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Attachment 1 to
Transmittal of 4/2/82
PARAMETER, Inc. to USNRC

36 Pages plus
Appendices A, B, C & D

ORIGINAL

TECHNICAL PROPOSAL

in response to

USNRC Request for Proposal RS-OIE-82-249

Technical Assistance to Support
NRC-IE Personnel
in Investigation of Incidents

Submitted by:

PARAMETER, Inc.
13380 Watertown Plank Road
Elm Grove, Wisconsin 53122

Richard A. Lofy, President

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RFP Part II, Item 15 (P-18) Technical Proposal Content

Data, (not costs), applicable to labor hours, categories, materials, subcontracts, computer time, etc. is allowed, and could normally be entered in this section for identified tasks. However, in this instance it is not, as specific technical tasks to be fulfilled under the prospective contract are not identified in the RFP.

Although the Offeror has past experience with actual task orders, it did not appear appropriate to discuss those work requirements or methods of accomplishment in a hypothetical manner, or as 'typical', in the following discussion items a. through h. Therefore, the discussion items:a. Work Requirements, e. Potential Problems, and f. Schedules are addressed in a general way. Information required by:b. Experience, c. Resumes, d. Facilities, and g. Key Personnel are addressed directly with reference to historical experience and factual capabilities. Accordingly we expect that communication of the "specific innovation proposed by the Offeror", (as stated in the RFP, P-18, 3rd Para.), can only be evaluated in the context of prospective tasks. It is trusted that failure to communicate specifics will not ".....be construed as.....lack of understanding of the scope of work and objectives". Given representative task(s), we would be pleased to develop a specific technical approach as a supplementary negotiation effort.

a. Discussion of Scope of Work Requirements (per "Statement", RFP P-2

The detailed scope of the actual work of investigation and evaluation conducted under any contract resulting from this proposal will be determined by the individual Task Order. It will encompass application of the consultant(s)' efforts for review, analysis, evaluation, and reporting of findings with respect to Incidents identified by NRC-IE. Additionally, the work could entail generating responses to technical questions posed and providing expert witness in written disposition or public hearings. The discipline(s) involved will be dictated by the Task. Individual efforts may in many cases suffice, or inter-disciplinary teams will be assembled to respond to the assignment.

In the absence of specific technical assignments at this time, it is not possible to discuss the detailed objectives or methodology of an investigation. An effort will be made in addressing the RFP

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a. Discussion of Scope of Work Requirements (con't.)

points that follow to demonstrate generally that the approach to each assignment will be organized and systematic in response to the Task Order. Further, we trust that past performance for the Regulatory Organization will be demonstrative of the abilities of PARAMETER, Inc. to fulfill the contract objectives.

To address the Statement of Work, Article I, Part III, directly, the following information is provided: (Reference is to RFP Part III, P-21).

A. Objectives (included by reference)(P-21)

B. Technical Knowledge

1. Disciplines of the available professional and technical staff are abstracted on the following page, TP-6, under the heading "Summary Listing of Technical Capabilities". We believe they are responsive to the requirements of the RFP in this area. Staff and Consultant Resumes and Subcontractor Capabilities are referenced under the discussion of RFP Item 15, P-18 following on Pgs. TP-15, -1

Parameter, Inc. and its subcontract contributors, do have the ability to accept work on short notice and the flexibility to complete tasks in the most effective manner. The Project Director is both a direct contact with NRC and is in a position to make technical assignments or engage subcontract assistance subject only to NRC concurrence. The firm's quick response ability and task work flexibility has been demonstrated on many assignments over the years. (See Appendix A to this Technical Proposal.) The Project Organization for NRC tasks is shown on page TP-26. A Summary Listing of Technical Capabilities is shown on page TP-6 following.

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Summary Listing of Technical Capabilities:

Individually and/or collectively, PARAMETER, Inc. Staff, Subcontract Consultants and Subcontract Technical Service Firms, who are available for NRC-IE Technical Assistance, represent expertise in the areas listed below:

- Mechanical Design: Review, System Analysis
- Stress Analysis - Structural, Thermal, Fatigue
- Heat Transfer, Heat Flow Analysis, Fluid Flow Analysis
- Shock, Vibration, and Seismic Analysis
- ASME Code Calculations and Interpretations
- Manufacturing and Construction Practices
- Metallurgical Engineering, Welding, Metals Corrosion, Failure Analysis, Chemistry, Metals Processing and Forming
- Fracture Mechanics
- Nondestructive Examination (all types)(Level III Qualifications)
- Fabrication Practices, Material Selection and Application
- Civil Engineering: Structural Design, Concrete Manufacture and Placement, Foundations Construction Practices, Soils, Site Work
- Electrical Engineering: Controls, Industrial Power Distribution, Instrumentation, IEEE Qualification
- Marine Biology, Hazardous Waste Consultation, Pollution Control
- Power Piping Engineering: Consultation, Design, Installation Evaluation, Code Interpretations
- Paint and Coatings Consultation
- Fluid Power: Circuitry, Component Selection, Equipment Design and Test
- Nuclear Engineering, Safety Analysis
- Concrete Testing and Evaluation
- Fire Protection: Materials and Component Testing, Consultation
- General Nuclear Related Consultation & Documentation
- Chemical and Process Engineering
- Nuclear Component Handling, Remote Servicing and Inspection
- Quality Assurance: Program Development, Systems and Audit
- System Performance and Analysis

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B. Technical Knowledge (con't.)(Ref. RFP, P-22)

2. PARAMETER, Inc. as an independent consulting firm, is engaged in work for the general nuclear industry. Over one-half of our volume in 17½ years has been intimately nuclear related.

   The nature of this work and clientele are given in the General Section of this proposal starting on Page TP-28.

   Past work in the nuclear industry has not created a conflict of interest with NRC missions. Future assignments resulting from any prospective contract will continue to be evaluated in this regard on a case-by-case basis. We hereby stipulate that acceptance of NRC work assignments will be a certification that there are no existing or past agreements between the contractor and the licensee for which an issue exists that might infer a real or apparent conflict of interest.

3. The Offeror will meet the requirements of 10 CFR 50, Appendix B Quality Assurance, and submits herewith, (General Section, Item 5 following) our Quality Assurance Program as part of this proposal. The program can be revised and updated pursuant to NRC review and evaluation for final acceptance by NRC in the event a contract results from this RFP/proposal. Once approved, and with a contract in force, the Offeror will perform all applicable work under the contract in accordance with and under the control of the accepted Q/A program.

C. Statement of Work (RFP P-22)

1. Scope
   "The scope of work involves the application of any or all of the foregoing disciplines as they pertain to the functional areas of reactor construction and operation, safety, and inspection effrots to ensure applicable codes and federal regulations are being followed."

The above criteria from the RFP will be considered to apply to specific Task Assignments issued by NRC-OIE.

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2. Work Statement

The Offeror will furnish the necessary qualified personnel, facilities, materials and services to perform tasks relating to:

(a) "the development of technical data to be used in the preparation of answers to technical inquiries and evaluations of incidents" (RFP P-22)

Data will be assembled by the assigned Parameter Staff Engineer and/or consultant(s) in the disciplines required by the task order. Examples of application of different specialties to resolution of a problem would be for Parameter Stress Analyst to work with the Metallurgical Consultant and Laboratory in evaluation of a faulted part or system. This approach has been used on piping component crack problems and numerous bolt failure cases. (See Appendix A, List of Task Assignments.

(b) "the evaluation and analysis of laboratory and other tests of systems and components for technical resolution" (RFP P-22)

The principle investigator(s) assigned to a task, Parameter Staff Engineer and/or consultants, evaluate the results of non-personal test work performed by laboratories, NDE subcontractors and other sources.

Examples include technical review and evaluation of metallurgical test reports prepared by various laboratories, including Battelle Columbus Laboratories for hot lab work. The lab test report is made a part of the investigators overall evaluation and referenced in his report.

Subcontractor NDE reports are reviewed by the Parameter Staff Level III, and additional critique or reporting is developed in accordance with the NRC task requirements.

Physical tests are witnessed with test lab data being included in the Parameter report issued and stamped by the cognizant professional engineer.

(References to typical reports issued under the above procedures is made in Appendix A to this Technical Proposal.)

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2. Work Statement (con't.)(Ref. RFP, P-22)

(c) "the provision of assistance in conducting studies and reviewing licensee procedures and techniques pertaining to improvement of the inspection and enforcement program" (RFP P-22)

The Project Director and Staff will respond to these requirements as requested and in accordance with task assignments. Our role can also be defined by discussion and negotiation prior to committing the study to writing in the task assignment.

(d) "the provision of expert testimony on problems, issues, and allegations at public hearings" (RFP P-22)

Parameter, Inc. Staff, Consultants, and Subcontractors representatives are available for testimony as required and requested by NRC. We have previous experience in preparation for (disposition reports) and participation in, (testimony) public hearings on cases of allegations and design or quality problems in operating, near term and early construction phase plants.

