



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555

JUL 3 1991

AECL Technologies  
ATTN: Mr. D.R. Shiflett  
15400 Calhoun Drive  
Suite 100  
Rockville, Maryland 20855

Dear Mr. Shiflett:

Subject: Task Order No. 37 U.S. Contract No. NRC-03-90-031 Entitled  
"Electrical Distribution System Functional Inspection -  
Dresden" (FIN L-1527)

You are hereby authorized to commence work under the subject Task Order effective July 5, 1991, with an established ceiling of \$102,547.71.

In accordance with the task order procedures of the subject contract, this letter definitizes Task Order No. 37. This effort shall be performed in accordance with the enclosed Statement of Work and the Contractor's technical proposal dated May 31, 1991, incorporated herein by reference.

Task Order No. 37 shall be in effect from July 5, 1991 through August 24, 1991, with a cost ceiling of \$102,547.71. The amount of \$100,457.34 represents the total estimated reimbursable costs and the amount of \$2,090.37 represents the fixed fee.

Accounting data for Task Order No. 37 is as follows:

B&R No.:	120-19-14-02
FIN No.:	L-1527-1
Appropriation No.:	31X0200.201
Obligated Amount:	\$102,547.71

The following individuals are considered to be essential to the successful performance of the work hereunder:

B. Diest	J. Panesar
J. Haller	G. Skinner
S. Leelananda	N. Padhi

The Contractor agrees that such personnel shall not be removed from the effort under the task order without compliance with Contract Clause H.1, Key Personnel.

9107180194 910709  
PDR CONTR  
NRC-03-90-031 PDR

Mr. D. R. Shiflett

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Task Order No. 37  
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The issuance of this task order does not amend any terms or conditions of the subject contract.

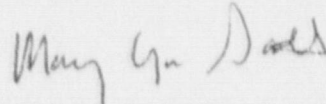
Your contacts during the course of this task order are:

Technical Matters: Brian E. Thomas  
Project Officer  
(301) 492-1210

Contractual Matters: Brenda J. DuBose  
Contract Administrator  
(301) 492-7442

Please indicate your acceptance of this task order by having an official, authorized to bind your organization, execute three copies of this document in the space provided and return two copies to the Contract Administrator. You should retain the third copy for your records.

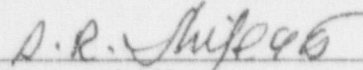
Sincerely,



Mary Lynn Scott, Contracting Officer  
Contract Administration Branch No. 1  
Division of Contracts and  
Property Management  
Office of Administration

Enclosure:  
As stated

ACCEPTED: Task Order No. 37

  
NAME D. R. Shiflett

Vice President/General Manager

TITLE

July 9, 1991

DATE

Contract NRC-03-90-031  
AECL Technologies

Enclosure

STATEMENT OF WORK

Task Order - 037

TITLE: Electrical Distribution System Functional Inspection -  
Dresden

DOCKET NUMBER: 50-237

B&R NUMBER: 120-19-14-02 FIN: L-1527

NRC PROJECT MANAGER: Brian Thomas, NRR (301-492-1210)

NRC TEAM LEADER: Peter Koltay

PERIOD OF PERFORMANCE: July 5, 1991 to August 24, 1991

BACKGROUND

A electrical Distribution Functional Inspection will be conducted at the Dresden 2 Plant. This inspection will assess, on a sample basis, the design, operation, maintenance and surveillance of the as configured electrical distribution system including modifications made since receipt of the operating license. The inspection is to be performed in accordance with Temporary Instruction 2515/107.

OBJECTIVE

The objective of this task order is to obtain expert technical assistance (three electrical design and one mechanical system design engineers) to assist the NRC inspection team in the performance of the subject Electrical Distribution Functional Inspection.

WORK REQUIREMENTS AND SCHEDULE

The work specified in this statement of work (SOW) falls within Section C.1.3 of the basic contract's SOW. The contractor shall provide the qualified specialists, and the necessary facilities, materials, and services to assist the NRC staff in preparing for and conducting the subject ESDFI, and documenting the inspection activities and findings. Specific tasks under this Task Order are:

<u>Task</u>	<u>Scheduled Completion</u>
1. Prepare for the subject inspection reviewing inspection related background documentation and records provided by the NRC Team Leader and prepare input to the inspection plan.	Two days prior to the inspection.
2. Perform the subject inspection	
The inspection should evaluate whether:	A pre-inspection visit to the site is scheduled on or about July 8-12, 1991. The inspection preparation is scheduled to take concurrently. The inspection is to take place on or about July 22-26 and August 5-9, 1991, with an intervening home-office review period on July 29 - August 2, 1991.
(a). The installed configuration of the EDS in agreement with the facility drawings such as the Q-list, setpoint list, equipment location drawings and that appropriate physical separation has been maintained between redundant electrical divisions and internal plant hazards.	
(b) The EDS meets the appropriate regulatory requirements and licensing commitments.	
(c) Electrical motive and control power of the correct frequency and adequate voltage is available on demand to assure components will function as required to achieve safe shutdown and mitigate accident consequences.	
(d) Proper logic for system actuation, operation, control and protection has been incorporated in the system. Review of proper logic includes review of control logic diagrams, and ladder diagrams of programmatic controllers, to verify that proper interlocks and permissives has been included in the design to achieve the required design functions of systems and components.	

