

1. CONTRACT (Proc. Inst. Ident.) NO. **NRC-05-80-267**

2. EFFECTIVE DATE **1/1/80**

3. REQUISITION/PURCHASE REQUEST PROJECT NO.

4. CERTIFIED FOR NATIONAL DEFENSE UNDER DDSA REG. 2 AND/OR DMS REG. 1. RATING

5. ISSUED BY **U. S. Nuclear Regulatory Commission  
Division of Contracts  
Washington, D.C. 20555**

6. ADMINISTERED BY (If other than block 5)

7. DELIVERY FOR DESTINATION  OTHER (See below)

8. CONTRACTOR NAME AND ADDRESS **State of Colorado  
Department of Health  
4210 East 11th Avenue  
Denver, CO 80220**

9. DISCOUNT FOR PROMPT PAYMENT **Net**

10. SUBMIT INVOICES (4 copies unless otherwise specified) TO ADDRESS SHOWN IN BLOCK 12

11. SHIP TO/MARK FOR **U. S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
ATTN: Lawrence K. Cohen  
Washington, D.C. 20555**

12. PAYMENT WILL BE MADE BY **U. S. Nuclear Regulatory Commission  
Office of the Controller  
ATTN: Director, Division of Accounting  
Washington, D.C. 20555**

13. THIS PROCUREMENT WAS  ADVERTISED,  NEGOTIATED, PURSUANT TO:  10 U.S.C. 2304 (a)(1)  41 U.S.C. 252 (c)(10)

14. ACCOUNTING AND APPROPRIATION DATA **31X0200.300 B&R No. 30-19-04-03 Fin. No. B5104**

**\$6,445.00 is covered by this appropriation**

15. ITEM NO.	16. SUPPLIES/SERVICES	17. QUANTITY	18. UNIT	19. UNIT PRICE	20. AMOUNT
	COOPERATIVE AGREEMENT: ENVIRONMENTAL MONITORING PROGRAM WITH THE STATE OF COLORADO				

POOR ORIGINAL

TOTAL AMOUNT OF CONTRACT \$ 27,100.00

CONTRACTING OFFICER WILL COMPLETE BLOCK 22 OR 26 AS APPLICABLE

2.  CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return 4 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents: (a) this award/contract, (b) the solicitation, if any, and (c) such provisions, representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)

26.  A. S. (Contractor is not required to sign this document.) Your offer on Solicitation No. \_\_\_\_\_, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents: (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.

27. UNITED STATES OF AMERICA  
BY **Kellogg V. Morton** (Signature of Contracting Officer)

28. NAME OF CONTRACTING OFFICER (Type or print) **Kellogg V. Morton**

29. DATE SIGNED **5-16-80**

NAME OF CONTRACTOR **Frank Taylor** (Signature of person authorized to sign)

23. DATE SIGNED **5/9/80**

NAME AND TITLE OF SIGNER (Type or print) **Frank A. Traylor  
Executive Director**

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COOPERATIVE AGREEMENT  
NRC-05-80-267

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## ARTICLE I - DEFINITIONS

- A. The term "Commission" means the United States Nuclear Regulatory Commission or any duly authorized representative thereof, including the Contracting Officer, except for the purpose of deciding an appeal under the article entitled "Disputes."
- B. The term "Contracting Officer" means the person executing this cooperative agreement on behalf of the Government and includes his successors or any duly authorized representative of any such person.
- C. The term "Contractor" means the State entering into this cooperative agreement.

## ARTICLE II - SCOPE OF WORK

The State and the Commission shall engage in a cooperative agreement for measuring concentrations of radioactivity and radiation levels in the environment of Commission-licensed activities in sites selected by the Commission. The principal objectives of the program are to 1) provide reasonable assurance that environmental measurements made by the licensee under Commission requirements are valid, and 2) to independently monitor direct radiation levels in the environs of nuclear facilities.

The full scope of this cooperative agreement is set forth in Attachment A, STATEMENT OF WORK, which is attached hereto and by this reference made a part hereof.