(e) "the contractor shall provide technical assistance to support NRC Inspection and Enforcement personnel in investigations and evaluation of incidents, allegations and reported discrepancies in response to TASK ORDERS as delineated in paragraph 3.b.(3) below. Task Orders shall include but not be limited to the following subject areas:" (RFP P-23)

The Offeror affirms his commitment to be entirely responsive to task orders issued by NRC-OIE in connection with investigation and evaluation of incidents, allegations and reported discrepancies. Included would be the areas quoted below from the RFP:

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2. Work Statement (con't.)(Ref. RFP, P-23)

(e) (1) "Performance of analytical evaluations, including appropriate laboratory testing and examinations of any of a variety of material samples, to assist NRC in independently determining the validity of licensee reports or in resolving identified problems. Preparation of written factual reports of the work completed, an analysis of results, and conclusions reached." (RFP P-23)

(2) "Performance of independent engineering analyses for review and assessment of the reasonableness, appropriateness and accuracy of licensee actions, in analysis and correction of real or potential design deficiencies. Prepare written factual reports of the work done, analysis of results and conclusions reached." (RFP P-23)

(3) "Performance of independent analytical evaluations as to the validity and appropriateness of licensee actions in determining the cause of and correction of identified problems or failures of equipment and components that may have resulted from such actions as use of improper procedures, and/or nonadherence to prescribed procedures in manufacture, construction, installation, inspection, testing or operation of components of systems of NRC licensed facilities." (RFP P-23)

Investigations, analytical evaluations, and independent engineering analyses requirements addressed in Para. (1), (2), and (3) above will be conducted by the assigned Parameter professional staff engineer(s) and recommended consultant. Procedures for inter-disciplinary collaboration and development of factual test data on tasks will be as discussed under the "Work Statement' (P-22) Paras. C.2.(a) and (b) above. Reporting will be in agreement with the criteria set forth

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2. Work Statement (con't.) (Ref. RFP, P-23)

in (1), (2), and (3) above, the Task Assignment, and/or the contract specified report requirements for submittal, format and distribution.

Note: The above RFP paragraphs are quoted verbatim not to paraphrase the RFP Statement of Work, but to confirm responsiveness and entire conformance to their requirements. Additional comments are made to the extent possible without having specific or sample tasks applicable to Paras. (1), (2), and (3) described by the RFP.

(4) "Perform NRC-IE Bulletin closeout activities such as review and evaluate the utility responses, identify remaining problem areas, review applicable NRC-IE inspection reports, develop a closeout report which shall include methods of assuring that concerns and problem areas are properly revolved." (RFP P-23)

Parameter's regular full-time Staff is knowledgeable of the government regulations applicable to reporting events which lead to NRC's issurance of an IE Bulletin, and of the pursuant NRC regulatory procedures. Our staff is trained to prepare the documentation necessary to bulletin closeout and in most cases to complete the evaluation of utility responses entirely in-house. We follow reporting procedures and format for preparation of final reports in NUREG form as required by Part III, Article I, Subsection D (P-24) of the RFP.

Where additional expertise is needed for the evaluation of utility responses in very specialized technological fields, Subcontract Consultants and Subcontractor Firms under agreement can be called upon. If new generic subjects relative to reactor safety arise which are not within our now stated capabilities, expertise in these fields can be sought nationally and engaged. However, it is felt that the expertise referenced in various sections and the appendices to this technical proposal meets that required by the RFP.

Our approach to bulletin closeout will be timely, reflective of the immediate and ongoing status of NRC's closeout action; but flexible enough to accommodate new information inputs or

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2. Work Statement (con't.)(Ref. RFP, P-23)

evolving criteria. Manpower will be committed as the close-out tasks dictate for timely, yet cost effective completion.

(5) "Provide as Iridium 192 isotope source with camera. The source should have an activity of approximately 100 curies." (RFP P-23)

(6) "Provide personnel with qualifications to SNT-TC-1A Level III and Level II examiners to perform non-destructive examination in such areas as RT, UT, MT and PT." (RFP P-23)

(7) "Provide personnel to operate throughout the USA, an NRC-NDE Van completely equipped with NDE facilities (except an RT source) including isotope storage cabinet, P90 Magnaflux machine and extensive metallurgical testing facilities." (RFP P-23)

Parameter's present candidate subcontractor for providing the facility and services required by Paras. (5), (6), and (7) above is Wisconsin Industrial Testing, Inc., a Milwaukee area based NDE firm. Their management and field crews are nuclear component NDE qualified via SNT-TC-1A in RT, MT. PT, UT and supplementary metal and concrete testing techniques. (See personnel NDE qualifications under WIT in Appendix D to this proposal and "Subcontractor Experience on PARAMETER, NRC-OIE Tasks" on Page TP-22, -23.)

Addressing Para. (5) specifically, a new 100 curie source is generally ordered fresh for arrival at inspection sites on the first day of scheduled radiography.

As concurrent schedules might require, or, for technical or geographic preferences by NRC, other qualified NDE subcontractors can be engaged for on-site NRC-NDE van audit programs We have had good prior experience with Magnaflux Corp. (formerly the Peabody Testing unit), which firm can assemble NDE teams regionally. NDE subcontractors provide for necessary insurance, logistics, and isotope acquisition.

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2. Work Statement (con't.)(Ref. RFP, P-23)

Parameter's regular Staff Level III Consultant reviews all subcontractor qualifications, and facilities, if used on NRC work. He is on call during any field inspection to render independent interpretations of examination results and/or review procedures, methods, supplies, and equipment that might come into question during field NDE audits. Other Level III Consultants of national reputation are also available. (See Subcontract Consultant Listing on Page TP-18, and the Appendix B and C, resume sections.)

It is understood that in connection with the NRC-NDE Van operation, NRC will normally provide:

"(a) Selection of welds or components to be examined,
(b) Calibration of instrumentation,
(c) Verification and evaluation of test results,
(d) Surveillance of contractors' activities,
.....and detailed procedures"

If necessary, Parameter and its subcontractor(s) can provide additional procedures and equipment, should concurrent scheduling or supplementary inspection effort so require.

D. Report Requirements (P-24)

Parameter agrees with and will comply to the written and oral reporting requirements specified in this section.

E. Task Orders (P-24)

The administrative groundrules of this section are understood and agreed to.

The foregoing attention to the Statement of Work, Part III (RFP Pages 21 through 25) is given pursuant to the discussion requirement a. under Technical Proposal Content, Item 15 (P-18). Returning to the remaining requirements, our proposal continues with the discussions under Technical Proposal Content with 15b. as follows:

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b. Discussion of Offeror's Experience in Regulatory Systems

We believe that the experience of the PARAMETER, Inc. organization directly applicable to the requirements of this RFP is best described by our precedent work under a series of earlier contracts.

PARAMETER, Inc. held Technical Assistance contracts with the Regulatory Organization within the AEC (now NRC) from 1966 to date. We have provided independent consulting services on nuclear plant problems and questions in completion of over one-hundred and fifty assignments. These ranged from one or two days of consultation to some rather lengthy analysis and testing projects, and now include IE Bulletin Closeout Tasks. Many of these assignments were concerned with nuclear plant piping in some way and included installation evaluations, quality audits, and failure analysis.

We have conducted computer analyses for a number of these investigations, as well as for our commercial equipment clients and those doing Naval nuclear work. Major projects involving primary coolant systems demanded state-of-the-art analytical methods.

The same team that has demonstrated this basic analytical capability, and has acquired a variety of experience with actual nuclear plant construction via our NRC (AEC) assignments is being proposed for this project.

The role of our Staff and Consultants in performance of past NRC (AEC) task assignments is synopsized by titles of their reports. Task Assignments listed by number, date and contributors are contained in Appendix A. We believe this list provides a fairly comprehensive representation of our capabilities on past problems. Additionally, we are confident that the versatile and expanded team, and subcontract capabilities available for this proposed contract will be flexible and responsive to new NRC needs for Technical Assistance in meeting the continuing regulatory requirements.

Work for the NRC (and former AEC Regulatory Organization) was performed under the following contract numbers with the points of contact shown:

AEC Contract AT(11-1)-1658
AEC Chicago Operations Office
Argonne, Illinois

ERDA Contract AT(49-24)-0166 for NRC
ERDA Chicago Operations Office

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b. Discussion of Offeror's Experience in Regulatory Systems (con't.)

NRC Contract 05-77-186
NRC Division of Contracts
Washington, D.C.

NRC Contract 05-80-251
NRC Division of Contracts
Washington, D.C.

