

AWARD/CONTRACT		1 THIS CONTRACT IS RATED ORDER UNDER DPAS (15 CFR 350)	RATING N/A	PAGE OF PAGES 1
2 CONTRACT NO (Proc. Inst Ident.) NRC-04-02-074	3 EFFECTIVE DATE 09-09-2002	4 REQUISITION/PURCHASE REQUEST/PROJECT NO. RES-02-074		
5 ISSUED BY U.S. Nuclear Regulatory Commission Div of Contracts Two White Flint North - MS T-7-I-2 Washington, DC 20555	CODE	6 ADMINISTERED BY (If other than Item 5) U.S. Nuclear Regulatory Commission Div of Contracts Two White Flint North - MS T-7-I-2 Washington, DC 20555	CODE	

7 NAME AND ADDRESS OF CONTRACTOR (No. street, city county, State and ZIP Code) Battelle Columbus Operation 505 King Avenue Columbus OH 43201-2693	8 DELIVERY <input type="checkbox"/> FOB ORIGIN <input type="checkbox"/> OTHER (See below)
	9 DISCOUNT FOR PROMPT PAYMENT net 30
	10 SUBMIT INVOICES (4 copies unless otherwise specified) ITEM 5 TO THE ADDRESS SHOWN IN

11 SHIP TO/MARK FOR U.S. Nuclear Regulatory Commission Office of Nuclear Regulatory Research 11545 Rockville Pike Rockville MD 20852	CODE	12 PAYMENT WILL BE MADE BY U.S. Nuclear Regulatory Commission Payment Team, Mail Stop T-9-H-4 Attn: (insert contract or order number) Washington DC 20555	CODE
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13 AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION <input type="checkbox"/> 10 USC 2304(c)() <input checked="" type="checkbox"/> 41 USC 253(c)(1)	14 ACCOUNTING AND APPROPRIATION DATA 31X0200 26015110203 Y6538 252A \$420,000
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15A ITEM NO	15B SUPPLIES/SERVICES	15C QUANTITY	15D UNIT	15E UNIT PRICE	15F. AMOUNT
	See Section B The contractor's subcontracting plan dated 8/29/02 is hereby approved and incorporated into this contract by reference.				

15G TOTAL AMOUNT OF CONTRACT \$2,254,275.00

16. TABLE OF CONTENTS See Attached Table of Contents

(X)	SEC	DESCRIPTION	PAGE(S)	(X)	SEC	DESCRIPTION	PAGE(S)
PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES			
	A	SOLICITATION/CONTRACT FORM			I	CONTRACT CLAUSES	
	B	SUPPLIES OR SERVICES AND PRICES/COSTS		PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH			
	C	DESCRIPTION/SPECS./WORK STATEMENT			J	LIST OF ATTACHMENTS	
	D	PACKAGING AND MARKING		PART IV - REPRESENTATIONS AND INSTRUCTIONS			
	E	INSPECTION AND ACCEPTANCE			K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS	
	F	DELIVERIES OR PERFORMANCE			L	INSTRS., CONDS., AND NOTICES TO OFFER	
	G	CONTRACT ADMINISTRATION DATA			M	EVALUATION FACTORS FOR AWARD	
	H	SPECIAL CONTRACT REQUIREMENTS					

CONTRACTING OFFICER WILL COMPLETE ITEM 17 OR 18 AS APPLICABLE

17 <input checked="" type="checkbox"/> CONTRACTOR'S NEGOTIATED AGREEMENT (Contractor is required to sign this document and return <u>LWO</u> copies to issuing office) Contractor agrees to furnish and deliver all items or perform all the services set forth or otherwise identified above and on any continuation sheets for the consideration stated herein. The rights and obligations of the parties to this contract shall be subject to and governed by the following documents (a) this award/contract, (b) the solicitation, if any, and (c) such provisions representations, certifications, and specifications, as are attached or incorporated by reference herein. (Attachments are listed herein.)	18 <input type="checkbox"/> AWARD (Contractor is not required to sign this document.) Your offer on Solicitation Number _____, including the additions or changes made by you which additions or changes are set forth in full above, is hereby accepted as to the items listed above and on any continuation sheets. This award consummates the contract which consists of the following documents (a) the Government's solicitation and your offer, and (b) this award/contract. No further contractual document is necessary.
19A. NAME AND TITLE OF SIGNER ULES P. JACKSON CONTRACTING OFFICER	20A. NAME OF CONTRACTING OFFICER Stephen M. Pool
19B. NAME OF CONTRACTOR BY <u>Ules P. Jackson</u> (Signature of person authorized to sign)	19C. DATE SIGNED 9/6/02
20B. UNITED STATES OF AMERICA BY <u>Stephen M. Pool</u> (Signature of Contracting Officer)	20C. DATE SIGNED 9-5-02

TEMPLATE-ADM 001

ADM 02

Table of Contents

	Page
PART I - THE SCHEDULE	A-3
SECTION A - SOLICITATION/CONTRACT FORM	A-3
SF 26 AWARD/CONTRACT	A-3
PART I - THE SCHEDULE	B-1
SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS	B-1
B.1 PROJECT TITLE	B-1
B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)	B-1
B.3 CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE (JUN 1988) ALTERNATE I (JUN 1991)	B-1
SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK	C-1
C.1 BACKGROUND	C-1
C.2 OBJECTIVES	C-1
C.3 SCOPE OF WORK	C-1
C.4 MEETINGS AND TRAVEL:	C-4
C.5 NRC-FURNISHED INFORMATION	C-4
SECTION D - PACKAGING AND MARKING	D-1
D.1 PACKAGING AND MARKING (MAR 1987)	D-1
SECTION E - INSPECTION AND ACCEPTANCE	E-1
E.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE.....	E-1
E.2 PLACE OF INSPECTION AND ACCEPTANCE (MAR 1987)	E-1
SECTION F - DELIVERIES OR PERFORMANCE	F-1
F.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE.....	F-1
F.2 2052.211-70 PREPARATION OF TECHNICAL REPORTS (JAN 1993)	F-1
F.3 NEW STANDARDS FOR CONTRACTORS WHO PREPARE NUREG-SERIES MANUSCRIPTS	F-1
F.4 2052.211-71 TECHNICAL PROGRESS REPORT (JAN 1993)	F-2
F.5 2052.211-72 FINANCIAL STATUS REPORT (OCT 1999)	F-2
F.6 DELIVERABLES	F-4
F.7 PLACE OF DELIVERY--REPORTS (JUN 1988)	F-5
F.8 DURATION OF CONTRACT PERIOD (MAR 1987)	F-5
SECTION G - CONTRACT ADMINISTRATION DATA	G-1
G.1 2052.215-71 PROJECT OFFICER AUTHORITY	G-1
G.2 2052.215-78 TRAVEL APPROVALS AND REIMBURSEMENT -ALTERNATE 1 (OCT 1999)	G-2
G.3 2052.216-71 INDIRECT COST RATES (JAN 1993)	G-3
G.4 ELECTRONIC PAYMENT	G-3
SECTION H - SPECIAL CONTRACT REQUIREMENTS	H-1
H.1 2052.209-72 CONTRACTOR ORGANIZATIONAL CONFLICTS OF INTEREST (JAN 1993)	H-1
H.2 2052.215-70 KEY PERSONNEL (JAN 1993)	H-3
H.3 2052.235-70 PUBLICATION OF RESEARCH RESULTS (OCT 1999)	H-4
H.4 2052.235-71 SAFETY, HEALTH, AND FIRE PROTECTION (JAN 1993)	H-4
H.5 2052.242-70 RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL VIEWS	

