shall have a minimum of five years' experience in chemistry, of which at least one year shall be in radiochemistry. A minimum of two years of this five years' experience should be in related technical training. A maximum of four years of this five years' experience may be fulfilled by related technical or academic training.</p> |
| <p>Supervision</p> | <p>If the individual performing the radiochemistry or radiation counting has limited training in those fields, the supervisor should provide day-to-day supervision of the laboratory, and his office should be physically located close to the laboratory.</p> |
| <p>Workload</p> | <p>The laboratory should be conducting a program extensive enough to permit the staff to maintain its technical skills.</p> <p>Work schedules should be flexible enough and not over-extended so that samples that contain short-lived radionuclides can be analyzed within an appropriate time after receipt in the laboratory.</p> |

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| <p>Technical training</p> | <p>A specific program should be established for on-the-job training of new employees.</p> <p>Personnel should be encouraged to attend specific short courses and workshops to maintain an appropriate level of technical competence.</p> <p>Five to ten percent of the total effort should be spent in training, including on-the-job training.</p> |
| <p>Internal audits</p> | <p>There should be an established program to ensure timely completion of work, accuracy in monitoring data and reports, and correction of identified deficiencies.</p> |
| <p>Quality control for measurements</p> | <p>A program should be established whereby the analytical results can be checked.</p> <p>The laboratory should be participating in cross-check programs of other agencies, particularly the Environmental Protection Agency's Quality Assurance Program (the Interlaboratory Comparison Program).</p> |
| <p>Facilities and equipment: Wet chemistry</p> | <p>The laboratory should have the physical facilities, chemical reagents, and normal hardware and glassware necessary to perform chemical separations for analyses required by the expected contract.</p> |
| <p>· bench space</p> | <p>Adequate space that more than one procedure can be carried on at one time. A minimum of 100 square feet of clear bench space should be available and in close proximity to sinks, hoods, etc.</p> |
| <p>· chemicals and glassware</p> | <p>An adequate supply of suitable chemicals and glassware, and sufficient funds to purchase the necessary expendable items during the budget year.</p> |

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| <ul style="list-style-type: none"> • hoods | <p>A properly working hood of appropriate size and construction, with supporting systems of gas, water, vacuum, etc., and ventilated with filtered exhaust.</p> |
| <p>Radiation measuring instrumentation</p> | <p>The laboratory should have reasonably modern radiation- measuring instruments in working condition capable of making the various types of radiation measurements required by the program.</p> |
| <ul style="list-style-type: none"> • gamma | <p>A multichannel gamma spectrometry system which has as a minimum:</p> <ul style="list-style-type: none"> • a high resolution Ge(Li) or intrinsic germanium detector system with a resolution of at least 2.5 keV for the 1333 keV photopeak of Co-60. • a multichannel analyzer which can sort an energy spectrum into at least 2048 channels. |
| <ul style="list-style-type: none"> • beta | <p>A modern low-background proportional beta counting system of reasonably high efficiency which can effectively discriminate against alpha radiation and has a background count rate of less than 2 cpm.</p> |
| <ul style="list-style-type: none"> • low energy beta | <p>A modern liquid scintillation system should be available to measure tritium concentrations. It is acceptable to have an arrangement or contract with a reputable laboratory for measuring tritium.</p> |
| <ul style="list-style-type: none"> • alpha | <p>A proportional system which can count alpha radiation with a background count of less than 1 cpm.</p> |
| <p>Calibration standards</p> | <p>The laboratory should possess a sufficient number of well characterized standards to assure the accuracy of day-to-day measurements and to calibrate the measuring instruments when required.</p> |

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| Field equipment | <p>A sufficient number of good quality high- or low-volume air samplers, including one or more spares, to meet the requirements of the expected sampling program(s).</p> <p>Capability to maintain the air samplers and thermoluminescent dosimeters at the site locations at the required frequency, either by laboratory personnel or by arrangement with another agency or a local individual.</p> <p>Other field equipment necessary to obtain environmental samples required by the expected contract, or the capability to obtain the necessary equipment, i.e., iodine cartridge holder, etc.</p> |
| Procedures manual | Detailed written procedures should be prepared and available for the sampling, analysis, and reporting aspects of the monitoring program. |

ATTACHMENT 2

MEETING AGENDA

1. Purpose of the meeting
 - a. Explanation of the program
 - b. Face-to-face meeting of individuals involved

- c. Answer questions regarding intent of contract provisions
- d. Gain agreement, if necessary, for locations of sampling sites and schedules
- e. Tour of facility
- f. Split samples, if appropriate

2. State contract program

- a. Independent verification
- b. Traceability to National Institute of Science and Technology
- c. Relationship to overall NRC inspection program
- d. Role of State
- e. Role of NRC Regional Office
- f. Role of NRC Reference Laboratory (RESL)

3. Environmental monitoring

- a. Types of media; sampling frequency; analyses
- b. Site selection
- c. Sample collection arrangements
- d. Interlaboratory comparisons