## ARTICLE III - PERIOD OF PERFORMANCE

- A. The period of performance hereunder shall commence on January 1, 1980, and shall continue through December 31, 1982, unless sooner terminated or extended, as hereinafter provided.
- B. The State and the Commission, by mutual agreement, may extend the period of performance through the execution of supplemental agreements to this cooperative agreement.
- C. Either party may terminate this cooperative agreement, in whole or in part, upon sixty (60) days written notice to the other party. If this cooperative agreement is so terminated, the Commission shall be liable only for payment in accordance with the consideration and payment provisions of this cooperative agreement for services rendered prior to the effective date of termination.

## ARTICLE IV - DIVISION OF RESPONSIBILITY

In the performance of work under this cooperative agreement, the division of responsibility shall be as follows:

- A. At the request of the Commission, the State will conduct off-site activities which shall consist of collecting environmental media samples, analyzing samples and exchanging dosimeters for measuring radiation levels, as specified in Attachment A.

- B. The Commission will participate with the State in developing schedules, sample and data collection procedures, analytical methods and other aspects of the program. The parties may split samples for separate analyses.
- C. The State will prepare and submit to the Commission reports in a format and time sequence as specified in Attachment A.

#### ARTICLE V - CONSIDERATION AND PAYMENT

##### A. Consideration

1. The Commission will provide funds, subject to the availability of appropriation, to the State in the amount of \$27,100.00 during the three (3) year period of performance. The rate of payment to the State will be as follows:
  - CY 1980 - \$7,200.00 per site, per year/environmental media program
  - CY 1980 - \$1,000.00 per site, per year/TLD program
  - CY 1981 - \$7,900.00 per site, per year/environmental media program
  - CY 1981 - \$1,100.00 per site, per year/TLD program
  - CY 1982 - \$8,700.00 per site, per year/environmental media program
  - CY 1982 - \$1,200.00 per site, per year/TLD program
2. The State will contribute, as a minimum, an amount or in kind services equal to the Commission's contribution in 1. above.
3. The amount presently obligated by the Commission with respect to this cooperative agreement for the CY 1980 effort is \$6,445.00.

##### B. Payment

1. The Commission shall render payment to the State in approximately thirty (30) days after submission of proper and correct quarterly vouchers.
2. The State should address the original voucher with four copies to:

U. S. Nuclear Regulatory Commission  
Office of the Controller  
ATTN: Director, Division of Accounting  
Washington, D.C. 20555

#### ARTICLE VI - DISPUTES

- A. Except as otherwise provided in this cooperative agreement, any dispute concerning a question of fact arising under this cooperative agreement which is not disposed of by mutual agreement shall be decided by the

Contracting Officer, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to the State. The decision of the Contracting Officer shall be final and conclusive unless within 30 days from the date of receipt of such copy, the State mails or otherwise furnishes to the Contracting Officer a written appeal addressed to the Commission. The decision of the Commission or its duly authorized representative for the determination of such appeals shall be final and conclusive unless determined by a court of competent jurisdiction to have been fraudulent, or capricious, or arbitrary, or so grossly erroneous as necessarily to imply bad faith, or not supported by substantial evidence. In connection with any appeal proceeding under this clause, the State shall be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the State shall proceed diligently with the performance of the cooperative agreement and in accordance with the Contracting Officer's decision.

- B. This "Disputes" clause does not preclude consideration of law questions in connection with decisions provided for in paragraph A. above: Provided, That nothing in this cooperative agreement shall be construed as making final the decision of any administrative official, representative, or board on a question of law.

#### ARTICLE VII - AVAILABILITY OF DATA

Any and all data collected, pursuant to this cooperative agreement by either party alone or jointly, shall be available in full to the other party. All data collected by the State, pursuant to this cooperative agreement, shall be sent to the NRC Office of Inspection and Enforcement, Region IV Office, 611 Ryan Plaza Drive, Suite 1000, Arlington, TX 76012, ATTN: Chief, Fuel Facility and Materials Safety Branch.