(DPVS) (OCT 1999)	H-4
H.6 2052.242-71 PROCEDURES FOR RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL VIEWS (DPVS) (OCT 1999)	H-5
H.7 COMPLIANCE WITH U.S. IMMIGRATION LAWS AND REGULATIONS	H-6
H.8 GOVERNMENT FURNISHED EQUIPMENT/PROPERTY - NONE PROVIDED (JUN 1988)	H-6
H.9 SEAT BELTS	H-6
H.10 ANNUAL AND FINAL CONTRACTOR PERFORMANCE EVALUATIONS	H-7
PART II - CONTRACT CLAUSES	I-1
SECTION I - CONTRACT CLAUSES	I-1
I.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE	I-1
I.2 52.222-2 PAYMENT FOR OVERTIME PREMIUMS (JUL 1990)	I-3
I.3 52.232-25 PROMPT PAYMENT (FEB 2002)	I-3
I.4 52.244-2 SUBCONTRACTS (AUG 1998) ALTERNATE II (AUG 1998)	I-7
I.5 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)	I-9
PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS	J-1
SECTION J - LIST OF ATTACHMENTS	J-1

PART I - THE SCHEDULE

SECTION B - SUPPLIES OR SERVICES AND PRICE/COSTS

B.1 PROJECT TITLE

The title of this project is as follows:

Technical Development of Loss of Coolant Accident Frequency Distributions

B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)

The objective of this project is to provide technical support to the NRC staff as they develop a regulatory guide on LBB evaluation procedures based on previous research, industry applications and prior rulemaking, and to provide technical support for risk-informing 10 CFR 50.46 and SBLOCA, MBLOCA and LBLOCA requirements.

**B.3 CONSIDERATION AND OBLIGATION--COST PLUS FIXED FEE
(JUN 1988) ALTERNATE I (JUN 1991)**

(a) The total estimated cost to the Government for full performance of this contract is \$2,254,275 of which the sum of \$2,059,265 represents the estimated reimbursable costs less CAS414, of which the sum of \$30,269 represents CAS 414 and of which \$164,741 represents the fixed fee.

(b) There shall be no adjustment in the amount of the Contractor's fixed fee by reason of differences between any estimate of cost for performance of the work under this contract and the actual cost for performance of that work.

(c) The amount currently obligated by the Government with respect to this contract is \$420,000, of which the sum of \$383,667 represents funds for the estimated reimbursable costs less CAS 414, of which the sum of \$5,639 represents funds for CAS 414 and of which \$30,694 represents funds for the fixed fee.

(d) It is estimated that the amount currently allotted will cover performance through November 30, 2002.

SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK

C.1 BACKGROUND

For the NRC to make informed decisions concerning the safety and integrity of the emergency core cooling system for commercial light-water reactors, an understanding of the fracture mechanics, degradation mechanisms, and aging issues regarding the plants' piping is essential.

The need exists to perform piping fracture mechanics-based evaluations for nuclear power plant systems to include analysis and technical support for alternatives for risk-informing 10 CFR 50.46 and large-break loss-of-coolant accident (LBLOCA) requirements, as well as small-break and medium-break loss-of-coolant accidents (SBLOCA and MBLOCA). There continues to be a need for licensee guidance in performing leak-before-break (LBB) evaluations for nuclear power plant systems in operating plants and for proposed advanced reactor designs.

C.2 OBJECTIVES

The objective of this project is to provide technical support to the NRC staff as they develop a regulatory guide on LBB evaluation procedures based on previous research, industry applications and prior rulemaking, and to provide technical support for risk-informing 10 CFR 50.46 and SBLOCA, MBLOCA and LBLOCA requirements.

C.3 SCOPE OF WORK

The contractor shall furnish all personnel, materials, equipment, facilities and services necessary to perform the technical tasks listed below. This program is a follow-on to the work completed under NRC-04-98-039 and shall be coordinated and will retain an appropriate degree of continuity with that NRC contract at Battelle, "Technical Support for Regulatory Guide for Leak-Before-Break Evaluation Procedures."

TASK 1: Technical Support for Development of Piping LOCA Computer Code for Risk-Informing 10 CFR 50.46

The objective of this task is to develop an analytic approach to support fully risk-informing 10 CFR 50.46 and LOCA requirements through computer modeling. The approach shall include: assessment of existing information; identification of areas of insufficient information; review of available codes (including identification of strengths and weaknesses); updating/developing computer codes; uncertainty analysis; sample plant evaluations; and QA of codes and results. Provide references and documentation to support the results. Individual codes shall also be consolidated into a universal piping LOCA computer code.

Subtask 1a: Finalize and QA SQUIRT Code

Finalize revision in a windows-formatted environment of the existing SQUIRT software code, to include all steam and all liquid flow, assessment of crack opening displacement (COD) accuracy by benchmarking against existing finite element COD analyses, and include COD crack morphology in the model. Also perform scoping calculations to evaluate the effect of different base and weld metal strengths on the weld residual stress distribution and the subsequent affect on the COD.

Subtask 1b: Update and Develop Computer Codes

Initiate updating and modification of applicable probabilistic leak-rate and fracture-mechanics codes, including but not limited to PSQUIRT and PROLBB codes. Also, initiate development of computer codes to model subcritical crack growth, surface cracks, incorporate user experience, inspection affects, aging/future degradation mechanisms, and indirect failures as applicable to the LOCA. Specific technical advancement is required to determine SSE probability, to

develop fracture toughness data for Inconel 82/182 weld material, to examine and establish residual stress patterns in bimetallic welds, consider multiple crack initiation sites and crack interaction effects, and develop methodology to predict partial pipe failure after crack initiation. The contribution of potential future unknown degradation mechanism(s) must be addressed and included in final code. Additionally, LOCA contributions from all other, non-piping failure sources should be included.

Subtask 1c: Perform Sample Plant Evaluations

Select plant piping geometry and cases applicable for use in final piping computer code. Assemble input parameters, run cases, perform QA and amend code as needed.

Subtask 1d: Benchmark Piping Computer Code

Benchmark final piping computer code against existing U.S. industry and/or internationally developed codes and piping service databases (i.e. SRRRA and SKI-PIPE).

Subtask 1e: Comprehensive Piping LOCA Computer Code

Consolidate all individual LOCA computer modules into a Windows-formatted, user-friendly piping LOCA computer code. Provide detailed user's manual.

TASK 2: Technical Assistance of NRC Staff for Leak-Before-Break (LBB), RI-ISI, and flaw distribution studies.

Provide special analytical, experimental, and administrative support to the NRC in resolving various regulatory issues related to irradiation effects. Specific activities will be identified on an as-needed basis by the NRC Project Manager. Examples of such activities include: review of licensee submittals or topical reports regarding LOCA frequencies; machining and testing materials in support of LBLOCA analyses; resolution of LBB issues identified through public comment on the LBB technical bases document; etc.

Subtask 2a: Review RI-ISI Reports

Review risk-informed in-service inspection (RI-ISI) reports and referenced documents for applicability to LOCA redefinition, including the adequacy of the technical analyses and any potential deficiencies.

Subtask 2b: Flaw Distribution Study

Perform flaw distribution study on nuclear grade welds for NDE examination and destructive testing. Incorporate analysis into flaw distribution for final piping computer code.

Subtask 2c: LBB Support

Incorporate results from next BINP meeting into final technical bases document for future potential LBB Regulatory Guide. Provide technical assistance for the evaluation of licensee LBB submissions.