Professional Services for other nuclear clients has always been performed in a formal, or regulated type environment. We are familiar with and comfortable with the need for accurate documentation, engineering quality control, and formal submittal practices required by the military (Naval) and commercial (utility) segments of the industry.

In large non-nuclear programs, we have recently had four years experience in design and construction of demilitarization equipment to rigorous A/E and government specifications. A formal submittal/approval and as/built documentation process was always followed. MIL-STD Quality Control criteria were applied.

c. Professional Personnel Available

The personnel identified in listings and references that follow are available for Technical Assistance to NRC-IE under any contract resulting from this proposal. Should expertise in other technological areas, not now identified be needed, PARAMETER, Inc. will have in place the subcontracting machinery to quickly bring other consultants on board. We maintain directories of the technical disciplines, experience and research areas of the staff members of local Universities (University of Wisconsin-Madison, Marquette, Milwaukee School of Engineering, and University of Wisconsin-Milwaukee) and other organizations, and can often assist in finding the right man to fill a specialized role.

A list of regular PARAMETER Staff Personnel is given on Page TP-17. Resumes of the professional staff members are contained in Appendix B. Reports generated by our staff members generally were prepared in connection with previous industrial employment or on a client's account and are too numerous to list with the attached resumes. We will be pleased to provide titles and descriptions representative of individual accomplishments for NRC's further evaluation and review, and any other supplementary information to aid in assessment of our qualifications.

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c. Professional Personnel Available (con't.)

The Project Organization proposed for administration and technical execution of task assignments pursuant to the RFP is shown on Page TP-26.

Subcontract Consultants, who have agreed to participate in the program proposed herein, and their disciplines are listed on Page TP-18. Their respective resumes are contained in Appendix C.

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PARAMETER STAFF LISTING

PARAMETER, Inc. Professional Staff: (See Appendix B of Technical Proposal for Resumes)

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Subcontract Consultant Listing:
(See Appendix C of Technical Proposal for Resumes)

Note: Additional consultants appear in data on Subcontract Technical Services Firms, Appendix D to the Technical Proposal.

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d. Support Personnel and Facilities Available

PARAMETER, Inc. maintains an average staff of about ten full-time employees, who work regularly in the firm's offices in Elm Grove, Wisconsin. The engineering staff is supported by an experienced design/drafting group and clerical personnel. We have about three thousand square feet of floor space. A DOD and DOE security cleared area is maintained. The firm's policy and physical set-up provide for confidential handling and safeguarding of all clients' information and property. See General Section starting on Page TP-28 for further description of the firm's resources.

Outside support personnel, resources, and facilities available to meet the NRC objectives of this RFP include subcontractors. The "Subcontract Technical Services" list on Pages TP-20, -21, following contains suppliers of laboratory, test and specialty consultative services that are not available in-house. A summarization of "Subcontractor Experience on PARAMETER/NRC-OIE Tasks" is given on Pages TP-22, -23. Subcontract Firm data is contained in Appendix D.

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Subcontract Technical Services List: (Page 1 of 2)

1. The facilities of the laboratories at the [redacted] are available through [redacted]. Included are the following capabilities:

   Scanning Electron Microscope, Energy Dispersive X-Ray Analysis, Failure Analysis, Fracture Mechanics Testing, Weld Testing, Mechanical Testing, Microhardness Testing, Fatigue Testing, Corrosion Testing, Chemical Analysis, Metallography, Photography and General Metallurgical Services

2. Facilities at other institutions and commercial testing laboratories are available at the recommendation of the principle investigator for a given assignment and subject to NRC-CO approval.

3. Scanning electron microscope, hardness testing, and general metallurgical laboratory and consultative services are available to PARAMETER from [redacted].

4. With prior arrangement, PARAMETER, Inc. can also coordinate special test work, such as for radioactive materials, with [redacted].

5. NDE Services are available to PARAMETER from a varietv of independent firms nationwide.

   [redacted] (See Current Data on [redacted] in Appendix D to Technical Proposal)

6. Electrical/Electronic component and subsystem test capabilities are available from organizations specializing in nuclear equipment qualification and local control systems suppliers.

7. Mechanical Testing services in diverse areas can be obtained from recognized firms serving the nuclear industry as an input to task assignments and reporting by PARAMETER's staff or consultants. Metals, structures and concrete testing facilities are also conveniently available to PARAMETER at

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Subcontract Technical Services List: (con't.) (Page 2 of 2)

8. Fire Protection consultation, materials and component fire resistance/retardant testing, and fire safety inspection services are available to PARAMETER through [redacted] (See brochure in Appendix D to the Technical Proposal)

9. Consultation in Aquatic Biology and Hazardous Wastes. (See brochure and professional resumes for [redacted] in Appendix D to the Technical Proposal)

10. Testing and Evaluation of Concrete is obtained through our civil engineering consultants or any national testing services that will best meet NRC needs as to specific expertise, equipment and locality. (See data on [redacted] in Appendix D to the Technical Proposal)

11. Materials Chemical Analysis services from any qualified laboratory as tasks require. For materials evaluation or failure analysis of metal parts, chemical analysis is usually specified and obtained by the metallurgical investigator.

12. A broad spectrum of nuclear industry consulting services are available through [redacted], this firm being a potential minority subcontractor. (See data on this firm in Appendix D to the Technical Proposal)

13. Complete shop and field NDE services are also available through [redacted]. When needed the [redacted] resources can be mobilized on a team basis to perform testing at any plant site.

Note: See specific Subcontractor Data applicalbe to listings 3, 4, 5, 8, 9, 10, and 12 in Appendix D to the Technical Proposal. Those firms have committed to being available to PARAMETER, Inc. for the prospective contract period.

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Subcontractor Experience on PARAMETER/NRC-OIE Tasks:

As examples of specialties called upon during the past four years, the following organizations and task participation are listed:

a.

b.

c.

d.

e.

f.

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Subcontractor Experience on PARAMETER/NRC-OIE Tasks: (con't.)

g.

h.

i.

In each of the above instances, the testing or laboratory services have been coordinated, monitored, and witnessed as applicable by the PARAMETER staff or consultant contributors to the final report issued to NRC by PARAMETER, Inc.

NRC tasks have traditionally required specialized, sometimes unique, and often unplanned-for services. PARAMETER's position in a nuclear-focused industrial environment has allowed it to obtain those services not available in-house on a responsive and quick reaction basis. The firm continues to offer this project management aspect of its capabilities, in addition to, and in conjunction with individual and team technical contributions.

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e. Discussion of Potential Problem Areas and Resolution

This facet of the technical proposal requirements cannot be addressed except for a given Task Order. Potential problems along with recommended solutions will be highlighted as applicable in the normal process of carrying out task assignments.

f. Discussion of Scheduled and Milestones

These points will be addressed in acceptance of a given Task Order. The Project Director will make the personnel assignment(s) and confirm NRC requested, or suggest completion dates for subparts. These milestones would generally include confirmation of the assignees to start the work and scheduling of preliminary oral, interim written and final reports. Field work is scheduled to NRC's requirements whenever possible. Technical and cost reporting will be in accordance with the requirements of Part III, Article I, D of the RFP. Quick response capability when needed by NRC is recognized as a necessary factor in meeting the RFP requirements.

g. Key Personnel Assignments

The "Organization Chart for NRC-IE Tasks" is shown on following Page TP-26.

The commitment of time by PARAMETER full-time staff personnel is usually relatively short term when compared to the period of performance of two years covered by the proposed contract. Thus, rather than predict the time they would be committed to other projects, we feel it is more meaningful to project the time they could be available for NRC Task Assignments over the prospective contract period. Parameter Staff considered to be 'key' to meeting an NRC task load typified by past experience, and their proposed availability for these tasks, are listed below:

(next page)

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g. Key Personnel Assignments (con't.)

Parameter "Key Personnel" for Anticipated NRC Task Assignments	Proposed Time Available (% of Full Time)

Without making guarantees, which would depend on specific task loads, the Offeror feels confident that the above time allocations could be depended upon if the NRC's requirements so warranted. On the other hand, only time actually applied and authorized by Task Orders is vouchered. Manhours capabilities can also be expanded.

Parameter's Subcontract Consultants and Subcontract Technical Service Firms are also considered 'Key' to fulfilling the varied disciplinary requirements of NRC Task Orders. Consultant availability is determined on a case basis. Historically, our regular Consultants have been prompt and flexible in meeting NRC's needs, even on short notice. In the disciplines we would expect to be in demand, we have for the most part backup expertise. In fact, often alternate consultants can be offered to meet a task assignment before it is committed.

Subcontract Technical Service Firms have the personnel depth, and alternates are available to the extent that we do not believe current commitments to be a factor for the proposed contract period.

