



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20545

JUL 30 1981

The Franklin Institute  
ATTN: Mr. John R. Stover  
Vice President  
Franklin Research Center  
20th and Benjamin Franklin Parkway  
Philadelphia, PA 19103

Gentlemen:

Subject: Contract No. NRC-05-81-247, Task Order Nos. 1, 2, 3, 4, 5,  
and 6

Pursuant to the pertinent provisions of this Contract, I hereby authorize the expenditure of funds in the amount of \$125,000.00 to provide to the Office of Inspection and Enforcement independent assessments, including destructive testing and analysis, of samples from NRC licensees' facilities as outlined in the enclosed Task Order Nos. 1, 2, 3, 4, 5, and 6, and as further described by individual Task Authorization Forms (TAF) or other written directives issued hereunder.

The total ceiling price for all of the task orders is \$125,000.00, and all activities in all disciplines hereunder shall cease when this level is reached unless otherwise notified by written order from the Contracting Officer. The amount of expenditure under each task order shall be determined by the numbers of Task Authorization Form requests received per task order.

This letter, executed on behalf of the Commission, is forwarded to you in quadruplicate. Please acknowledge receipt on three (3) copies hereon, and return them to me as soon as possible. The fourth copy is for your retention.

Sincerely,

Kellogg V. Morton  
Contracting Officer  
Research Contracts Branch  
Division of Contracts  
Office of Administration

Enclosures:  
Task Order Nos. 1, 2, 3, 4, 5, and 6 (4 copies)

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The Franklin Institute  
Task Order Nos. 1, 2, 3, 4, 5, and 6

RECEIVED:

Franklin Research Center

BY: E. B. Rosenberg  
E. B. Rosenberg  
TITLE: Contracts Manager  
DATE: August 4, 1981

Franklin Research Center

NRC Contract No. NRC-05-81-247

Task Order No. 1 Civil Engineering

1. Scope of Work

- a. Provide chemical and physical tests and analysis of materials and systems used in the discipline of civil engineering.

2. Objective of Work

To provide independent technical data, records and technical assistance from field or laboratory test results. To assist in investigations by analysis and evaluation of technical data submitted as a result of incidents and/or inspection support.

3. Statement of Work

Each sample or group of samples provided to Franklin Research Center for testing and/or analysis will carry a Task Authorization Form (TAF) which identifies the specific request including applicable codes and standards. The following items are examples of requests which may be submitted under this Task Order:

- a. Chemical and Physical Test and Analysis of Materials used in Concrete.
- b. Concrete Compression Tests.
- c. Strength Tests on Mechanical and Butt Welded Rebar Splices.
- d. Sensitization Tests of Stainless Steel Materials.

4. Reporting Requirements

Test results, analysis of material and/or the results of independent evaluation with the task order report shall be submitted to the TAF initiating office as indicated on the TAF. A copy of each report shall be submitted to the Project Officer: W. Laudan, Office of Inspection and Enforcement: Division of Resident and Regional Reactor Inspection, U. S. Nuclear Regulatory Commission, MS-EW 350, Washington, D.C., 20555.

A monthly report combining activities under all Task Orders issued will be submitted to the Contracting Officer with a copy to the Project Officer.

5. Desired Completion Date

In many instances time is of the essence and test results, analysis of material or results of independent evaluation are needed at the earliest turn around time possible, without the use of overtime or night differential. In instances where more time is available, this will be indicated on the Test Authorization Form (TAF).

6. Special Instructions or Requirements

Special Instructions pertaining to the service or the follow-up report, such as proprietary information, will be made part of the TAF, or be sent by separate letter or memorandum. Some information provided may be used as evidence during testimony in public hearings, and in such case will be made part of the TAF or submitted by separate letter.

7. Place of Work

The majority of work under this task order will be performed in Franklin Research Center facilities in Philadelphia, Pennsylvania.

Consulting work or local testing may make it necessary to perform a task at other locations. The TAF or separate letter will identify such a requirement.

8. Cost Ceiling

\$125,000.00 - cumulative for all tasks.

Franklin Research Center

NRC Contract No. NRC-05-81-247

Task Order No. 2 Mechanical Engineering

1. Scope of Work

- a. Provide mechanical and metallurgical tests and analyses of material used in structural steel, safety related piping, mechanical components or parts thereof including proper composition, strength, fracture toughness, heat treatment and metallurgical properties.
- b. Nondestructive examinations such as ultrasonic, radiography, liquid penetrant, magnetic particle, eddy current or other methods which may be necessary for metallurgical examination.