TASK 3: LOCA Frequency Distribution Reevaluation and Redefinition

The contractor shall utilize the computer codes developed in task 1 in order to support the fundamental evaluation contained within the following subtask

Subtask 3a: Estimate LOCA Distributions

The contractor shall provide LOCA frequency estimations. Additionally, the contractor shall technically support these estimations and the NRC staff by providing appropriate background material, identify pertinent technical issues for consideration, assessing the relative importance of each issue, and develop the supporting technical rationale for

appropriate LOCA failure mechanisms (SBLOCA, MBLOCA and LBLOCA). The contractor shall provide assistance in identifying specific technical issues for consideration during the evaluation process, and provide review of NRC staff evaluations of these technical issues.

Subtask 3b: Spectrum of Breaks

The contractor shall develop through first principals and service history a spectrum of pipe diameters versus frequencies. A generic effort shall initially be conducted, and then additional sensitivity analysis and plant specific applications shall be performed in order to provide technical input to any final rulemaking decisions.

TASK 4: Technical Assistance for Expert Elicitation Report

An expert elicitation panel will be convened through a separate contract action. The contractor shall support this effort through the following subtasks.

Subtask 4a: Technical Background Preparation and Panel Coordination

The contractor shall assist NRC staff in selecting relevant technical documents, information, and background regarding pipe break and LOCA frequency distributions. Topics include but are not limited to: LBB experiments and analyses; intergranular stress corrosion cracking (IGSCC); primary water stress corrosion cracking (PWSCC); service history failures; vibration and thermal fatigue cracking; application of safe shutdown earthquake (SSE) loading; relevant ASME code criteria; flaw and residual stress distributions; and indirect causes of ECCS failure. A rigorous uncertainty analysis shall be included to isolate the nature (aleatory, epistemic) and the magnitude of the input, model, material and other relevant uncertainties.

The contractor shall assist the NRC in the administration of the elicitation process. Contractor duties will include coordinating meeting locations, times, and agendas with the elicitation panel and facilitating meeting arrangements (accommodations, meeting rooms, etc.) for specific locations. Additionally, the contractor will provide financial support to cover the panel members participation on the elicitation panel and necessary travel expenses. It is anticipated that between three to five meetings will be required within the continental United States to support this effort.

Subtask 4b: Elicitation Process

The contractor shall provide technical assistance in the preparation of and presentation of technical issues to the expert panel (expected to consist of approximately 10 panel members) and facilitate discussion among panel members. The contractor shall participate in elicitation training in order to properly assess the panel findings.

Subtask 4c: Review and Evaluation of Panel Results

The contractor shall review and evaluate the findings of the expert panel. This will involve summarizing and quantifying the panel's recommendations; identifying and ranking the importance of technical issues associated with LOCA frequency determination; and utilizing the findings to benchmark the mechanistic probabilistic fracture mechanics (PFM) contributions to the LOCA frequencies. The contractor shall combine the expert panel's findings, service history database, and mechanistic predictions into final SBLOCA, MBLOCA and LBLOCA frequency distributions which will be utilized within the ECCS acceptance criteria reevaluation. The assumptions and methodologies behind the determinations shall be clearly documented.

TASK 5: Collaboration with International and Professional Groups

The contractor shall participate in domestic and international meetings for codes and standards and meetings with other technical experts dealing with nuclear piping issues to exchange and communicate state-of-the-art technical research on piping fracture mechanics. As requested, the contractor shall participate with other international and domestic professional organizations.

C.4 MEETINGS AND TRAVEL:

Two one week trips for one person (foreign travel) per year for participation in international meetings on piping failure mechanisms.

Four two-day trips for two-people to Rockville, MD per year to support internal review, program review, and provide expertise in technical areas to include but not be limited to: piping degradation mechanisms, LBB issues, risk-informing 10 CFR-50.46, and ECCS reliability.

Other travel, as stipulated in task 4, to support the expert elicitation process. For the purposes of the proposal estimate five three-day trips for one person to NRC Headquarters and one international trip for one week for one person to Stockholm, Sweden. In addition, two domestic trips for one person, three days to San Francisco, CA.

The contractor may participate in professional and technical meetings at NRC's request and approval in support of the completion of on-going work. For the purposes of this proposal, estimate six two-day trips for two people to NRC Headquarters.

C.5 NRC-FURNISHED INFORMATION

The NRC will furnish the contractor with any background documents and information developed as part of past NRC-sponsored piping research projects as well as public information related to Leak-Before-Break (LBB) and 10 CFR 50.46 revision efforts.

SECTION D - PACKAGING AND MARKING

D.1 PACKAGING AND MARKING (MAR 1987)

The Contractor shall package material for shipment to the NRC in such a manner that will ensure acceptance by common carrier and safe delivery at destination. Containers and closures shall comply with the Interstate Commerce Commission Regulations, Uniform Freight Classification Rules, or regulations of other carriers as applicable to the mode of transportation. On the front of the package, the Contractor shall clearly identify the contract number under which the product is being provided.

SECTION E - INSPECTION AND ACCEPTANCE**E.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE**

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR "52.252-2 CLAUSES INCORPORATED BY REFERENCE" in Section I of this contract. See FAR 52.252-2 for an internet address (if specified) for electronic access to the full text of a clause.

NUMBER	TITLE	DATE
	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1)	
52.246-8	INSPECTION OF RESEARCH AND DEVELOPMENT -- COST-REIMBURSEMENT	MAY 2001

E.2 PLACE OF INSPECTION AND ACCEPTANCE (MAR 1987)

Inspection and acceptance of the deliverable items to be furnished hereunder shall be made by the Project Officer at the destination.

SECTION F - DELIVERIES OR PERFORMANCE

F.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR "52.252-2 CLAUSES INCORPORATED BY REFERENCE" in Section I of this contract. See FAR 52.252-2 for an internet address (if specified) for electronic access to the full text of a clause.

NUMBER	TITLE	DATE
	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1)	
52.242-15	STOP-WORK ORDER ALTERNATE I (APR 1984)	AUG 1989

F.2 2052.211-70 PREPARATION OF TECHNICAL REPORTS (JAN 1993)

All technical reports required by Section C and all Technical Progress Reports required by Section F are to be prepared in accordance with the attached Management Directive 3.8, "Unclassified Contractor and Grantee Publications in the NUREG Series." Management Directive 3.8 is not applicable to any Contractor Spending Plan (CSP) and any Financial Status Report that may be included in this contract. (See List of Attachments).

F.3 NEW STANDARDS FOR CONTRACTORS WHO PREPARE NUREG-SERIES MANUSCRIPTS

The U.S. Nuclear Regulatory Commission (NRC) began to capture its official records electronically on January 1, 2000. All records will be saved electronically in ADAMS.

The NRC will capture each final NUREG-series publication in its native application. Therefore, commencing January 1, 2000, please submit your final manuscript that has been approved by your NRC Project Manager in both electronic and camera-ready copy.

All format guidance, as specified in NUREG-0650, Revision 2, will remain the same with one exception. You will no longer be required to include the NUREG-series designator on the bottom of each page of the manuscript. The NRC will assign this designator when we send the camera-ready copy to the printer and will place the designator on the cover, title page, and spine. The designator for each report will no longer be assigned when the decision to prepare a publication is made. The NRC's Publishing Services Branch will inform the NRC Project Manager for the publication of the assigned designator when the final manuscript is sent to the printer.

For the electronic manuscript, prepare the text in WordPerfect 8, and use any of the following file types for charts, spreadsheets, and the like.