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PARAMETER, Inc. Organization for NRC-IE Technical Assistance

USNRC-RFP: RS-OIE-82-249

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h. Statements of Interpretations, Requirements and Assumptions

Based on a studied review of requirements of Part III, Article I, the management of PARAMETER, Inc. feels that its organization, together with its proposed consultants and subcontractors can fulfill the NRC-IE objectives of the RFP. We believe that we have the aggregate technical knowledge and depth in the specified disciplines to generally be responsive to upcoming issues requiring technical resolution. Further, we have the system in place to extend our service into developing areas.

PARAMETER, Inc. is engaged in work for the general nuclear industry. We intend to stay in this field as independent consultants and to continue to offer our services to both industry and government. Accordingly we will keep abreast of evolving Codes and applicable Federal Regulations to maintain a posture of being able to work effectively within the regulatory process while maintaining an insight to industry's practical capabilities. In this respect we follow the standards for Quality Assurance of Design Engineering and Analysis as apply to nuclear safety related hardware.

Utilizing the above described resources, performance on Task Orders will meet the requirements of the "Statement of Work", (Article I, Part III, A. Objectives, B. Technical Knowledge, and C. Statement of Work). Technical Assistance shall be provided for the typical Task Order requirements as specified under E. Reporting will be in accordance with Article I, D, and/or as further required by NRC-IE.

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General:

1. About the Firm:

PARAMETER, Inc. was chartered in August of 1964 as a Wisconsin Corporation with a nucleus of personnel from the A. O. Smith Corporation former Advanced Design (Nuclear) Engineering Group. Messrs. Richard A. Lofy and Walter J. Foley, the founders, remain as managing co-owners and active, full-time members of the technical staff.

The firm was organized with the objective of offering the staff's strong background in Design and Analysis of Naval nuclear apparatus and industrial equipment to both the government and commercial markets.

While expanding its office space and activities during seventeen years, PARAMETER has remained in Elm Grove, Wisconsin (near Milwaukee), and has completed a wide variety of design, analysis, and prototype construction projects for the clients listed under Item 4.

In 1966, PARAMETER, Inc. obtained a consulting contract for the then Regulatory Organization of the AEC. An interdisciplinary outside team of consultants was also assembled to provide Regulatory with a variety of expertise, on call for various nuclear plant design and construction problems. Until the present, the PARAMETER staff and its consultants have participated in over one hundred and fifty assignments for the now Inspection and Enforcement organization within NRC. Many of these assignments involved assessment of as-fabricated, as-installed nuclear plant hardware, and almost always required site and/or A/E visits. Many of these assignments were directly involved with nuclear plant piping and its support systems. Where analysis was required, it was performed by the same team proposed for this project. Other assignments included reactor pressure vessel inspections and analysis, quality assurance audit participation, metallurgical investigations, and a wide variety of miscellaneous consultation. In some instances, including a nuclear piping installation "state-of-the-art" study, PARAMETER participated in presentations with the NRC staff before the Advisory Committee for Reactor Safeguards.

TP-28
RM-28

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1. About the Firm: (con't.)

More recent areas of activity for NRC-IE have included manning of the NRC's east coast NDE van, metallurgical examination of radioactive components, and independent physical test programs. The Parameter Staff and some subcontractors are also engaged in licensee accountability and technical response evaluation in connection with NRC's closeout program for OIE generated Bulletins pertaining to generic nuclear plant questions.

The firm's historic record of technical support for NRC-OIE is contained in the task listing of Appendix-A to this proposal.

Parameter's larger mechanical design and analysis projects during the past 10 years have included:

- Design and construction of a Reactor Pressure Vessel Inservice Examination System.

- Design and construction of ten separate remote controlled machine systems for disarming and disposal of ammunition for Army/Navy demilitarization facilities.

- Design and fabrication of three separate core structure handling, shielding and storage facilities for commercial nuclear plants.

- Design and construction of special tooling for nuclear core component remote repair.

- Code and Seismic Analysis of final heat sink condensers for Clinch River Breeder Reactor.

- Design and development of in-place nozzle machining and assembly tools for the CRBRP pressure vessel.

PARAMETER's capabilities and areas of experience are best described briefly by our regular Professional Card listing which appears below:

Parámeter, Inc.
CONSULTING ENGINEERS
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1. About the Firm: (con't.)

Parámeter, Inc. Since 1964

PROFESSIONAL ENGINEERING SERVICES

• Mechanical Design	CUSTOM INDUSTRIAL EQUIPMENT, NUCLEAR COMPONENTS PRESSURE VESSELS, HEAT EXCHANGERS, PIPING, HEAVY HANDLING APPARATUS, SPECIAL PURPOSE TOOLS
• Stress Analysis	MECHANICAL & THERMAL - DYNAMIC SHOCK, VIBRATION, SEISMIC, HEAT FLOW, TRANSIENTS FATIGUE, COMPUTER SOLUTIONS - FINITE ELEMENT, ASME/MILITARY/ANSI CODES
• Contracting	AQUISITION OF ORIGINAL HARDWARE DESIGNED FOR CLIENTS - PRECISION TOOLS, FABRICATIONS, STRUCTURES, COMPLETE SYSTEMS
• Independent Review	QUALITY ASSURANCE AUDIT OF PROJECTS FROM CONCEPT THROUGH WORKING DRAWINGS AND AS-BUILT CONSTRUCTION

Our overall historical volume of work for clients listed under 4. following, has been over 50% in the nuclear area. Additional detailed information on specific capabilities, experience and past projects can be supplied upon request.

TP-30
BM-30

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2. PARAMETER, Inc. Work Procedures:

This section is to state the ongoing policies of the firm in controlling the quality of all engineering work for clients, generally taking the form of drawings and reports.

For specific client projects, the Engineering Quality Assurance Program document is implemented through a Project Quality Plan. Such a plan, PQP-105, has been prepared for use on prospective NRC work and is included in the Q/A Supplement.

TP-31
BM-31

Parameter, Inc.
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2. PARAMETER, Inc. Work Procedures: (con't.)

(6. con't.) NRC's comments and recommendations on both the Engineering Quality Assurance Program document PAR: Q/A-1, and the NRC Task Project Quality Plan, PQP-105, are invited. Revisions can be made and auxiliary plans developed to meet the NRC'd developing and ongoing requirements.

TP-32
BM-32

Parameter, Inc.
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3. Resources and Business Information:

a. PARAMETER, Inc. is registered to practice engineering as a Corporation by virtue of the Professional Engineering registration of its Principals and Senior Staff. The firm holds Wisconsin Certificate of Authorization No. CE00111.

b. PARAMETER, Inc. holds DOD and DOE Facility Clearances. All regular full-time personnel and key consultants have been cleared to DOD Secret and DOE "L" levels.

c. The firm has established diversified sources for construction of models, test hardware, and prototype equipment of original design for our clients. These sources have been used occasionally on NRC tasks for sectioning and radiography of metallurgical specimens from large piping components to be subsequently examined metallurgically. Facilities for shop operations on contaminated components can be arranged. Parameter, Inc. is prepared to continue to make arrangements to handle the unique and sometimes unpredictable requirements of NRC tasks.

d. PARAMETER, Inc. has contracts with

for computer services in support of our analysis. Through these organizations and others that are available, we have access to most programs in use in design of nuclear systems today. Computer programs are also available through the

as the project might require.

e. Counsel for the firm is Frisch, Dudek and Slattery, Ltd., Attorneys at Law, 825 North Jefferson, Milwaukee, WI 53202.

f. Accountant for the firm is

g. A telecopier service, compatible with USNRC machines is maintained. Blueprint and copy facilities are in-house.

h. A technical library is maintained by the firm for its general design work and Code and specification reference.

TP-33
BM-33

Parameter, Inc.
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3. Resources and Business Information: (con't.)

i. PARAMETER, Inc. certifies that it has the necessary financial capacity, working capital and other resources to perform the contract without assistance from any outside source.

Certified Current Financial Statements are available to the USNRC upon request.

j. Our D-U-N-S No. is: 07-115-1294

TP-34
BM-34

Kramer, Inc.
CONSULTING ENGINEERS
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4. Clients We Have Served:

RFP: RS-

WISCONSIN

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4. Clients We Have Served:

WISCONSIN

TP-35
BM-35

Parámeter, Inc.
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5. Q/A Supplement: (following this page)

Quality Assurance Program for
Engineering Design, Analysis
and Testing on ASME Code and
Other Quality Documented Projects

PAR: Q/A-1, Rev. 3, 3/30/82 — See Notes 1 & 3

(Uncontrolled Copy)

Trial Project Quality Plan (PQP)
for Technical Assistance to Support
NRC-IE Personnel in the Investigation
of Incidents

PQP-105, Rev. 0, 4/1/82 — See Notes 2 & 3

Notes:

1.) The PAR: Q/A-1 document is appended as an Uncontrolled Copy in this proposal and will be submitted formally in connection with any resulting contract.