- (e) Setpoints have been correctly chosen for over-current protective relays to (1) assure proper breaker coordination between different voltage levels; (2) to prevent exceeding the vendor specified thermal limits on motors, containment electrical penetrations and cable insulation systems;
  - 3) to allow starting of electrical equipment under degraded voltage conditions; and
  - 4) to provide adequate pre-trip alarms, when applicable.
- (f) Setpoints and time delays have been correctly chosen for other protective relays for attributes such as undervoltage, under-differential current, thermal overload and phase synchronization to assure proper functioning of the EDS.
- (g) The scope, depth and frequency of maintenance, surveillance and testing of electrical systems and components is adequate to verify their functional performance.
- (h) The operators understand the design bases and the limitations of the EDS. The inspections should evaluate whether the design bases and operating limitations have been adequately addressed in normal and emergency operating procedures.
- (i) The EDS support system such as HVAC, EDG fuel oil transfer system, EDG cooling water system and air-start system etc., are adequate to support operation under design basis conditions.

3. Prepare an inspection report input.

Documentation of inspection at the contractor's office on or about August 12-16, 1991 and at NRC Headquarters on or about August 19-21, 1991.

NOTE: The contractor's staff will require unescorted access to the site. Prior to the start of on-site preparation, the contractor's staff is required to be available to coordinate inspection aspects with the Team Leader. This includes discussions on inspection assignments, background briefing regarding inspection objectives, coordination of travel logistics, and preparation of site access documentation.

#### REPORT REQUIREMENTS

##### Technical Report

At the completion of Task 1, provide inspection plan input to the NRC Team Leader. The format and scope of this input shall be as provided by the NRC Team Leader.

During Task 2, each contractor specialist shall provide daily reports to the NRC Team Leader. The format and scope of these reports shall be as provided by the NRC Team Leader.

At the completion of Task 2 (prior to the inspection team's exit meeting with the licensee) each contractor specialist shall provide a draft inspection report input to the NRC Team Leader. The format and scope of this input shall be as provided by the NRC Team Leader. Typically, this input will consist of handwritten summary of the specialists inspection findings.

At the completion of Task 3, the contractor shall deliver each specialist's final inspection report input (feeder report) to the NRC Project Manager (original and one copy) with one hard copy and one computer diskette version (IBM Displaywrite 3 or 4, or other IBM PC compatible software acceptable to the NRC Team Leader) to the NRC Team Leader. The format and scope of the final report inputs shall be as provided by the NRC Team Leader.

Each specialist's feeder report will serve as documentation of the specialist's inspection activities, efforts, and findings, and will be used by the NRC Team Leader for the Preparation of the NRC's inspection report. As a minimum, each specialist's report input shall include the following:

- Identity of the individuals (name, company, and title) that provided information to the specialist during the inspection.
- For each area inspected, a description of the activities and general findings and conclusions reached regarding the adequacy of the area.
- For each area with a concern or findings, a discussion of the concern or findings with technical bases. --

#### BUSINESS LETTER REPORT

The contractor shall provide monthly progress reports in accordance with the requirements of the basic contract.

#### MEETINGS AND TRAVEL

One, four -person, five day trip to the plant site to prepare for the subject inspection.

Two, four -person, five day trips to the plant site, on July 22-26, and August 5-9, 1991 respectively, to assist the NRC in conducting the subject inspection.

One, one-person, three day trip to NRC Headquarters Office to assist the NRC in the documentation of inspection activities is also anticipated.

The contractor's staff shall coordinate all travel arrangements in advance with the NRC Team Leader.

#### ESTIMATED LEVEL OF EFFORT

<u>Number</u>	<u>Discipline</u>	<u>Hours</u>
1	Project Manager	70
1	Mechanical Systems Engineer	244
3	Electrical Design Engineer	732
	Support Staff	15
1	Engineer (to be designated)	24

The estimated level of effort for each of the specialists consists of 64 hours for inspection preparation, 100 hours for two on-site inspection activities, 40 hours for home office inspection related review during the intervening period between the on-site inspection periods, 40 hours for inspection documentation and 24 hours documentation coordination to occur either at the contractor's office or at NRC Headquarters as requested by the Team Leader.

As appropriate, the contractor specialists assigned to this task order will have to be badged for unescorted access privileges at the plant site. The contractor shall provide all advance information required for badging to the NRC Team Leader and the contractor specialists shall provide all documentation required before badging (as identified by the Team Leader) at the plant site. Questions concerning badging and plant site access shall be addressed to the NRC Team Leader.

It shall be the responsibility of the contractor to assign technical staff, employees, subcontractors who have the required educational background, experience, or combination thereof, to meet both the technical and regulatory objectives of the work specified in this SOW. The NRC will rely on representation made by the contractor concerning the qualifications of the personnel proposed for assignment to this task order including assurance that all information contained in the technical and cost proposals, including resumes and conflict of interest disclosures, is accurate and truthful.

NRC FURNISHED MATERIAL

Documents required to prepare for the subject inspection will be provided by the NRC Team Leader.