File Types to be Used for NUREG-Series Publications

File Type	File Extension
WordPerfect	.wpd
Microsoft PowerPoint	.ppt
Corel QuattroPro	.wb3
Corel Presentations	.shw
Lotus 1-2-3	.wk4
Portable Document Format	.pdf

This list is subject to change if new software packages come into common use at NRC or by our licensees or other stakeholders that participate in the electronic submission process. If a portion of your manuscript is from another source and you cannot obtain an acceptable electronic file type for this portion (e.g., an appendix from an old publication), the NRC can, if necessary, create a tagged image file format (file extension .tif) for that portion of your report. Note that you should continue to submit original photographs, which will be scanned, since digitized photographs do not print well.

If you chose to publish a compact disk (CD) of your publication, place on the CD copies of the manuscript in both (1) a portable document format (PDF); (2) a WordPerfect 8/9 file format, and (3) an Adobe Acrobat Reader, or, alternatively, print instructions for obtaining a free copy of Adobe Acrobat Reader on the back cover insert of the jewel box.

F.4 2052.211-71 TECHNICAL PROGRESS REPORT (JAN 1993)

The contractor shall provide a monthly Technical Progress Report to the project officer and the contracting officer. The report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, appropriate financial tracking code specified by the NRC Project Officer, project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task/task order:

- (a) A listing of the efforts completed during the period, and milestones reached or, if missed, an explanation provided;
- (b) Any problems or delays encountered or anticipated and recommendations for resolution. If the recommended resolution involves a contract modification, e.g., change in work requirements, level of effort (cost) or schedule delay, the contractor shall submit a separate letter to the contracting officer identifying the required change and estimated cost impact.
- (c) A summary of progress to date; and
- (d) Plans for the next reporting period.

F.5 2052.211-72 FINANCIAL STATUS REPORT (OCT 1999)

The contractor shall provide a monthly Financial Status Report (FSR) to the project officer and the contracting officer. The FSR shall include the acquisition of, or changes in the status of, contractor-held property acquired with government funds valued at the time of purchase at \$50,000 or more. Whenever these types of property changes occur, the contractor shall send a copy of the report to the Chief, Property and Acquisition Oversight Branch, Office of Administration. The

report is due within 15 calendar days after the end of the report period and must identify the title of the project, the contract number, the appropriate financial tracking code (e.g., Job Code Number or JCN) specified by the NRC Project Officer, project manager and/or principal investigator, the contract period of performance, and the period covered by the report. Each report must include the following for each discrete task:

- (a) Total estimated contract amount.
- (b) Total funds obligated to date.
- (c) Total costs incurred this reporting period.
- (d) Total costs incurred to date.
- (e) Detail of all direct and indirect costs incurred during the reporting period for the entire contract or each task, if it is a task ordering contract.
- (f) Balance of obligations remaining.
- (g) Balance of funds required to complete contract/task order.
- (h) Contractor Spending Plan (CSP) status: A revised CSP is required with the Financial Status Report whenever the contractor or the contracting officer has reason to believe that the total cost for performance of this contract will be either greater or substantially less than what had been previously estimated.
 - (1) Projected percentage of completion cumulative through the report period for the project/task order as reflected in the current CSP.
 - (2) Indicate significant changes in the original CSP projection in either dollars or percentage of completion. Identify the change, the reasons for the change, whether there is any projected overrun, and when additional funds would be required. If there have been no changes to the original NRC-approved CSP projections, a written statement to that effect is sufficient in lieu of submitting a detailed response to item "h".
- (i) Property status:
 - (1) List property acquired for the project during the month with an acquisition cost between \$500 and \$49,999. Give the item number for the specific piece of equipment.
 - (2) Provide a separate list of property acquired for the project during the month with an acquisition cost of \$50,000 or more. Provide the following information for each item of property: item description or nomenclature, manufacturer, model number, serial number, acquisition cost, and receipt date. If no property was acquired during the month, include a statement to that effect. The same information must be provided for any component or peripheral equipment which is part of a "system or system unit."
 - (3) For multi-year projects, in the September monthly financial status report provide a cumulative listing of property with an acquisition cost of \$50,000 or more showing the information specified in paragraph (i)(2) of this clause.
 - (4) In the final financial status report provide a closeout property report containing the same elements as described above for the monthly financial status reports, for all property purchased with NRC funds regardless of value unless title has been vested in the contractor. If no property was acquired under the contract, provide a statement to that effect. The report should note any property requiring special handling for security, health, safety, or other reasons as part of the report.
- (j) Travel status: List the starting and ending dates for each trip, the starting point and destination, and the traveler(s) for each trip.

(k) If the data in this report indicates a need for additional funding beyond that already obligated, this information may only be used as support to the official request for funding required in accordance with the Limitation of Cost (LOC) Clause (FAR 52.232-20) or the Limitation of Funds (LOF) Clause FAR 52.232-22.

F.6 DELIVERABLES

Task No.	Description/Deliverable	Date
1a	Submit 10 CD-ROM copies of final SQUIRT Code and User's Manual	Six months from initiation of contract
1b	Submit preliminary beta version of codes, with Technical Letter Report documenting code modification and/or development for each computer code. PROLBB modifications PSQUIRT modifications Subcritical crack growth code Aging, future mechanisms & other causes code User experience code	Two weeks from completion of each code.
1c	Submit technical letter report documenting consistencies and inconsistencies observed in plant evaluations. Include description of code adjustments based on these observations.	Four weeks from completion of evaluations.
1d	Submit technical letter report detailing benchmarking results.	Four weeks from completion of benchmarking.
1e	Submit final piping fracture mechanics code with accompanying manual.	6/30/05
2a	Submit technical letter report documenting RI-ISI report review.	Four weeks from initiation of contract
2b	Submit technical letter report documenting flaw distribution study.	11/30/02
2c	Submit travel report, detailing BINP meeting accomplishments. Submit technical bases document for LBB incorporating results from BINP meeting.	Two weeks after meeting conclusion. Two months after next BINP meeting, tentatively scheduled for Fall, 2002.
3a	Submit technical letter report detailing process and results of estimated LOCA frequency distributions.	6/30/03
3b	Submit draft technical letter report detailing spectrum of breaks/frequency.	4/30/04
	Submit final technical letter report detailing spectrum	6/30/04

of breaks/frequency.

Submit draft technical letter report detailing break frequency sensitivity analysis and plant specific analysis 4/30/05

4a/4b Submit draft NUREG report which documents the elicitation process. Include philosophy and justification of expert panel selection, background material preparation, development of issues, and analysis of results. Two months after panel conclusion.

Final NUREG report, incorporating NRC comments. panel conclusion. Four months after

4c Submit draft NUREG report combining expert panel findings with mechanistically-supported technical predictions of pertinent failure mode frequency to develop SB, MB. And LB LOCA frequency distributions. Four months after panel conclusion.

Final NUREG report, incorporating NRC comments. panel conclusion. Six months after

5 Trip reports. Sixty days after any associated travel.

Before contract expiration, submit a final technical report which summarizes the technical work completed, lists and summarizes NUREGs published and details any remaining or unfinished technical work.

Before contract expiration, append the NRC's pipe fracture encyclopedia to include all NUREGs and computer codes developed as part of this effort. Supply 10 copies of the updated CD-ROM.