To assure validity and accuracy of data released for publication, each party shall have thirty (30) days from receipt of data under the program to review such data for the purpose of verification, as appropriate, prior to release to the public, unless otherwise required by law, or both parties agree to release.

#### ARTICLE VIII - PARTICIPATION BY OTHER GOVERNMENT AGENCIES

The Commission shall have the right to request and accept the participation of other Federal Government agencies in the program and to keep other interested Federal agencies fully and currently informed of the activities undertaken under this cooperative agreement.

#### ARTICLE IX - EXAMINATION OF RECORDS

The State agrees that the Commission and the Comptroller General of the United States or any of his duly authorized representatives shall, until the expiration of three (3) years after final payment under this cooperative agreement, have access to and the right to examine any directly pertinent books, documents, papers, and records involving transactions related to this cooperative agreement.

#### ARTICLE X - OFFICIALS NOT TO BENEFIT

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this cooperative agreement, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this cooperative agreement if made with a corporation for its general benefit.

#### ARTICLE XI - COVENANT AGAINST CONTINGENT FEES

The State warrants that no person or selling agency has been employed or retained to solicit or secure this cooperative agreement upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the State for the purpose of securing business. For breach or violation of this warranty the Federal Government shall have the right to annul this cooperative agreement without liability or in its discretion to deduct from the cooperative agreement price or consideration, or otherwise recover the full amount of such commission, percentage, brokerage, or contingent fee.

#### ARTICLE XII - CONVICT LABOR

In connection with the performance of work under this cooperative agreement, the State agrees not to employ any person undergoing sentence of imprisonment at hard labor.

#### ARTICLE XIII - NONDISCRIMINATION

The State agrees to comply with the Commission's Regulation (Part 4 of Title 10, Chapter 1, Code of Federal Regulations), as amended, effectuating the provisions of Title VI of the Civil Rights Act of 1964 and Title IV of the Energy Reorganization Act of 1974, as amended.

## ATTACHMENT A

### STATEMENT OF WORK

#### RADIATION MONITORING PROGRAM REQUIREMENTS

##### I. PURPOSE

The purpose of this cooperative agreement is to establish a collaborative program between the State of Colorado (hereinafter called the "State") and the Commission to provide independent measurements of radioactivity and radiation levels in the environment around selected Commission licensed activities, and to provide reasonable assurance that a licensee's environmental measurements are valid.

##### II. GENERAL REQUIREMENTS

The Commission and the State will collaborate in implementing and conducting programs at individual sites within the State in accordance with the following general requirements:

- A. The State, within a reasonable time after the effective date of this cooperative agreement, will take action to provide facilities, qualified personnel and/or agencies as may be necessary to accomplish the work described in this cooperative agreement. The State thereafter will maintain for the period of this cooperative agreement, a sufficient level of effort to fulfill the objectives of the cooperative agreement.
- B. Programs will be undertaken at the following sites:
  - Fort Saint Vrain Nuclear Generating Station
- C. Attachments 1, 2, and 3 show the overall sampling and analyses requirements for facilities. Attachment 2 also gives the minimum detectable capabilities for the samples analyzed. No on-site samples will be collected pursuant to the cooperative agreement unless specifically requested or approved by the Commission.

##### III. PROCEDURES FOR IMPLEMENTING AND CONDUCTING THE PROGRAMS

- A. The Commission's Office of Inspection and Enforcement (IE) Technical Representative will provide technical liaison, as necessary, between the State and the licensee, in all matters relating to the program conducted pursuant to the cooperative agreement. This liaison may be delegated to the NRC Region IV Technical Representative for the particular NRC licensee involved.