2.) PQP-105 is issued on a trial basis for purposes of this proposal. Formal PQP(s) will be developed as applicable to Task(s) assigned under any resulting contract.

3.) NRC comment and suggestions on the form and content of both documents are invited with respect to application of the Program and Plan to a prospective contract.

TP-36
BM-36

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PARAMETER, Inc.

Quality Assurance Program

for

Engineering Design, Analysis and Testing

on

ASME Code

and other

Quality Documented Projects

Rev. No.	Issue Date
3	3-30-82
2	10-15-80
1	2-15-80
0	4-15-78

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RECORD OF REVISIONS

Revision	Date	Description	Issued by/Concurrence (signature)
0	4/15/78	Initial Issue	
1	2/15/80	Added Subsection 19.3, Page 12	
2	10/15/80	Changed Subsection 4.2 to 4.1.20 and added 4.2, 4.3 and 4.4, Page 10	
3	3/30/83	Added Section 8.0; amplified Section 1.0 and Subsection 3.4 to clarify control of subcontractors and consultants; included "testing" on cover sheet	

REFERENCES

1. Parameter, Inc. "Technical Prospectus"

   Containing: Scope of Activity
   Client Listing
   Background of Firm
   Staff and Consultant Capabilities
   Resumes
   Reference Project Number

   (Issue Date and Contents specified for individual Projects in PQP)

2. ASME Boiler and Pressure Vessel Code
   (Sections as applicable and specified in PQP)*

3. ANSI Quality Assurance Requirements for
   Nuclear Power Plants, ANSI 45.2-1971

* Project Quality Plan

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PARAMETER, Inc.

Trial Project Quality Plan (PQP)
for
Technical Assistance to Support
NRC-IE Personnel
in the
Investigation of Incidents

Prepared for:

Division of Engineering and
Quality Assurance
Office of Inspection & Enforcement
U.S. Nuclear Regulatory Commission

PAR: NRC-IE-82/83

0	4/1/82
Rev. No.	Issue Date

Record of Revisions

Revision	Date	Description	Issued by/ Concurrence
0	4/1/82	Initial Issue	

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APPENDIX A

to

Technical Proposal

List of Task Assignments for NRC-OIE

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LIST OF TASK ASSIGNMENTS FOR NRC PERFORMED BY PARAMETER, Inc. STAFF AND CONSULTANTS

Task/Report No. & Date	Task Assignment/Contributor(s)
Task-18 (11/81)	Expert Testimony Preparatory to and at Final Licensing Hearing for Callaway Nuclear Power Plant, St. Louis, Missouri (W. R. Rutherford).
Task-17 IE-125 (12/10/81)	Failed Studs from Main Steam Isolation Valves at D. C. Cook, Unit 2, American Electric Power Co. (T. L. Proft, Technimet Corporation).
Task-13 IE-126 (1/82)	Closeout of IEB 80-21, Valve Yokes Supplied by Malcolm Foundry Company, Inc. (Parameter Staff) (preliminary report).
Task-11 IE-127 (3/82)	Closeout of IEB 80-05, Vacuum Conditions Resulting in Damage to Chemical Volume Control System Holdup Tanks (Parameter Staff) (preliminary report).

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LIST OF TASK ASSIGNMENTS FOR NRC PERFORMED BY PARAMETER, Inc. STAFF AND CONSULTANTS

Task/Report No. & Date	Task Assignment/Contributor(s)
Task-08	Nondestructive Examinations of Nuclear Power Facilities.
(9/81)	Zimmer Plant, Moscow, Ohio, RT, UT, MT, PT and other examinations specified by NRC (K. A. Ristau, Parameter and K. Grevenow, C. Patzer, Wisconsin Industrial Testing, utilizing NRC van).
(11/81)	WNP-3, Elma, Washington, Sonic Testing of Concrete (Construction Engineering Consultants, Inc., Joe Artuso with W. P. Port of Parameter).
(2/82)	Beaver Valley, Unit 2, Shippingport, Pennsylvania, RT, UT, MT, PT and materials property tests specified by NRC (K. Grevenow, C. Patzer, Wisconsin Industrial Testing, utilizing NRC van).
(3/82)	Limerick, Pottstown, Pennsylvania, RT, UT, MT, PT and materials property tests specified by NRC (K. Grevenow, C. Patzer, Wisconsin Industrial Testing, utilizing NRC van).
Task-07 (7/81)	Nondestructive Examination (RT, UT, MT, PT, etc.) on Neutron Shield Tank for Beaver Valley Nuclear Plant, Unit 2, Duquesne Light Co. (K. A. Ristau, Parameter and K. Grevenow, C. Patzer, Wisconsin Industrial Testing).

Parameter, Inc.
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LIST OF TASK ASSIGNMENTS FOR NRC PERFORMED BY PARAMETER, Inc. STAFF AND CONSULTANTS

Task/Report No. & Date	Task Assignment/Contributor(s)
IE-124 (6/25/81) Task-02	"Review of the Evaluation of Concrete at Marble Hill Nuclear Generation Station, Units 1 and 2", Rolland C. Hamm and Alfred L. Parme, Parameter Consultants.
IE-123 (4/17/81) Task-03	"Metallurgical, Stress and Fracture Mechanics Analyses of Cracked Steam Generator Manway Studs from Oconee Unit 3 of Duke Power Company", Battelle Columbus Laboratories (V. Pasupathi, D. R. Farmelo and E. O. Fromm) and L. H. Burck, Parameter Consultant.
IE-122 (2/3/81) Task-06	"Independent Nondestructive Examination of the Reactor Vessel Lower Shell, Stub Tube, and Conduit Welds from Indian Point Unit 2 of Consolidated Edison Company of New York", Peabody Testing Services (E. J. Bielecki)and K. A. Ristau, Parameter Consultant.
IE-121 (12/8/80) Task-05	"Metallurgical Analysis with Attachment-A, Stress Analysis of Failed Steam Generator Support Bolts from Prairie Island, Unit-1 of Northern States Power Co.,", Technimet Corporation (Thomas L. Proft).
IE-120 (9/9/80) Task-04	"Metallurgical Analysis of Failed Turbine Casing Bolt from Arkansas Power & Light, Unit 1", Technimet Corporation (Thomas L. Proft).

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LIST OF TASK ASSIGNMENTS FOR NRC PERFORMED BY PARAMETER, Inc. STAFF AND CONSULTANTS

Task/Report No. & Date	Task Assignment/Contributor(s)
IE-120 (11/15/79) Task-07	"Results of Independent Radiographic Examination of Weld Seam in Containment Vessel Dome Section at Washington Nuclear Project No. 3 (WNP-3) of Washington Public Power Supply System, Satsop/Elma, Washington", K.A.Ristau (with G.McManus of McManus Inspection Service)
IE-119 (9/28/79) Task-06	"Results of Hardness Testing and Metallurgical Examination on Feedwater Pipe Welds at Washington Nuclear Project No. 2 (WNP-2)", M.E.Suess

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Task/Report No. & Date	Task Assignment/Contributor(s)
IE-118 (1/80) Task-05	"Report of Metallurgical Examination of Cracked Feedwater Pipe Sections Removed from San Onofre, D. C. Cook #2, H. B. Robinson and Beaver Valley", S. Weiss, L.H.Burck
IE-117 (2/2/79) Task-04	"Report of the Investigation of Kansas Gas & Electric Company Study of the Low Concrete Cylinder Strengths of the Reactor Containment Building Base Mat of Wolf Creek Generating Station, Unit No. 1 Located Near Burlington, Kansas", R.C.Hamm
IE-116-B (8/79) Task-03R	"Evaluation of Stresses in Recirculation Inlet Nozzle Safe-End at Brunswick Steam Electric Plant, Units 1 and 2 of Carolina Power and Light Co.", R.S.Dean, L.E.Vlies
IE-116 (3/16/79) Task-03	"Metallurgical Examination and Stress Evaluation of Recirculation Inlet Nozzle Safe-End Cracking at Duane Arnold Energy Center, Iowa Electric Light & Power Co.", S.Weiss, R.S.Dean, Battelle Columbus (V.Pasupathi, G.P.Smith, D.R.Farmelo, J.S.Perrin)
IE-115 (4/14/78) Task-02	"Report of Fastener Testing Project for Nuclear Regulatory Commission, Region V, Samples from San Onofre Nuclear Generating Station, Units 2, 3 of Southern California Edison Company, San Clemente, California", R.N.Sutphin, Jr.
IE-114 (no task assigned)	Inquiry Regarding Evaluation of Paint in Salem Containment. (Consultant Arthur Stander contacted directly by NRC, Region I)
IE-113 (no task assigned)	Proposal Work for "Feasibility Study of Conducting Independent Non-Destructive Examinations (NDE) of NRC-Licensed Facilities