F.7 PLACE OF DELIVERY--REPORTS (JUN 1988)

The items to be furnished hereunder shall be delivered, with all charges paid by the Contractor, to:

- 1. Project Officer (1 copy)
- 2. Michael E. Mayfield, Division Director, DET, Mail Stop T-10D20
- 3. Peggy Cross-Prather, Management Analyst, Mail Stop T-10D20
- 4. Nilesh C. Chokshi, Branch Chief, MEB, Mail Stop T-10E10
- 5. Contracting Officer (1 copy)

F.8 DURATION OF CONTRACT PERIOD (MAR 1987)

This contract shall commence on effective date per SF 26 and will expire 36 months thereafter.

SECTION G - CONTRACT ADMINISTRATION DATA**G.1 2052.215-71 PROJECT OFFICER AUTHORITY**

(a) The contracting officer's authorized representative hereinafter referred to as the project officer for this contract is:

Name:

Address:

Telephone Number:

(b) Performance of the work under this contract is subject to the technical direction of the NRC project officer. The term "technical direction" is defined to include the following:

(1) Technical direction to the contractor which shifts work emphasis between areas of work or tasks, authorizes travel which was unanticipated in the Schedule (i.e., travel not contemplated in the Statement of Work or changes to specific travel identified in the Statement of Work), fills in details, or otherwise serves to accomplish the contractual statement of work.

(2) Provide advice and guidance to the contractor in the preparation of drawings, specifications, or technical portions of the work description.

(3) Review and, where required by the contract, approval of technical reports, drawings, specifications, and technical information to be delivered by the contractor to the Government under the contract.

(c) Technical direction must be within the general statement of work stated in the contract. The project officer does not have the authority to and may not issue any technical direction which:

(1) Constitutes an assignment of work outside the general scope of the contract.

(2) Constitutes a change as defined in the "Changes" clause of this contract.

(3) In any way causes an increase or decrease in the total estimated contract cost, the fixed fee, if any, or the time required for contract performance.

(4) Changes any of the expressed terms, conditions, or specifications of the contract.

(5) Terminates the contract, settles any claim or dispute arising under the contract, or issues any unilateral directive whatever.

(d) All technical directions must be issued in writing by the project officer or must be confirmed by the project officer in writing within ten (10) working days after verbal issuance. A copy of the written direction must be furnished to the

contracting officer. A copy of NRC Form 445, Request for Approval of Official Foreign Travel, which has received final approval from the NRC must be furnished to the contracting officer.

(e) The contractor shall proceed promptly with the performance of technical directions duly issued by the project officer in the manner prescribed by this clause and within the project officer's authority under the provisions of this clause.

(f) If, in the opinion of the contractor, any instruction or direction issued by the project officer is within one of the categories as defined in paragraph (c) of this section, the contractor may not proceed but shall notify the contracting officer in writing within five (5) working days after the receipt of any instruction or direction and shall request the contracting officer to modify the contract accordingly. Upon receiving the notification from the contractor, the contracting officer shall issue an appropriate contract modification or advise the contractor in writing that, in the contracting officer's opinion, the technical direction is within the scope of this article and does not constitute a change under the "Changes" clause.

(g) Any unauthorized commitment or direction issued by the project officer may result in an unnecessary delay in the contractor's performance and may even result in the contractor expending funds for unallowable costs under the contract.

(h) A failure of the parties to agree upon the nature of the instruction or direction or upon the contract action to be taken with respect thereto is subject to 52.233-1 - Disputes.

(i) In addition to providing technical direction as defined in paragraph (b) of the section, the project officer shall:

(1) Monitor the contractor's technical progress, including surveillance and assessment of performance, and recommend to the contracting officer changes in requirements.

(2) Assist the contractor in the resolution of technical problems encountered during performance.

(3) Review all costs requested for reimbursement by the contractor and submit to the contracting officer recommendations for approval, disapproval, or suspension of payment for supplies and services required under this contract.

(4) Assist the contractor in obtaining the badges for the contractor personnel.

(5) Immediately notify the Personnel Security Branch, Division of Facilities and Security (PERSEC/DFS) (via e-mail) when a contractor employee no longer requires access authorization and return the individual's badge to PERSEC/DFS within three days after their termination.

G.2 2052.215-78 TRAVEL APPROVALS AND REIMBURSEMENT -ALTERNATE 1 (OCT 1999)

(a) Total expenditure for travel may not exceed without the prior approval of the contracting officer.

(b) All foreign travel must be approved in advance by the NRC on NRC Form 445, Request for Approval of Official Foreign Travel, and must be in compliance with FAR 52.247-63 Preference for U.S. Flag Air Carriers. The contractor shall submit NRC Form 445 to the NRC no later than 30 days prior to the commencement of travel.

(c) The contractor will be reimbursed only for those travel costs incurred that are directly related to this contract and which are allowable subject to the limitations prescribed in FAR 31.205-46. (d) It is the responsibility of the contractor to notify the contracting officer in accordance with the FAR Limitations of Cost clause of this contract when,

at any time, the contractor learns that travel expenses will cause the contractor to exceed the travel ceiling amount identified in paragraph (a) of this clause.

(e) Reasonable travel costs for research and related activities performed at State and nonprofit institutions, in accordance with Section 12 of Pub. L. 100-679, shall be charged in accordance with the contractor's institutional policy to the degree that the limitations of Office of Management and Budget (OMB) guidance are not exceeded. Applicable guidance documents include OMB Circular A-87, Cost Principles for State and Local Governments; OMB Circular A-122, Cost Principles for Nonprofit Organizations; and OMB Circular A-21, Cost Principles for Educational Institutions.

G.3 2052.216-71 INDIRECT COST RATES (JAN 1993)

(a) Pending the establishment of final indirect rates which must be negotiated based on audit of actual costs, the contractor shall be reimbursed for allowable indirect costs as follows:

INDIRECT COST POOL	RATE	BASE
Fringe Benefits	[REDACTED]	DL cost
Overhead	[REDACTED]	DL+Fringe
Gen Spt Fac	[REDACTED]	DL+Fringe
Equipment Develop	[REDACTED]	
Welding Eng Fac	[REDACTED]	
Polymer Equip	[REDACTED]	
Subcontract Admin	[REDACTED]	subcontract cost
G&A	[REDACTED]	Total Cost
CAS 414 OVHD	[REDACTED]	
CAS 414 G&A	[REDACTED]	

(b) The contracting officer may adjust these rates as appropriate during the term of the contract upon acceptance of any revisions proposed by the contractor. It is the contractor's responsibility to notify the contracting officer in accordance with FAR 52.232-20, Limitation of Cost, or FAR 52.232-22, Limitation of Funds, as applicable, if these changes affect performance of work within the established cost or funding limitations.

G.4 ELECTRONIC PAYMENT

The Debt Collection Improvement Act of 1996 requires that all payments except IRS tax refunds be made by Electronic Funds Transfer. It is the policy of the Nuclear Regulatory Commission to pay vendors by the Automated Clearing House (ACH) electronic funds transfer payment system. The electronic system is known as Vendor Express. Payment shall be made in accordance with FAR 52.232-33, entitled "Mandatory Information for Electronic Funds Transfer Payment".

To receive payment, the contractor shall complete the "Company Information" portion of the Standard Form 3881, entitled "ACH Vendor/Miscellaneous Payment Enrollment Form" found as an attachment to this document. The contractor shall take the form to the ACH Coordinator at the financial institution that maintains its company's bank account. The contractor shall discuss with the ACH Coordinator how the payment identification information (addendum record) will be passed to them once the payment is received by the financial institution. Further information concerning the addendum is provided at Attachment . The ACN Coordinator should fill out the "Financial Institution Information" portion of the form and return it to the Office of the Controller at the following address: Nuclear Regulatory Commission, Division of Accounting and Finance, Financial Operations Section, Mail Stop T-9-H-4, Washington, DC

20555, ATTN: ACH/Vendor Express. It is the responsibility of the contractor to ensure that the financial institution returns the completed form to the above cited NRC address. If the contractor can provide the financial information, signature of the financial institutions ACH Coordinator is not required. The NRC is under no obligation to send reminders. Only after the Office of the Controller has processed the contractor's sign-up form will the contractor be eligible to receive payments.