- B. The State will make all necessary contacts and arrangements for collecting samples in the off-site environment, e.g., obtaining access to private property, assistance of State or local agencies, arranging with private firms for services, etc.
- C. The State will make all necessary contacts and arrangements with the licensee to split samples with the licensee, obtain duplicate samples and obtain licensee's data on the comparative samples.
- D. The Commission will assist the State in selecting sampling locations, arranging for laboratory support, as necessary, splitting samples periodically, assisting State in obtaining licensee's comparative data, and consulting with the State on matters of mutual concern.
- E. The State will exchange TLDs at stations established jointly by the Commission and the State on a frequency of  $92 \pm 7$  days starting on January 1, 1980. The interval between exchanges shall not be smaller than 80 days nor larger than 100 days.

During an exchange, the State will replace TLDs currently in the field with annealed TLDs supplied by NRC Region IV office. Intransit control TLD will be placed in lead cask on arrival at State's point of dispatch.

Exposed TLDs will be shipped back to NRC Region IV as soon as possible by conveyance agreed upon by the Commission and State.

- F. The State will notify the NRC Office of Inspection and Enforcement Region IV Office by telephone (817/334-3475, FTS 334-3475) and written confirmation as soon as practicable after it becomes aware of any observed unusual condition, level of radiation, or concentrations of radioactive material measured in carrying out the programs at individual sites.
- G. The Commission will make the necessary inspections, investigations, and inquiries to ascertain the status of compliance by the licensees with license provisions, rules, orders, and regulations of the Commission and to determine the safety of licensee operations; and will initiate enforcement or other regulatory action as appropriate. Results of such inspections, investigations, or inquiries conducted in response to such notification shall be provided to the State.

#### IV. REPORTING

- A. The State will provide the Commission with an annual report of all off-site analyses with comparisons of similar analyses by the respective licensee within 120 days after January 1 of each year. The report shall follow the format of Attachment 3. In the event that some results are not available within the 120-day period, the report shall be submitted noting and explaining the reasons for the missing



results. The missing data shall be submitted as soon as possible in a supplementary report. If samples are not available, data analysis is not expected. However, a brief explanation as to why the sample was not provided is requested. If samples or data are not available because of the reluctance of the licensee to provide them, the NRC IE Regional Technical Representative should be notified as soon as possible. The annual report shall also include a summary of the State's EPA crosscheck program results for the past year.

- B. The Commission will arrange for the timely distribution of the reports within the Commission and to the licensee, and any other Federal, State or local agencies as may be necessary in meeting the intent of the "National Environmental Policy Act of 1969" (Public Law 91-190, 83 Stat. 853, dated January 1, 1970) for keeping affected agencies informed.
- C. The Commission will work with the State in making the program findings publicly available through special bulletins, press releases, and publication in appropriate technical journals or periodicals, or otherwise, to assure prompt and wide distribution of the data at minimum cost.
- D. The State will provide to the Commission on a quarterly basis, a report covering NRC funds expended during the preceding quarter, a total expenditure of funds under this cooperative agreement, and a tabulation of Services Rendered by facility. The format is shown in Attachment 4. This report shall be submitted to the Contracting Officer.

ATTACHMENT 1

ENVIRONMENTAL RADIOLOGICAL VERIFICATION MONITORING PROGRAM  
AROUND NUCLEAR POWER PLANTS

<u>Exposure Pathway and/or Sample</u>	<u>Number of Samples and Location</u>	<u>Sampling and Collection Frequency</u>	<u>Type of Frequency of Analysis</u>
AIRBORNE: Particulates	One sample from location of high calculated ground level concentration and in close proximity of licensee sampler.  One sample from control location.	Continuous operation of sampler with sample collection as required by dust loading but at least once per 7 days.	Gross beta radioactivity following filter change composite for gamma isotopic analysis quarterly.
Radioiodine	Same as particulates.	One sample per month.	Analyze for I-131
WATERBORNE: Surface	One sample, split with licensee, from immediate area of discharge, (or at nearest downstream drinking water supply) and one sample at upstream control location.	Composite sample monthly.	Gamma isotopic analysis monthly and tritium quarterly.
INGESTION: Milk	One sample, split with licensee, at the off-site dairy farm or individual milk animal at the location having highest X/Q.	Monthly.	Gamma isotopic and radioiodine analyses.
Fish or Invertebrates	One sample, split with licensee, of a commercially or recreationally important species in vicinity of discharge point.	Semiannually or in season.	Gamma isotopic of edible portions.