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LIST OF PREVIOUS TASK ASSIGNMENTS FOR NRC (AND FORMER AEC REGULATORY ORGANIZATION) PERFORMED BY PARAMETER, Inc. STAFF AND CONSULTANTS

Task/Report No. & Date	Task Assignment/Contributor(s)
IE-112 (9/76-10/76)	"Effort in Support of Planning Direct Nondestructive Examination by NRC (for Ultrasonic Testing of Piping at VEPCO-North Anna, Unit -1)", R.A.Lofy
IE-111 (6/76-10/76)	"Effort in Support of Feasibility Determination for Direct Nondestructive Examination by NRC, (Radiography of Licensee Plant Piping)", R.A.Lofy, K.Ristau
IE-110 (5/6/76)	"Report of Torus Corrosion at Oyster Creek Station", S.Weiss
IE-109 (8/15/76)	"Review of NRC Program Plan for Architect Engineer Inspection Program", R.A.Lofy
DC-108 (12/20/74)	"Report of Evaluation of Damage to Feedwater Piping due to Motion Resulting from Water Hammer at Dresden -3", R.A.Lofy, R.S.Dean
DC-107 (no report)	
DC-106 (3/30/74)	"Report of Participation in Inspection and Review of Experimental Analysis on Vibration of Main Steam Lines at Turkey Point, Units -3 & -4", R.A.Lofy, R.S.Dean
DC-105 (8/17/73)	"Preliminary Review of Feedwater Sparger of Millstone Unit -1 of Northeast Utility Service Company (NUSCO)", R.A.Lofy, W.J.Foley

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Task/Report No. & Date	Task Assignment/Contributor(s)
DC-104 (3/30/73)	"Report of Review of Replies to AEC Questions by Consolidated Edison on Indian Point Unit -2 Safety and Relief Valve Installation Reanalysis", R.A.Lofy, W.J.Foley
DC-103 (2/5/73)	"Report of Inspection of Pressurizer Relief and Safety Valve Piping Support Modifications on Surry -1 - 1/12/73 and 1/19/73", R.A.Lofy
DC-102 (9/23/75)	"Report of Evaluation of Stresses at Main Steam Header Safety Valves of Palisades Plant, Convert Township, Michigan", R.A.Lofy, W.J.Foley, R.S.Dean
DC-101 (9/7/72)	"A Metallurgical Review of Surface Defects in Extruded Tubing Fabricated by Sandvik Steel Works", R.G.Gilliland
DC-100 (8/31/72)	Letter Report: "Report of Meeting with Consolidated Edison, New York, August 18, 1972 Review of Piping Stresses Due to Pressurizer Safety Valve Discharge on Indian Point, Unit -1", R.A.Lofy
DC-99 (8/16/72)	"Inspection of Pipe Support Damage and Repair on Main Steam Lines at Pilgrim Station of Boston Edison Company, August 9, 1972", R.A.Lofy
DC-98 (6/22/72	"Report of Preliminary Investigation - Failure of Hanger Bolts on Suppression Chamber Suction Header at Quad Cities Nuclear Station, Unit -2, Commonwealth Edison Company, Iowa-Illinois Gas and Electric Company, Rock Island, Ill.", R.A.Lofy, W.J.Foley

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Task/Report No. & Date	Task Assignment/Contributor(s)
DC-97 (6/26/72)	"Preliminary Investigation of Sticking Reactor Control Clusters at Indian Point -2 Generating Station, Consolidated Edison Company, Buchanan, New York", R.A,Lofy
DC-96 (5/4/72)	"Evaluation of Modifications to Steam Generator Support Shoes and Reactor Vessel Support Ring at Indian Point Generating Station Unit -2, Consolidated Edison Company, Buchanan, New York", PARAMETER Staff
DC-95 (5/30/72	"Preliminary Report - Evaluation of Pressurizer Safety Valve Piping under Discharge Conditions on Robert E. Ginna Nuclear Power Station, Rochester Gas & Electric Company, Ontario, New York", R.A.Lofv
DC-94B (5/3/72)	"Resolution of Findings Identified in PARAMETER Report DC-94A on Review of Incident Report, Turkey Point, Unit -3, December, 1971, and Revision March 8, 1972 by Florida Power & Light Company", W.J.Foley, R.A.Lofy
DC-94A (3/8/72)	"Review of Incident Report, Turkey Point Unit -3 Safety Valve Headers, December, 1971 by Florida Power & Light Company, Dade County, Florida", W.J.Foley,R.A.Lofy
DC-94 (12/15/71)	"Preliminary Report - Analysis of Failed Safety Valve Header in Main Steam Line "A", Turkey Point, Unit -3, Florida Power & Light Company, Dade County, Florida", W.J.Foley, R.A.Lofy

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Task/Report No. & Date	Task Assignment/Contributor(s)
DC-93 (2/9/72)	"Report of Participation in Team Inspection of Hitachi, Ltd. (Japan) Quality Assurance Program and Design of Reactor Pressure Vessel for Newbold Island No. 1 Generating Station, Public Service Electric and Gas Company of New Jersey", R.A.Lofy
DC-92A (11/18/71)	"Review of the Results of the Southwest Research Institute Examination Concerning the LACBWR Stud Failure", R.G.Gilliland
DC-92 (9/27/71)	"A Metallurgical Review and Evaluation of Vessel Head Stud Failures in the LACBWR Reactor System", R.G.Gilliland
DC-91 (no report)	"Review of Micro Fissuring of Welds at Maine Yankee", S.Weiss
DC-90 (6/23/71)	Letter Report: "Review of Part 50 Change Concerning Sensitized Stainless Steel", R.G.Gilliland
DC-89 (6/23/71)	"Report on Inspection of Leaks and Cracks in the (A) Steam Generator at H.B. Robinson II", S.Weiss
DC-88 (no report)	"Consultation of Reactor Vessel Nozzle Welding Problems", S.Weiss
DC-87A (8/17/71)	"Scanning Electron and Microprobe Analysis of Metallurgical Boat Samples Taken from a Nine Mile Point Safety Valve Nozzle", R.G.Gilliland
DC-87 (5/10/71)	"Metallurgical Review of the Results of the In-Service Inspection Conducted at the Nine Mile Point Nuclear Power Station", R.G.Gilliland

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Task/Report No. & Date	Task Assignment/Contributor(s)
DC-86 (5/20/71)	"Participation in Quality Control Team Inspection at Fort St. Vrain Nuclear Generating Station, Public Service Company of Colorado, Platville, Colorado, April 19-23, 1971", R.A.Lofy
DC-85B (7/19/71)	"Review of Audit of Welding and Nondestructive Testing Procedures Surry Nuclear Stations -I and -II Virginia Electric and Power Company SwRI Progress Report No. 1 (SwRI Project 17-3078) by P. D. Watson and S. A. Wenk. dated May 27, 1971", S.Weiss
DC-85 (4/30/71)	"Review of April 20, 1971 Meeting in Bethesda on 316 SS Weld Micro-fissures Surry -1, Virginia Electric & Power Company", S.Weiss
DC-84 (4/29/71)	"Review of Recirculation Loop Valves for Pilgrim Power Station", W.J.Foley
DC-83 (no report)	"Metallurgical Analysis of Dresden -I Crack Samples", R.W.Staehle
DC-82 (no report)	Letter - 5/17/71 "Treatment of Dynamic Flow Effects in Design-Analysis of Nuclear Power Piping Systems", W.J.Foley, R.A.Lofy
DC-81 (12/11/70	Trip Report - "Inspection of Reactor Feed Pump Impeller Failures at Monticello Nuclear Plant, Monticello, Minnesota Northern States Power Company", R.S.Dean
DC-80 (1/30/71) Rev.-1,2/22 Rev.-2,3/15	"Review of Piping Stresses and Support Systems at Indian Point Unit -2 Buchanan New York January 20/21, 1971 Consolidated Edison Company", R.A.Lofy

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Task/Report No. & Date	Task Assignment/Contributor(s)
DC-79 (no report)	
DC-78 (10/2/70)	"Review of Bellows/Containment Installation Welds for Main Steam Penetrations", R.A.Lofy
DC-77 (slides) (8/14/70)	Presentation at ACRS Meeting - "Review of Piping Systems Stresses and Installation", R.A.Lofy
DC-76 (8/22/70)	"Review of Piping Stresses and Support Systems at Dresden -2 - Morris, Illinois - Commonwealth Edison Company, July 30, 1970" R.A.Lofy
DC-75 (no report)	"Consultation on Thermal Stresses", R.A.Lofy,W.J.Foley
DC-74 (8/7/70)	"Review of Piping Stresses and Support Systems at H. B. Robinson No. 2 - Hartsville, S.C., Carolina Power and Light Company, June 29-30, 1970", R.A.Lofy
DC-73 (7/1/70)	"Report of Inspection of Structural Integrity Test of Point Beach Nuclear Power Plant Unit No. I - Containment Structure - Wisconsin Michigan Power Company - June 22/23, 1970", L.L.Kessler
DC-72 (no report)	"Consultation at ACRS Meeting", R.G.Gilliland, R.W.Staehle
DC-71 (no report)	"Consultation at ACRS Subcommittee Meeting", R.W.Staehle