Once electronic funds transfer is established for payments authorized by NRC, the contractor needs to submit an additional SF 3881 only to report changes to the information supplied.

Questions concerning ACH/Vendor Express should be directed to the Financial Operations staff at (301) 415-7520."

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1 2052.209-72 CONTRACTOR ORGANIZATIONAL CONFLICTS OF INTEREST (JAN 1993)

(a) Purpose. The primary purpose of this clause is to aid in ensuring that the contractor:

(1) Is not placed in a conflicting role because of current or planned interests (financial, contractual, organizational, or otherwise) which relate to the work under this contract; and

(2) Does not obtain an unfair competitive advantage over other parties by virtue of its performance of this contract.

(b) Scope. The restrictions described apply to performance or participation by the contractor, as defined in 48 CFR 2009.570-2 in the activities covered by this clause.

(c) Work for others.

(1) Notwithstanding any other provision of this contract, during the term of this contract, the contractor agrees to forego entering into consulting or other contractual arrangements with any firm or organization the result of which may give rise to a conflict of interest with respect to the work being performed under this contract. The contractor shall ensure that all employees under this contract abide by the provision of this clause. If the contractor has reason to believe, with respect to itself or any employee, that any proposed consultant or other contractual arrangement with any firm or organization may involve a potential conflict of interest, the contractor shall obtain the written approval of the contracting officer before the execution of such contractual arrangement.

(2) The contractor may not represent, assist, or otherwise support an NRC licensee or applicant undergoing an NRC audit, inspection, or review where the activities that are the subject of the audit, inspection, or review are the same as or substantially similar to the services within the scope of this contract (or task order as appropriate) except where the NRC licensee or applicant requires the contractor's support to explain or defend the contractor's prior work for the utility or other entity which NRC questions.

(3) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site, the contractor shall neither solicit nor perform work in the same or similar technical area for that licensee or applicant organization for a period commencing with the award of the task order or beginning of work on the site (if not a task order contract) and ending one year after completion of all work under the associated task order, or last time at the site (if not a task order contract).

(4) When the contractor performs work for the NRC under this contract at any NRC licensee or applicant site,

(i) The contractor may not solicit work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate.

(ii) The contractor may not perform work at that site for that licensee or applicant during the period of performance of the task order or the contract, as appropriate, and for one year thereafter.

(iii) Notwithstanding the foregoing, the contracting officer may authorize the contractor to solicit or perform this type of work (except work in the same or similar technical area) if the contracting officer determines that the situation will not pose a potential for technical bias or unfair competitive advantage.

(d) Disclosure after award.

(1) The contractor warrants that to the best of its knowledge and belief, and except as otherwise set forth in this contract, that it does not have any organizational conflicts of interest as defined in 48 CFR 2009.570-2.

(2) The contractor agrees that if, after award, it discovers organizational conflicts of interest with respect to this contract, it shall make an immediate and full disclosure in writing to the contracting officer. This statement must include a description of the action which the contractor has taken or proposes to take to avoid or mitigate such conflicts. The NRC may, however, terminate the contract if termination is in the best interest of the Government.

(3) It is recognized that the scope of work of a task-order-type contract necessarily encompasses a broad spectrum of activities. Consequently, if this is a task-order-type contract, the contractor agrees that it will disclose all proposed new work involving NRC licensees or applicants which comes within the scope of work of the underlying contract. Further, if this contract involves work at a licensee or applicant site, the contractor agrees to exercise diligence to discover and disclose any new work at that licensee or applicant site. This disclosure must be made before the submission of a bid or proposal to the utility or other regulated entity and must be received by the NRC at least 15 days before the proposed award date in any event, unless a written justification demonstrating urgency and due diligence to discover and disclose is provided by the contractor and approved by the contracting officer. The disclosure must include the statement of work, the dollar value of the proposed contract, and any other documents that are needed to fully describe the proposed work for the regulated utility or other regulated entity. NRC may deny approval of the disclosed work only when the NRC has issued a task order which includes the technical area and, if site-specific, the site, or has plans to issue a task order which includes the technical area and, if site-specific, the site, or when the work violates paragraphs (c)(2), (c)(3) or (c)(4) of this section.

(e) Access to and use of information.

(1) If in the performance of this contract, the contractor obtains access to information, such as NRC plans, policies, reports, studies, financial plans, internal data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or the Freedom of Information Act (5 U.S.C. Section 552 (1986)), the contractor agrees not to:

(i) Use this information for any private purpose until the information has been released to the public;

(ii) Compete for work for the Commission based on the information for a period of six months after either the completion of this contract or the release of the information to the public, whichever is first;

(iii) Submit an unsolicited proposal to the Government based on the information until one year after the release of the information to the public; or

(iv) Release the information without prior written approval by the contracting officer unless the information has previously been released to the public by the NRC.

(2) In addition, the contractor agrees that, to the extent it receives or is given access to proprietary data, data protected by the Privacy Act of 1974 (5 U.S.C. Section 552a (1988)), or the Freedom of Information Act (5 U.S.C. Section 552 (1986)), or other confidential or privileged technical, business, or financial information under this contract, the contractor shall treat the information in accordance with restrictions placed on use of the information.

(3) Subject to patent and security provisions of this contract, the contractor shall have the right to use technical data it produces under this contract for private purposes provided that all requirements of this contract have been met.

(f) Subcontracts. Except as provided in 48 CFR 2009.570-2, the contractor shall include this clause, including this paragraph, in subcontracts of any tier. The terms contract, contractor, and contracting officer, must be appropriately modified to preserve the Government's rights.

(g) Remedies. For breach of any of the above restrictions, or for intentional nondisclosure or misrepresentation of any

relevant interest required to be disclosed concerning this contract or for such erroneous representations that necessarily imply bad faith, the Government may terminate the contract for default, disqualify the contractor from subsequent contractual efforts, and pursue other remedies permitted by law or this contract.

(h) Waiver. A request for waiver under this clause must be directed in writing to the contracting officer in accordance with the procedures outlined in 48 CFR 2009.570-9.

(i) Follow-on effort. The contractor shall be ineligible to participate in NRC contracts, subcontracts, or proposals therefor (solicited or unsolicited), which stem directly from the contractor's performance of work under this contract. Furthermore, unless so directed in writing by the contracting officer, the contractor may not perform any technical consulting or management support services work or evaluation activities under this contract on any of its products or services or the products or services of another firm if the contractor has been substantially involved in the development or marketing of the products or services.

(1) If the contractor, under this contract, prepares a complete or essentially complete statement of work or specifications, the contractor is not eligible to perform or participate in the initial contractual effort which is based on the statement of work or specifications. The contractor may not incorporate its products or services in the statement of work or specifications unless so directed in writing by the contracting officer, in which case the restrictions in this paragraph do not apply.

(2) Nothing in this paragraph precludes the contractor from offering or selling its standard commercial items to the Government.

H.2 2052.215-70 KEY PERSONNEL (JAN 1993)

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



The contractor agrees that personnel may not be removed from the contract work or replaced without compliance with paragraphs (b) and (c) of this section.