<u>Exposure Pathway and/or Sample</u>	<u>Number of Samples and Location</u>	<u>Sampling and Collection Frequency</u>	<u>Type of Frequency of Analysis</u>
Food Products	Two samples split with licensee, of principal food products grown near point having the highest X/Q or from any area which is irrigated by water in which liquid plant wastes have been discharged or green leafy vegetables at a private garden or farm in the immediate area of the plant.	At time of harvest.	Gamma isotopic on edible portion. Radioiodine analysis on green leafy vegetable.
Sediment from Shoreline	One sample split with licensee	Annually.	Gamma isotopic analysis.
TLD-Direct Radiation	<p>a. TLD badges in 16 sectors around plant site at two distances from site boundary:</p> <ol style="list-style-type: none"> <li>1) Site boundary out to 1 mile</li> <li>2) Two (2) to 4 miles from site boundary.</li> </ol> <p>b. Population centers within 10 miles.</p> <p>c. Maximum exposed residences within 3 miles.</p> <p>d. High public interest sites within 5 miles.</p> <p>e. Background control site (3) greater than 15 miles from plant</p>	Quarterly	Analyses to be performed by Commission.

## ATTACHMENT 2

## DETECTION CAPABILITIES FOR ENVIRONMENTAL SAMPLE ANALYSES

<u>Analysis</u>	<u>LOWER LIMIT OF DETECTION<sup>a</sup> (LLD)</u>					
	<u>Water</u> <u>(pCi/l)</u>	<u>Airborne Particulate</u> <u>or Gas</u> <u>(pCi/m<sup>3</sup>)</u>	<u>Fish, Meat</u> <u>or Poultry</u> <u>(pCi/kg, wet)</u>	<u>Milk</u> <u>(pCi/l)</u>	<u>Food Products</u> <u>(pci/kg, wet)</u>	<u>Sediment</u> <u>(pCi/kg, dry)</u>
gross beta	2	0.01				
<sup>3</sup> H	330					
<sup>54</sup> Mn	15		130			
<sup>59</sup> Fe	30		260			
<sup>58,60</sup> Co	15		130			
<sup>65</sup> Zn	30		260			
<sup>95</sup> Zr-No	10					
<sup>131</sup> I	0.4	7 x 10 <sup>-2</sup>		1	60	
<sup>134</sup> Cs, <sup>137</sup> Cs	15	1 x 10 <sup>-2</sup>	130	15	60	150
<sup>140</sup> Ba-La	15			15		

a. The nominal LLD is defined in HASL 300 (rev 8/74) pp D-08-01, 02, 03 at the 95% confidence level. The LLD for radionuclides analyzed by gamma spectrometry will vary according to the number of radionuclides encountered in environmental samples. These detection levels should be used as minimum criteria for objectives for instrumentation and analytical procedure selection. The LLD is calculated to the end of the total sampling period.

ATTACHMENT 3

Name of Facility

(Location of Facility)

(Reporting Period)

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Medium or Pathway Sampled	Split or Duplicate Sample	Location Name	Distance & Direction	Date	State Results	Licensee Results
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ATTACHMENT 4

Description of Services Rendered

Facility \_\_\_\_\_ Location \_\_\_\_\_

No. Samples	Sample Type	Analyses Performed				No. Analyses
		Beta	Gamma	Tritium	I-131	
18	Air Particulate	18	6			24
58	Radioiodine		58			58
18	TLDs					18
6	Water		6	4		10
2	Sediment		2			2
2	Milk		2		2	4
0	Food Products					0
2	Fish		2			2

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Man-hours expended:

Field Sampling.....351 hours  
 Analytical Services.....229 hours  
 Quality Assurance..... 46 hours  
 Administration.....127 hours

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