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Task/Report No. & Date	Task Assignment/Contributor(s)
DC-70 (6/15/70)	"A Metallurgical Evaluation of Failures in the Primary Sodium Service Lines at the Enrico Fermi Atomic Power Plant (Power Reactor Development Company)", R.G.Gilliland
DC-69 (6/11/70)	"Metallurgical Review and Analysis of Reactor Component Failures at the Connecticut Yankee Atomic Power Station (Connecticut Yankee Atomic Power Company)", R.G.Gilliland
DC-68 (7/17/70)	"Review of Installed Piping Hanger Systems and Piping Stress at Millstone Point - Unit -1 - Northeast Utilities Service Company, June 17-18, 1970", R.A.Lofy
DC-67 (5/23/70)	"Report on Design and Stress Evaluation of Failed Main Steam Safety Valve Nozzle - H. B. Robinson No. 2 - Carolina Power and Light Company", R.A.Lofy, W.J.Foley
DC-66 (11/70)	"Consultation and Testimony for Licensing Hearing on Monticello Nuclear Generating Plant, Minneapolis, Minn.", R.A.Lofy
DC-65b (5/27/70)	"Continued Review and Analysis of the Reactor Primary System at Nine Mile Point Nuclear Station - Report No. 2 (Niagara-Mohawk Power Company)", R.G.Gilliland
DC-65 (3/5/70)	"Examination and Evaluation of Safe End from Nozzle N6B on Nine Mile Point Reactor (Niagara-Mohawk Power Company)", R.W.Staehle
DC-64 (4/10/72)	"Inspection Guide for Post-Tensioned Prestressed Concrete Containment Structures", R.C.Hamm, L.L.Kessler

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Task/Report No. & Date	Task Assignment/Contributor(s)
DC-63 (2/2/70)	"Evaluation and Analysis of Repair Welding of a Pump Casting in the Millstone LPCI System (Northeast Utilities Services Company)", R.G.Gilliland
DC-62 (3/23/70)	"A Metallurgical Evaluation of the Repair Procedures Used in the LACBWR Feedwater Piping System (Dairyland Power Coop. - USAEC)", R.G.Gilliland
DC-61 (2/23/70) Rev. 0	"Review of Design Modifications to Steam Generators for Fort St. Vrain Nuclear Generating Station as part of Quality Control Inspection at Gulf General Atomic/Stearns-Rogers/General Iron Works/facilities - January 12 through 16, 1970 (Public Service Co. of Colorado)", R.A.Lofy, W.J.Foley
DC-60a (4/2/70)	"Supplementary Review - CRDM Closure: Flange Bolt Analysis, Omega Seal Analysis and Materials Test Reports - Palisades Nuclear Power Plant - Consumers Power Co.", R.A.Lofy, W.J.Foley
DC-60 (12/5/69)	"Review of CRDM to Reactor Vessel Seal Welds for ASME Section -III Code Conformance Palisades Nuclear Power Plant - Consumers Power Company - November 24 and 25, 1969", R.A.Lofy, W.J.Foley
DC-59 (12/22/69)	"Letter Report to R. T. Carlson from H. A. Sosnin - Comments on Quality Assurance Inspection of Pipe Welding at Indian Point Station - Unit -2 - Consolidated Edison Company", H.A.Sosnin
DC-58 (no report)	(Assignment cancelled)

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DC-57 (11/7/69)	"Visit to the Crane Company - Chapman Valve Division, Radiographic Audit of the Recirculating Valves in Various BWR Reactor Systems", R.G.Gilliland
DC-56 (5/7/70) Rev.-1	"Report of Inspection for Construction Verification and Structural Integrity Test of Palisades Nuclear Power Plant Containment Structure - Consumers Power Company - March 22 through March 27, 1970", L.L.Kessler
DC-55 (no report)	"Welding Inspection Seminars January 26-30, 1970 March 30-April 13, 1970, White Plains, N.Y.", H.A.Sosnin
DCL-54 (11/2/69)	"Review of DOC-2367-04(12) Nuclear Reactor Pressure Vessel Transportation Incident, Point Beach Unit -1 - Wisconsin Michigan Power Company", W.J.Foley, R. A. Lofy, R.S.Dean
DC-53 (7/30/69)	"Memo Report on Commercial Quality of Austenitic Stainless Steel Valve Body Castings", J.L.Campbell
DC-52 (1/19/70)	"Letter Report to D. Pomeroy from Dr. R. W. Staehle - Discussion of Contamination of Nuclear Plant Hardware by Pesticides, Chlorides, and Fluorides, and Hydrochloric Acid Pickling", R.W.Staehle
DC-51 (7/8/69)	"Effect of Stress Relief Heatup Rates of Steam Line Field Welds (Nine Mile Point Station - Niagara-Mohawk Power Company)", W.J.Foley

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DC-50 (7/7/69)	"A Metallurgical Analysis of Temperature Indicators Used for Temperature Control During the Welding of Stainless Steel and Nickel-Bearing Alloys", R.G.Gilliland
DC-49a (9/17/69)	"Letter to H. D. Thornburg - Comments on Code Interpretation of Steam Flow Restrictor Nozzles for Dresden, Unit -2 (Commonwealth Edison Co.)", R.A.Lofy
DC-49 (7/23/69)	"Report of Further Review of Steam Flow Restrictor Nozzles for Dresden, Unit -2", R.A.Lofy, W.J.Foley, R.G.Gilliland
DC-48 (7/2/69)	"Report of Inspection of Class -I Piping Support Systems for Nine Mile Point Nuclear Station - Niagara Mohawk Power Company, Oswego, New York", R.A.Lofy
DC-47 (6/21/69)	"Report of Quality Assurance Inspection of Low Pressure Safety Injection System on Robert E. Ginna Nuclear Power Station - Rochester Gas and Electric Company, Ontario, New York", R.A.Lofy
DC-46 (6/6/69)	"Report of Participation in Intensive Quality Assurance Inspection by Region -III, Division of Compliance, of Palisades Nuclear Plant Containment Structure - Consumers Power Company, South Haven, Michigan", L.L.Kessler
DC-45a (8/3/69)	"Report on Field Trip and Inspection of Concrete Deficiencies in Reactor Foundation Pad, Reactor Building Substructure Walls and HPCI Room Mat of Cooper Nuclear Station, Boiling Water Reactor, 800,000 Kilowatts, Brownville, Nebraska (Consumers Public Power District)", R.C.Hamm

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DC-45 (5/21/69)	"Report on Field Trip and Inspection of Concrete Deficiencies in Reactor Foundation Pad, Reactor Building Substructure Walls and HPCI Room Floor of Cooper Nuclear Station", R.C.Hamm
DC-44 (6/2/69)	"Report of Participation in Intensive Quality Assurance Inspection by Region -III, Division of Compliance on Palisades Nuclear Power Plant, Consumers Power Company, South Haven, Michigan", R.A.Lofy
DC-43 (6/10/69)	"A Metallurgical Evaluation of Outstanding Quality Control Issues Relating to Construction Welding Problems at Nine Mile Point Nuclear Station (Niagara-Mohawk Power Company)", R.G.Gilliland
DC-42 (dates as filed)	Activity File - "Evaluation of Piping and Valve Quality Assurance Problems on Oyster Creek Unit -I (Jersey Central Power and Light)", R.A.Lofy
DC-41 (5/2/69)	"Introductory Visit and Preliminary Inspection of Post Tensioning of Reactor Shield Building for Palisades Plant (Consumers Power)", L.L.Kessler
DC-40a (10/22/69)	"Report on Review of Report of Damage Caused by Fire on March 31, 1969 and Repair of Fire Damaged Structure (Including Addendum to Appendix C, dated August 29, 1969, and Appendix E, dated October 15, 1969) and Meetings on August 1, 1969, at Pioneer Service & Engineer Co., and on August 29, 1969 at Plant Site All Relating to Class -I Area of Turbine Building of Prairie Island Nuclear Generating Plant (Northern States Power Company)", R.Hamm