• NRC Reference Laboratory

• Environmental Protection Agency's Quality Assurance Program (the Interlaboratory Comparison Program)

4. Reporting of results

- a. Manner of reporting
- b. Special arrangements for State, if necessary
- c. Report date

• Licensee

• State

5. Criteria for evaluating results

6. Resolving discrepancies

7. Tour of facility or site

- a. Laboratory
- b. Sampling points or locations

8. Split samples (optional)

ATTACHMENT 3

LETTER OF NOTIFICATION TO LICENSEES

* * * Regional Letterhead * * *

Licensee's name and address

Gentlemen:

The State of () and the Nuclear Regulatory Commission have signed a contract for a cooperative program of environmental monitoring of NRC-licensed facilities in (State). This monitoring program is an extension of the independent measurements aspects of our routine inspections and is undertaken pursuant to the Atomic Energy Act and Title 10 Code of Federal Regulations (specifically Parts 30.53, 40.63, 50.70, and 70.56). Initially, monitoring programs will be undertaken around your (name and location of specific facilities). The monitoring program will include such activities as periodically collecting and analyzing environmental samples, measuring environmental radiation levels, and comparing results with certain of your measurements which the program may duplicate.

The purpose of the contract is to establish a collaborative monitoring program between (State) and the NRC to provide independent measurements of radioactivity in the environment around selected NRC-licensed activities and to achieve and maintain comparable methods of analyses among licensees, States and the NRC.

The State and the NRC will share data and information obtained in the programs at the individual sites. In addition to distributing the information to other interested Federal, State, or local agencies, the NRC and (State) will collaborate in making the program findings publicly available through appropriate publications.

We will contact you or your site representative to arrange a meeting to discuss the implementation of the monitoring program to be conducted at your facility.

No response to this letter is requested; however, should you have any questions concerning the program prior to the meeting, we will be glad to discuss them with you or your representative. Mr./Ms. (Regional Representative) may be contacted for specific information on the program.

Sincerely,

(Regional Representative)

ATTACHMENT 4

PERFORMANCE APPRAISAL GUIDE FOR CONTRACTS

The guidance in this part is used by the Nuclear Regulatory Commission to evaluate a State's performance under an environmental monitoring contract. In general practice, the performance appraisal is conducted on a continuing basis. The major part of the appraisal is performed by the review of reports and correspondence and notes on day-to-day contacts, and evaluation of the promptness and judgment exercised in the resolution of any unusual situations or problems which arise in conduct of the program. The triennial performance appraisal culminates in a visit to the State laboratory to inspect facilities and equipment, review records, and discuss certain aspects of the program with State personnel. A report is prepared as a basis for contract renewals

and any recommendations for program improvements.

Introduction

Performance appraisal includes evaluation of both programmatic and administrative performance and achievement of related objectives. Program performance includes the quality of the end results (analytical results and data, and written reports) and the effectiveness and efficiency with which technical effort (people, equipment, etc.) is expended in pursuit of the end objective.

The measure of program performance is subject to less precision in some areas than in others. Periodic status and progress reports and adherence to schedules, as well as the quality, quantity, and adequacy and timeliness of reports are important in the evaluation of performance. The reputation and acceptance of work within the technical community and the publication of information in professional journals and other technical literature (outside of reports required by the contract) are of some, but lesser, importance.

Source of Data

Appraisals are based on sources of information such as routine and special reports, technical publications, conferences with key personnel, day-to-day contact with operations, results of inquiry into unusual or problem situations, audits of records and data, and inspection visits. Typical factors for appraisal are listed in "Typical Appraisal Factors," which follows.

Obtaining Data

Typical steps in obtaining performance data are:

- determine the types of information required for each of the areas to be appraised;

- gather and retain or identify pertinent information on a continuing basis such as: reports, records, correspondence, notes on day-to-day contacts and problem solving and visits; and
- develop additional data by requesting specific information, obtaining judgments and suggestions from knowledgeable third parties, and conducting inspections and interviews when there is a clear need.

Typical Appraisal Factors

The factors in the following table may apply to either programmatic or administrative activities. It is not anticipated that a detailed review of all factors or all aspects of each activity will be required to produce sufficient information on which to base an appraisal.

Factors Guidance

Overall program Maintenance of program elements and activities at a level at

status least equal to that when accepted into the contract program; the factors in the acceptance appraisal and previous performance appraisal reports are used as criteria.

Improvements Improvements in facilities, equipment, and procedures, etc.

Organization Adequacy of internal control and audit systems; experience and and results.

procedures

Staff Training afforded or conducted for the technical staff.

Apparent effectiveness of personnel policies in attracting and retaining qualified technical staff.

Performance Adherence to schedules and requirements of the contract.

Promptness and quality of the technical reports required by the contract.

Responsiveness to any NRC special requests and needs.

Promptness and judgment in resolution of unusual situations and problems arising during the conduct of the contract program.

Performance in the Environmental Protection Agency's Quality Assurance Program (i.e., the Interlaboratory Comparison Program).

END