2. Objective of Work

To provide independent technical data, records and technical assistance from laboratory test results. To assist in investigations by analysis and evaluation of technical data submitted as a result of incidents and/or inspection support.

3. Statement of Work

Each sample or group of samples provided to Franklin Research Center for testing and/or analysis will carry a Task Authorization Form (TAF) which identifies the specific request including applicable codes and standards. The following items are examples of requests which may be submitted under this Task Order:

- a. Mechanical tests such as hardness and charpy vee notch, strength, fracture toughness values of materials and welds and other material specifications and/or metallurgical properties.
- b. Sensitization tests of stainless steel material samples and their susceptibility to intergranular attacks.
- c. Weld metal testing for typical rods, fluxes electrodes, inserts, etc.
- d. Qualification of weld procedures.
- e. Nondestructive examinations of material samples, equipment or components.

4. Reporting Requirements

Test results, analysis of material and/or the results of independent evaluation with the task order report shall be submitted to the TAF initiating office as indicated on the TAF. A copy of each report shall be submitted to the Project Officer: W. Laudan, Office of Inspection and Enforcement: Division of Resident and Regional Reactor Inspection, U. S. Nuclear Regulatory Commission, MS-EW 359, Washington, D.C., 20555.

A monthly report combining activities under all Task Orders issued will be submitted to the Contracting Officer with a copy to the Project Officer.

5. Desired Completion Date

In many instances time is of the essence and test results, analysis of material or results of independent evaluation are needed at the earliest turn around time possible, without the use of overtime or night differential. In instances where more time is available, this will be indicated on the Test Authorization Form (TAF).

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7. Place of Work

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8. Cost Ceiling

\$125,000.00 - cumulative for all tasks.

Franklin Research Center

NRC Contract No. NRC-05-81-247

Task Order No. 3 Electrical and Instrumentation Engineering

1. Scope of Work

- a. Provide electrical, mechanical, pneumatic, seismic, environmental and fire testing for specific electrical and instrumentation and control components and assemblies.

2. Objective of Work

To provide independent technical data, records and technical assistance from field or laboratory test results. To assist in investigations by analysis and evaluation of technical data submitted as a result of incidents and/or inspection support.

3. Statement of Work

Each sample or group of samples provided to Franklin Research Center for testing and/or analysis will carry a Task Authorization Form (TAF) which identifies the specific request including applicable codes and standards. The following items are examples of requests which may be submitted under this Task Order:

- a. Electrical equipment and component functional testing.
- b. Environmental qualification testing of typical electrical equipment and components.
- c. Electrical cable penetration firestop testing.
- d. Seismic testing of electrical, pneumatic, instrumentation and controls components.
- e. Qualification testing of electrical cables.

4. Reporting Requirements

Test results, analysis of material and/or the results of independent evaluation with the task order report shall be submitted to the TAF initiating office as indicated on the TAF. A copy of each report shall be submitted to the Project Officer: W. Laudan, Office of Inspection and Enforcement: Division of Resident and Regional Reactor Inspection, U. S. Nuclear Regulatory Commission, MS-EW 359, Washington, D.C., 20555.



A monthly report combining activities under all Task Orders issued will be submitted to the Contracting Officer with a copy to the Project Officer.

5. Desired Completion Date

In many instances time is of the essence and test results, analysis of material or results of independent evaluation are needed at the earliest turn around time possible, without the use of overtime or night differential. In instances where more time is available, this will be indicated on the Test Authorization Form (TAF).

6. Special Instructions or Requirements

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7. Place of Work

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Consulting work or local testing may make it necessary to perform a task at other locations. The TAF or separate letter will identify such a requirement.

8. Cost Ceiling

\$125,000.00 - cumulative for all tasks.



Franklin Research Center

NRC Contract No. NRC-05-81-247

Task Order No. 4 Chemical Engineering

1. Scope of Work

- a. Provide chemical analysis of material samples including quantitative analysis for inorganics and gas chromatographic spectrometric analysis.

2. Objective of Work

To provide independent technical data, records and technical assistance from field or laboratory test results. To assist in investigations by analysis and evaluation of technical data and chemical analysis of material samples submitted as a result of incidents and/or inspection support.

3. Statement of Work

Each sample or group of samples provided to Franklin Research Center for testing and/or analysis will carry a Task Authorization Form (TAF) which identifies the specific request including applicable requirements, codes or standards. The following items are examples of requests which may be submitted under this Task Order:

- a. Spectrographic analysis of metallic matters including molecular spectroscopy.
- b. Infrared Quantitative Analysis for identification of material.
- c. X-Ray Emission Spectrometric Analysis of Low-Alloy Steels.