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DC-40 (5/7/69)	"Report on Field Trip and Inspection of Fire Damage to Class -I Area of Turbine Building for Prairie Island Nuclear Generating Plant (NSP)", R.Hamm
DC-39 (4/11/69)	"Metallurgical Assistance in Non-Conformance Problems at the Robert Emmett Ginna Nuclear Power Station No. -1 (Rochester Gas and Electric Company)", R.G.Gilliland
DC-38 (4/10/69)	"Bottom Head and Shipping Ring Deviations of PWR No. -3 for FP&L (Florida Power & Light) Turkey Point Plant", W.J.Foley
DC-37 (no report)	(Assignment Cancelled)
DC-36 (3/18/69)	"Inspection and Evaluation of Dye Penetrant Indications in the Nozzle Safe-Ends of the Millstone Unit -I Reactor Vessel", R.G.Gilliland
DC-35 (4/7/69)	"Proposed Repair of Control Rod Drive Piping for TVA-Brown's Ferry BWR's", W.J.Foley
DC-34a (4/15/69)	"Discussion of Dropped Point Beach Reactor Vessel at Wisconsin - Michigan Power Company", W.J.Foley
DC-34 (3/27/69)	"Site Investigation of Dropped Point Beach Reactor Vessel", W.J.Foley
DC-33 (3/20/69)	"Report of Participation in Intensive Quality Assurance Audit by Region -III Division of Compliance for Dresden, Unit -2, Commonwealth Edison Company, Morris, Illinois", R.A.Lofy

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DC-32 (2/28/69)	"Evaluation of the Welding and Inspection Techniques for the Repair of the Bottom Plate Weld in the Point Beach Reactor Containment Membrane (Wisconsin-Michigan Power Company)", R.G.Gilliland
DC-31 (3/3/69)	"Metallurgical Examination and Review of Casting Defects in the Stainless Steel Valve Bodies Located in the Class -I Systems of the Oyster Creek Reactor (Jersey Central Power & Light)", R.G.Gilliland
DC-30a (3/12/69)	"Inspection and Evaluation of the Welding Fabrication Procedures and Tests for the Dresden Unit -2 Nuclear Power Station - Second Report - (Commonwealth Edison Company)", R.G.Gilliland
DC-30 (2/6/69)	"Inspection and Evaluation of the Welding Fabrication Procedures and Tests for the Dresden Unit -2 Nuclear Power Station - Initial Report", R.G.Gilliland
DC-29 (1/26/69)	"Report on Failure of Normal Station Power Sources at Humbolt Bay Power Generating Plant - Pacific Gas and Electric Company", T.J.Gaines
DC-28 (1/23/69)	"Metallurgical Investigation of a Defective Nozzle Extension in the Primary Cooling System of the Elk River Reactor - Rural Cooperative Power Association", R.G.Gilliland
DC-27 (1/6/69)	"Metallurgical Analysis of a Leak in the Primary Cooling System of the Elk River Reactor - Rural Power Cooperative Association", R.G.Gilliland

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DC-26 (12/31/6)	"Report on Emergency Power Failure - Connecticut Yankee Generating Plant, (Conn. Yankee Atomic Power Co.)", T.J.Gaines
DC-25 (12/30/68)	"Report on Evaluation of As-built Construction of Reactor Shield Building for Prairie Island Nuclear Generating Plant (NSP)", R.C.Hamm
DC-24 (10/25/68	"Stress Review of As-built Vessel Flange for Dresden -II Reactor Commonwealth Edison", W.J.Foley
DC-23 (8/6/68)	"Visit to CB&I, Oak Brook, Illinois to Discuss and Review Inconel Stub Tubes for Monticello Reactor (NSP)", J.J.Chyle
DC-22 (7/13/68)	"Report on Field Inspection of Pressure Vessel for Northern States Power Company Monticello Nuclear Generating Plant", R.A.Lofy
DC-21 (2/31/68)	"Stress Review of Recirculation Loops of SEFOR Reactor Vessel", W.J.Foley
DC-20 (7/19/68)	"Stress Review of Recirculation Loops of Oyster Creek BWR for Jersey Central Power & Light", W.J.Foley
DC-19 (no report)	"Study related to Stub Tube Shop Weld Cracking - Oyster Creek Vessel, Jersey Central Power & Light", R.A.Lofy, W.J.Foley, J.J.Chyle
DC-18 (2/5/68)	"Report of Meeting on Northern States Power Company Monticello Plant (at Bethesda Md. January 25, 1968)(Review of vessel fabrication progress and problems)" R.A.Lofy, J. J. Chyle

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DC-17 (1/22/68)	"Report on Trip to Dresden (1) Nuclear Plant - October 24, 1967 - Report on Conference with Commonwealth Edison - November 27, 1967 - Meeting (Review of Investigation of Cracking in stainless steel piping on Dresden -I)", J.J.Chyle
DC-16 (12/27/67)	"Report on Visit to Nine Mile Point Station of the Niagara Mohawk Power Company on December 4, 1967 (Discussion of welding of the control rod housing to stub tube field welds)" J.J.Chyle
DC-15 (1/8/67)	"Stress Analysis Discussion of Stub Tubes for Oyster Creel BWR for Jersey Central Power and Light", W.J.Foley
DC-14 (12/18/67)	"Activity Report - Quality Control Investigation of Critical Piping Systems for Oyster Creek BWR - Jersey Central Power and Light", R.A.Lofy
DC-13 (10/30/67)	"Review of Nondestructive Testing Results Pathfinder (NSP) Atomic Power Plant Recirculation Loop No. 12", A.F.Cota
DC-12 (10/12/67)	"Report of Visit to Babcock & Wilcox Mt. Vernon Works - Inspection of Westinghouse PWR Vessel for Rochester Gas & Electric Company", R.A.Lofy
DC-11 (9/13/67)	"Report of Visit to Chicago Bridge and Iron Company, Birmingham, Ala. Plant - Inspection of General Electric BWR Vessels for NSP - Monticello and Vermont Yankee", R.A.Lofy

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JJC-102	"Report of Visit to Babcock & Wilcox Barberton, Ohio, July 25, 1967 (Meeting on Electroslag Welding of Reactor Pressure Vessels)", J.J.Chyle
DC-10 (8/7/67)	"Report of Visit to Babcock & Wilcox Barberton, Ohio, July 25, 1967, Meeting on Electroslag Welding", R.A.Lofy
DC-9 (8/4/67)	"Report of Visit to Babcock & Wilcox Mt. Vernon Works - Inspection of General Electric BWR Vessel for Dresden -II (Commonwealth Edison Company)", R.A.Lofy
DC-8 (7/31/67)	"Report of Visit to Babcock and Wilcox Mt. Vernon Works - Inspection of Westinghouse PWR Vessel for Rochester Gas & Electric", R.A.Lofy
JJC-101 (6/19/67	"Report of Visit to General Electric APED, San Jose, California (Discussion of qualification tests for electroslag welding of nuclear vessels)", J.J.Chyle
DC-7 (6/5/67	"Report of Visit to Combustion Engineering, Chattanooga, Tenn. (In-Process Inspection of Indian Point (Westinghouse-Consolidated Edison PWR) and Millstone (GE-BWR)vessels)", R.A.Lofy
Letter (4/21/67) (no number)	Letter Report: J.J.Chyle to H.D.Thornburg "Pipe Failrues, Dresden -I Nuclear Plant. Commonwealth Edison Co.", J.J.Chyle
DC-6 (5/13/67	"Report of Visit to Babcock and Wilcox Mt. Vernon Works (Dresden -II-III Vessels for Commonwealth Edison) Fabrication and Records)", R.A.Lofy

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Report (2/23/67)	"Comments on the Metallurgical Aspects of Annealing of the SM-1a Reactor Vessel (U.S. Army-Fort Greely, Alaska)", D. Kedzie
DCL-5 (1/6/67)	"Comments and Recommendations, Review of Northern States Power Company Report "Design, Fabrication, and Erection of the Reactor Vessel", R.A.Lofy, W.J.Foley, J.J.Chyle, A.F.Cota
DCL-4 (11/23/66)	"Supplementary Comments and Recommendations on Fabrication of Pressure Vessel for Monticello Nuclear Generating Plant (NSP)", R.A.Lofy, J.J.Chyle
DCL-3 (11/10/66)	"Report of Visits to Babcock and Wilcox, Combustion Engineering and Chicago Bridge and Iron Co. to Review Nuclear Pressure Vessel Construction Practices", R.A.Lofy
DC-2 (10/12/66)	"Report of Inspection of Steam Generator Superheater Section Repairs Peach Bottom Atomic Power Station (Philadelphia Electric Company)", R.A.Lofy, J.J.Chyle
DCL-1 (10/11/66)	"Report of Meeting on Site Assembly of Pressure Vessel for Monticello Nuclear Generating Plant (NSP)", R.A.Lofy, A.F.Cota, J.J.Chyle, R.L.Teresinski
(9/30/66) (no report)	Field Trip to Atlantic Refinery, Phila. Pa. to Review Field Erection of Hydrocracker by Chicago Bridge and Iron (CBI)(background for evaluation of field erection of Monticello Vessel for Northern States Power (NSP)", R.A.Lofy