

March 14, 1994

Mr. E. Miles
Idaho Operations Office
U. S. Department of Energy
785 DOE Place
Idaho Falls, ID 83402

Dear Mr. Miles:

SUBJECT: INEL TECHNICAL ASSISTANCE TO THE OFFICE OF NUCLEAR REACTOR
REGULATION, NRC - "TECHNICAL ASSISTANCE IN SUPPORT OF NRR LICENSE
RENEWAL ACTIVITIES," JOB CODE L-1606, MODIFICATIONN FOR PROJECT 5

This letter is a request for a proposal from the Idaho National Engineering Laboratory (INEL) to provide technical assistance to the Office of Nuclear Reactor Regulation (NRR) of the Nuclear Regulatory Commission (NRC). The enclosed Statement of Work details the required work and should be used as the basis for preparing a proposal. Project 5, "Review of Electrical Engineering Aging Issues For License Renewal," is being added to Job Code L-1606. Standard terms and conditions for NRC work, as approved by DOE Headquarters, apply to this effort. A copy of these terms and conditions have been furnished to your office separately. A revised Form 189 containing your proposal should be submitted within 6 weeks in 6 copies to:

U.S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Attn: Richard C. Brady, Project Manager
Mail Stop: OWFN 11-H-21
Washington, D.C. 20555

This request for proposal is not an authorization to start work. Authorization to start work becomes effective upon the INEL acceptance of an appropriately executed NRC Form 173, Standard Order For DOE Work.

If you have any questions about this request, please contact Richard C. Brady, Project Manager, on (301) 504-1188.

Sincerely,

9404010004 940314
PDR DRG NRRB
PDR

Original signed by:
Dennis M. Crutchfield, Associate Director
for Advanced Reactors and License Renewal
Office of Nuclear Reactor Regulation

Enclosure:
Statement of Work

cc: R. Barber, HQ-DOE
S. Armour, DOE-ID
C. Obenchan, INEL
J. Edson, INEL
G. Jones, INEL

PIC-1-1
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STATEMENT OF WORK
JOB CODE L-1606
PROJECT NO. 5

TITLE: REVIEW OF ELECTRICAL ENGINEERING AGING ISSUES FOR LICENSE RENEWAL

JOB CODE: L-1606

B&R NUMBER: 420-19-11-08-0

NRC PROJECT MANAGER: Richard Brady, ADAR (301 504-1188)

NRC TECHNICAL MONITOR: Paul Shemanski, ADAR/PDLR (301 504-1377)

TAC NO.: M88343

NRR PRIORITY: 1

BACKGROUND

Over the past several years the Office of Research has been conducting the Nuclear Plant Aging Research (NPAR) Program. The conclusions based on the NPAR program indicated that some of the existing programs need enhancement. The staff needs expert assistance in reviewing the results from the NPAR Program and recent operating experience in assessing electrical engineering aging issues related to license renewal which may potentially have an impact on operating reactors.

Idaho National Engineering Laboratory (INEL) has the necessary expertise in these areas.

OBJECTIVE

The objective of this project is to obtain technical expertise from INEL to assist the staff in assessing electrical engineering aging issues related to license renewal which may potentially have an impact on operating reactors.

TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED

INEL shall provide three engineers that are experienced in the area of electrical age-related degradation mechanisms that may lead to common cause failures if allowed to continue without any additional prevention or mitigation measures. Examples are cable embrittlement, vibration, corrosion, contamination by dirt and moisture, overvoltage/current, etc.

It is the responsibility of the contractor to assign technical staff, employees, subcontractors, or specialists who have the required educational background, experience, or combination thereof to meet both the technical and regulatory objectives of the work specified in this statement of work (SOW). The NRC will rely on representations made by the contractor concerning the qualifications of the personnel assigned to this contract including assurance that all information contained in the technical and cost proposal, including resumes, is accurate and truthful.

TECHNICAL AND OTHER SPECIAL QUALIFICATIONS REQUIRED (Cont.)

The use of particular personnel on this project is subject to the NRC Project Manager's approval. This includes proposed changes to key personnel during the life of the project.

If any work will be subcontracted or performed by consultants, INEL shall obtain the NRC Project Manager's written approval of the subcontractor or consultant prior to initiation of the subcontract effort. Conflict of interest considerations shall apply to any subcontracted effort.

WORK REQUIREMENTS AND SCHEDULE

Add the following to the current 189 as Project 5.