(b) If one or more of the key personnel, for whatever reason, becomes, or is expected to become, unavailable for work under this contract for a continuous period exceeding 30 work days, or is expected to devote substantially less effort to the work than indicated in the proposal or initially anticipated, the contractor shall immediately notify the contracting officer and shall, subject to the concurrence of the contracting officer, promptly replace the personnel with personnel of at least substantially equal ability and qualifications.

(c) Each request for approval of substitutions must be in writing and contain a detailed explanation of the circumstances necessitating the proposed substitutions. The request must also contain a complete resume for the proposed substitute and other information requested or needed by the contracting officer to evaluate the proposed substitution. The contracting officer and the project officer shall evaluate the contractor's request and the contracting officer shall promptly notify the contractor of his or her decision in writing.

(d) If the contracting officer determines that suitable and timely replacement of key personnel who have been reassigned, terminated, or have otherwise become unavailable for the contract work is not reasonably forthcoming, or that the resultant reduction of productive effort would be so substantial as to impair the successful completion of the contract or the service order, the contract may be terminated by the contracting officer for default or for the convenience of the Government, as appropriate. If the contracting officer finds the contractor at fault for the condition, the contract price or fixed fee may be equitably adjusted downward to compensate the Government for any resultant delay, loss, or damage.

H.3 2052.235-70 PUBLICATION OF RESEARCH RESULTS (OCT 1999)

(a) The principal investigator(s)/contractor shall comply with the provisions of NRC Management Directive 3.8 (Vol. 3, Part 1) and NRC Handbook 3.8 (Parts I-IV) regarding publication in refereed scientific and engineering journals or dissemination to the public of any information, oral or written, concerning the work performed under this contract. Failure to comply with this clause shall be grounds for termination of this contract.

(b) The principal investigator(s)/contractor may publish the results of this work in refereed scientific and engineering journals or in open literature and present papers at public or association meetings at interim stages of work, in addition to submitting to NRC the final reports and other deliverables required under this contract. However, such publication and papers shall focus on advances in science and technology and minimize conclusions and/or recommendations which may have regulatory implications.

(c) The principal investigator(s) shall coordinate all such publications with, and transmit a copy of the proposed article or paper to, the NRC Contracting Officer or Project Officer, prior to publication. The NRC agrees to review and provide comments within thirty (30) days after receipt of a proposed publication. However, in those cases where the information to be published is (1) subject to Commission approval, (2) has not been ruled upon, or (3) disapproved by the Commission, the NRC reserves the right to disapprove or delay the publication. Further, if the NRC disagrees with the proposed publication for any reason, it reserves the right to require that any publication not identify the NRC's sponsorship of the work and that any associated publication costs shall be borne by the contractor.

H.4 2052.235-71 SAFETY, HEALTH, AND FIRE PROTECTION (JAN 1993)

The contractor shall take all reasonable precautions in the performance of the work under this contract to protect the health and safety of its employees and of members of the public, including NRC employees and contractor personnel, and to minimize danger from all hazards to life and property. The contractor shall comply with all applicable health, safety, and fire protection regulations and requirements (including reporting requirements) of the Commission and the Department of Labor. If the contractor fails to comply with these regulations or requirements, the contracting office may, without prejudice to any other legal or contractual rights of the Commission, issue an order stopping all or any part of the work. Thereafter, a start work order for resumption of work may be issued at the discretion of the contracting officer. The contractor may not make a claim for an extension of time or for compensation or damages by reason of, or in connection with, this type of work stoppage.

H.5 2052.242-70 RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL VIEWS (DPVS) (OCT 1999)

(a) The Nuclear Regulatory Commission's (NRC) policy is to support the contractor's expression of professional health and safety related concerns associated with the contractor's work for NRC that may differ from a prevailing NRC staff view, disagree with an NRC decision or policy position, or take issue with proposed or established agency practices. An occasion may arise when an NRC contractor, contractor's personnel, or subcontractor personnel believes that a conscientious expression of a competent judgement is required to document such concerns on matters directly associated with its performance of the contract. The NRC's policy is to support these instances as Differing Professional Views (DPVs).

(b) The procedure that will be used provides for the expression and resolution of differing professional views (DPVs) of health and safety related concerns associated with the mission of the agency by NRC contractors, contractor personnel or subcontractor personnel on matters directly associated with its performance of the contract. This procedure may be found in Attachments to this document. The contractor shall provide a copy of the NRC DPV procedure to all of its employees performing under this contract and to all subcontractors who shall, in turn, provide a copy of the procedure to its employees. The prime contractor or subcontractor shall submit all DPV's received but need not endorse them.

H.6 2052.242-71 PROCEDURES FOR RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL VIEWS (DPVS) (OCT 1999)

(a) The following procedure provides for the expression and resolution of differing professional views (DPVs) of health and safety related concerns of NRC contractors and contractor personnel on matters connected to the subject of the contract. Subcontractor DPVs must be submitted through the prime contractor. The prime contractor or subcontractor shall submit all DPV's received but need not endorse them.

(b) The NRC may authorize up to eight reimbursable hours for the contractor to document, in writing, a DPV by the contractor, the contractor's personnel, or subcontractor personnel. The contractor shall not be entitled to any compensation for effort on a DPV which exceeds the specified eight hour limit.

(c) Before incurring costs to document a DPV, the contractor shall first determine whether there are sufficient funds obligated under the contract which are available to cover the costs of writing a DPV. If there are insufficient obligated funds under the contract, the contractor shall first request the NRC contracting officer for additional funding to cover the costs of preparing the DPV and authorization to proceed.

(d) Contract funds shall not be authorized to document an allegation where the use of this NRC contractor DPV process is inappropriate. Examples of such instances are: allegations of wrongdoing which should be addressed directly to the NRC Office of the Inspector General (OIG), issues submitted anonymously, or issues raised which have already been considered, addressed, or rejected, absent significant new information. This procedure does not provide anonymity. Individuals desiring anonymity should contact the NRC OIG or submit the information under NRC's Allegation Program, as appropriate.

(e) When required, the contractor shall initiate the DPV process by submitting a written statement directly to the NRC Office Director or Regional Administrator responsible for the contract, with a copy to the Contracting Officer, Division of Contracts and Property Management, Office of Administration. Each DPV submitted will be evaluated on its own merits.

(f) The DPV, while being brief, must contain the following as it relates to the subject matter of the contract:

(1) A summary of the prevailing NRC view, existing NRC decision or stated position, or the proposed or established NRC practice.

(2) A description of the submitter's views and how they differ from any of the above items.

3) The rationale for the submitter's views, including an assessment based on risk, safety and cost benefit considerations of the consequences should the submitter's position not be adopted by NRC.

) The Office Director or Regional Administrator will immediately forward the submittal to the NRC DPV Review Panel and acknowledge receipt of the DPV, ordinarily within five (5) calendar days of receipt.

) The panel will normally review the DPV within seven calendar days of receipt to determine whether enough information has been supplied to undertake a detailed review of the issue. Typically, within 30 calendar days of receipt of the necessary information to begin a review, the panel will provide a written report of its findings to the Office Director or Regional Administrator and to the Contracting Officer, which includes a recommended course of action.

The Office Director or Regional Administrator will consider the DPV Review Panel's report, make a decision on the DPV and provide a written decision to the contractor and the Contracting Officer normally within seven calendar days of receipt of the panel's recommendation.

Subsequent to the decision made regarding the DPV Review Panel's report, a summary of the issue and its position will be included in the NRC Weekly Information Report submitted by the Office Director. The DPV file will be retained in the Office or Region for a minimum of one year thereafter. For purposes of the contract, the DPV shall be considered a deliverable under the contract. Based upon the Office Director or Regional Administrator's report, the contract will be closed.