4. Reporting Requirements

Test results, chemical analysis of material and results of independent evaluation with the task order report shall be submitted to the TAF initiating office as indicated on the TAF. A copy of each report shall be submitted to the Project Officer: W. Laudan, Office of Inspection and Enforcement: Division of Resident and Regional Reactor Inspection, U. S. Nuclear Regulatory Commission, MS-EW 359, Washington, D.C., 20555.

A monthly report combining activities under all Task Orders issued will be submitted to the Contracting Officer with a copy to the Project Officer.

5. Desired Completion Date

In many instances time is of the essence and test results, analysis of material or results of independent evaluation are needed at the earliest

Franklin Research Center

NRC Contract No. NRC-05-81-247

Task Order No. 5 Environmental Testing

1. Scope of Work

- a. Provide environmental tests and analyses of equipment and components used in safety related systems, including independent verification and compliance with regulatory requirements and applicable codes and standards.

2. Objective of Work

To provide independent technical data, records and technical assistance from laboratory test results. To assist in investigations by analysis and evaluation of technical data submitted as a result of incidents and/or inspection support.

3. Statement of Work

Each sample or group of samples provided to Franklin Research Center for testing and/or analysis will carry a Task Authorization Form (TAF) which identifies the specific request including applicable requirements, codes or standards. The following items are examples of requests which may be submitted under this Task Order:

- a. Baseline test.
- b. Radiation aging.
- c. Thermal aging.
- d. Wear aging.
- e. Vibration aging.
- f. Seismic testing.
- g. Accident radiation.
- h. Simulated LOCA/MSLB.

4. Reporting Requirements

Test results, analysis of material and/or the results of independent evaluation with the task order report shall be submitted to the TAF initiating office as indicated on the TAF. A copy of each report shall be submitted to the Project Officer: W. Laudan, Office of Inspection and Enforcement: Division of Resident and Regional Reactor Inspection, U. S. Nuclear Regulatory Commission, MS-EW 359, Washington, D.C., 20555.

A monthly report combining activities under all Task Orders issued will be submitted to the Contracting Officer with a copy to the Project Officer.

5. Desired Completion Date

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7. Place of Work

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Consulting work or local testing may make it necessary to perform a task at other locations. The TAF or separate letter will identify such a requirement.

8. Cost Ceiling

\$125,000.00 - cumulative for all tasks.

Franklin Research Center

NRC Contract No. NRC-05-81-247

Task Order No. 6 Fire Safety

1. Scope of Work

- a. Provide chemical and physical tests and analysis of materials equipment and systems used in the discipline of fire safety.

2. Objective of Work

To provide independent technical data, records and technical assistance from field or laboratory test results. To assist in investigations by analysis and evaluation of fire retardent materials, fire prevention equipment and components and technical data submitted as a result of incidents and/or inspection support.

3. Statement of Work

Each sample or group of samples provided to Franklin Research Center for testing and/or analysis will carry a Task Authorization Form (TAF) which identifies the specific request including applicable codes and standards. The following items are examples of requests which may be submitted under this Task Order:

- a. Chemical and Physical Test and Analysis of Materials, Equipment and Components used in fire detection and fire prevention systems.
- b. Analysis and testing of fire retardent materials and components.
- c. Testing of fire barriers.
- d. Independent assessment of quality standards for safety related fire detection and fire prevention equipment and components.

4. Reporting Requirements

Test results, analysis of material, equipment, components and/or the results of independent evaluation with the task order report shall be submitted to the TAF initiating office as indicated on the TAF. A copy of each report shall be submitted to the Project Officer: W. Laudan, Office of Inspection and Enforcement: Division of Resident and Regional Reactor Inspection, U. S. Nuclear Regulatory Commission, MS-EW 359, Washington, D.C., 20555.

A monthly report combining activities under all Task Orders issued will be submitted to the Contracting Officer with a copy to the Project Officer.

5. Desired Completion Date

In many instances time is of the essence and test results, analysis of material or results of independent evaluation are needed at the earliest turn around time possible, without the use of overtime or night differential. In instances where more time is available, this will be indicated on the Test Authorization Form (TAF).

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7. Place of Work

The majority of work under this task order will be performed in Franklin Research Center facilities in Philadelphia, Pennsylvania.

Consulting work or local testing may make it necessary to perform a task at other locations. The TAF or separate letter will identify such a requirement.

8. Cost Ceiling

\$125,000.00 - cumulative for all tasks.