<u>PHASE.</u>	<u>DESCRIPTION</u>	<u>COMPLETION SCHEDULE</u>
1.	INEL shall perform a review of the NPAR reports, NUMARC industry reports, INEL Aging and Life Extension of Major Light Water Reactor Components textbook, and recent operating experience to identify electrical engineering aging issues related to license renewal which may potentially have an impact on operating reactors. INEL shall develop a computer database for compiling aging issues identified. This database shall have the capability of user input of data sorting on specific keywords and printing reports. The database (local non-network) shall be compatible with the NRC NRR LAN system. (See enclosure for FIP resources).	Four (4) months after authorization to begin work.
2.	Perform an assessment of the applicability of the results from Phase 1 on the operation of nuclear power plants and develop a TER to identify applicable aging issues and provide a description of each issue with references. Include a discussion of any relevant operating experience. Document the basis for the applicability finding.	Six (6) months after authorization to begin work.
3.	Perform an assessment of the applicability of the results from Phase 1 on the operation of nuclear power plants and develop a TER to identify non-applicable aging issues and provide a description of each issue with references. Include a discussion of any relevant operating experience. Document the basis for the applicability finding.	Six (6) months after authorization to begin work.

LEVEL OF EFFORT AND PERIOD OF PERFORMANCE

The level of effort is estimated in professional staff months (PSM) as shown below:

<u>PHASE</u>	<u>LEVEL OF EFFORT (PSM)</u>
1.	3.5
2.	1.0
3.	1.0
Total	<u>5.5</u>

DELIVERABLES

Technical Reporting Requirements

As part of Phase 1, provide a TER summarizing the aging issues results and separate documentation to support the computer database. The documentation shall include the computer programming (compiler input coding).

As part of Phases 2 and 3, provide a TER identifying applicable and non-applicable aging issues, and a description of each issue with references. Also include a discussion of any relevant operating experience. Document the basis for each applicability and non-applicability finding.

The transmittal letter and cover page of each report, or other deliverables as appropriate, shall contain the Job Code number, task order number and title, and the NRC technical assistance control (TAC) number.

The contractor shall submit all reports and documents in draft form to the NRC Project Manager with a copy to the NRC Lead Engineer. The contractor shall incorporate NRC comments on the drafts into the final reports and documents, and submit the reports to the NRC Project Manager with a copy to the Technical Monitor.

NRC FURNISHED MATERIALS

The following documents will be provided to the INEL Principal Investigator by the NRC Lead Engineer:

NUREG - 1377 "NRC Research Program on Plant Aging: Listing and Summaries of Reports Issued through May 1992, Rev. 3," or the latest revision

NUREG/CR-5643 "Insights Gained From Aging Research," March 1992

NUREG/CP-0121 "Aging Research Information Conference - Abstracts of Paper," March 1992

Approximately 40 additional NPAR reports on electrical components

JOB CODE L-1606

MEETINGS AND TRAVEL

The following meetings and travel are anticipated:

Three one-person, two-day trips to NRC Headquarters in Rockville, Maryland (for Phase 1).

One two-person, two-day trip to NRC Headquarters in Rockville, Maryland (for Phases 2 and 3).

STANDARDIZED JUSTIFICATION TO BE INCLUDED WITH PROPOSAL (NRC FORM 189)
FOR FIP RESOURCES PROPOSED TO BE PURCHASED BY DOE LABORATORIES
TO PERFORM NRC WORK
December 21, 1993

When FIP resources are proposed for the project described in the statement of work, DOE laboratories must justify the need for and cost of those resources. Proposed FIP resources should be those required to accomplish the work but which are not available from within the laboratory's inventory of FIP resources. Common office automation equipment and software, i.e. personal computers, word processing and spreadsheet software, and printers, should not routinely be proposed as they should normally be provided as part of the laboratory's information processing infrastructure. Whenever FIP resources are proposed, justification is necessary for the NRC to be able to evaluate the requirements and to approve their acquisition.

In addition to the cost of FIP resources to be reported on the NRC Form 189, the following justification is to be included in the proposal.

1. FIP Resource Requirements. List as line items each FIP resource (hardware, e.g. laptop computer, engineering workstation; software - by product name; and services, e.g. computer time, database services) proposed for acquisition and estimate the cost of each item by fiscal year. Funding should be indicated for the year in which the FIP resource is needed. Provide totals for all items for each fiscal year which match the costs listed on the line labeled FIP RESOURCES on the NRC Form 189.
2. Justification. For each required FIP resource with an acquisition cost of \$500 or more, or group of resources, e.g. a system, provide specifications or the specific make/model. Briefly discuss how the FIP resources will be used, including information about workload to be processed, required capacities, throughput, transfer rates, compatibility and expandability requirements, or any other information that supports the need to acquire the specific resources being proposed.