7 COMPLIANCE WITH U.S. IMMIGRATION LAWS AND REGULATIONS

Contractors are responsible to ensure that their alien personnel are not in violation of United States Immigration and Naturalization (INS) laws and regulations, including employment authorization documents and visa requirements. Each contractor employee of the Contractor must be lawfully admitted for permanent residence as evidenced by Alien Registration Receipt Card Form I-151 or must present other evidence from the Immigration and Naturalization Services that employment will not affect his/her immigration status. The INS Office of Business Liaison (OBL) provides information to contractors to help them understand the employment eligibility verification process for non-US citizens. This information can be found on the INS website, <http://www.ins.usdoj.gov/graphics/services/employerinfo/index.htm#obl>.

NRC reserves the right to deny or withdraw Contractor use or access to NRC facilities or its equipment/services, or take any number of contract administrative actions (e.g., disallow costs, terminate for cause) should the Contractor fail to meet the Contractor's responsibility under this clause.

(End of Clause)

8 GOVERNMENT FURNISHED EQUIPMENT/PROPERTY - NONE PROVIDED (JUN 1988)

The Government will not provide any equipment/property under this contract.

9 SEAT BELTS

Contractors, subcontractors, and grantees, are encouraged to adopt and enforce on-the-job seat belt policies and programs for their employees when operating company-owned, rented, or personally owned vehicles.

H.10 ANNUAL AND FINAL CONTRACTOR PERFORMANCE EVALUATIONS

Annual and final evaluations of contractor performance under this contract will be prepared in accordance with FAR 42.15, "Contractor Performance Information," normally at the time the contractor is notified of the NRC's intent to exercise the contract option. If the multi-year contract does not have option years, then an annual evaluation will be prepared (state time for annual evaluation). Final evaluations of contractor performance will be prepared at the expiration of the contract during the contract closeout process.

The Contracting Officer will transmit the NRC Project Officer's annual and final contractor performance evaluations to the contractor's Project Manager, unless otherwise instructed by the contractor. The contractor will be permitted thirty days to review the document. The contractor may concur without comment, submit additional information, or request a meeting to discuss the performance evaluation. The Contracting Officer may request the contractor's Project Manager to attend a meeting to discuss the performance evaluation.

Where a contractor concurs with, or takes no exception to an annual performance evaluation, the Contracting Officer will consider such evaluation final and releasable for source selection purposes. Disagreements between the parties regarding a performance evaluation will be referred to an individual one level above the Contracting Officer, whose decision will be final.

The Contracting Officer will send a copy of the completed evaluation report, marked "For Official Use Only," to the contractor's Project Manager for their records as soon as practicable after it has been finalized. The completed evaluation report also will be used as a tool to improve communications between the NRC and the contractor and to improve contract performance.

The completed annual performance evaluation will be used to support future award decisions in accordance with FAR 42.1502(a) and 42.1503(c). During the period the information is being used to provide source selection information, the completed annual performance evaluation will be released to only two parties - the Federal government personnel performing the source selection evaluation and the contractor under evaluation if the contractor does not have a copy of the report already.

PART II - CONTRACT CLAUSES**SECTION I - CONTRACT CLAUSES****I.1 NOTICE LISTING CONTRACT CLAUSES INCORPORATED BY REFERENCE**

The following contract clauses pertinent to this section are hereby incorporated by reference (by Citation Number, Title, and Date) in accordance with the clause at FAR "52.252-2 CLAUSES INCORPORATED BY REFERENCE" in Section I of this contract. See FAR 52.252-2 for an internet address (if specified) for electronic access to the full text of a clause.

NUMBER	TITLE	DATE
	FEDERAL ACQUISITION REGULATION (48 CFR Chapter 1)	
52.202-1	DEFINITIONS	DEC 2001
52.203-3	GRATUITIES	APR 1984
52.203-5	COVENANT AGAINST CONTINGENT FEES	APR 1984
52.203-6	RESTRICTIONS ON SUBCONTRACTOR SALES TO THE GOVERNMENT	JUL 1995
52.203-7	ANTI-KICKBACK PROCEDURES	JUL 1995
52.203-8	CANCELLATION, RESCISSION, AND RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY	JAN 1997
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	JAN 1997
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	JUN 1997
52.204-4	PRINTED OR COPIED DOUBLE-SIDED ON RECYCLED PAPER	AUG 2000
52.209-6	PROTECTING THE GOVERNMENT'S INTEREST WHEN SUBCONTRACTING WITH CONTRACTORS DEBARRED, SUSPENDED, OR PROPOSED FOR DEBARMENT	JUL 1995
52.215-2	AUDIT AND RECORDS--NEGOTIATION	JUN 1999
52.215-8	ORDER OF PRECEDENCE--UNIFORM CONTRACT FORMAT	OCT 1997
52.215-10	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA	OCT 1997
52.215-12	SUBCONTRACTOR COST OR PRICING DATA	OCT 1997
52.215-15	PENSION ADJUSTMENTS AND ASSET REVERSIONS (DEC 1998)	DEC 1998
52.215-18	REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS OTHER THAN PENSIONS (PRB)	OCT 1997
52.215-19	NOTIFICATION OF OWNERSHIP CHANGES	OCT 1997
52.216-7	ALLOWABLE COST AND PAYMENT	FEB 2002
52.216-8	FIXED-FEE	MAR 1997
52.219-8	UTILIZATION OF SMALL BUSINESS CONCERNS	OCT 2000

52.219-9	SMALL BUSINESS SUBCONTRACTING PLAN ALTERNATE II (OCT 2001)	JAN 2002
52.219-16	LIQUIDATED DAMAGES-SMALL BUSINESS SUBCONTRACTING PLAN	JAN 1999
52.222-3	CONVICT LABOR	AUG 1996
52.222-19	CHILD LABOR - COOPERATION WITH AUTHORITIES AND REMEDIES	DEC 2001
52.222-21	PROHIBITION OF SEGREGATED FACILITIES	FEB 1999
52.222-26	EQUAL OPPORTUNITY	APR 2002
52.222-35	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	DEC 2001
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	JUN 1998
52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, AND OTHER ELIGIBLE VETERANS	DEC 2001
52.222-38	COMPLIANCE WITH VETERANS' EMPLOYMENT REPORTING REQUIREMENTS	DEC 2001
52.223-6	DRUG-FREE WORKPLACE	MAY 2001
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	JUL 2000
52.227-1	AUTHORIZATION AND CONSENT ALTERNATE I (APR 1984)	JUL 1995
52.227-2	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	AUG 1996
52.227-11	PATENT RIGHTS -- RETENTION BY THE CONTRACTOR (SHORT FORM)	JUN 1997
52.227-14	RIGHTS IN DATA--GENERAL	JUN 1987
52.228-7	INSURANCE--LIABILITY TO THIRD PERSONS	MAR 1996
52.230-2	COST ACCOUNTING STANDARDS	APR 1998
52.230-6	ADMINISTRATION OF COST ACCOUNTING STANDARDS	NOV 1999
52.232-17	INTEREST	JUN 1996
52.232-22	LIMITATION OF FUNDS	APR 1984
52.232-23	ASSIGNMENT OF CLAIMS	JAN 1986
52.232-34	PAYMENT BY ELECTRONIC FUNDS TRANSFER-- OTHER THAN CENTRAL CONTRACTOR REGISTRATION	MAY 1999
52.233-1	DISPUTES	DEC 1998
52.233-3	PROTEST AFTER AWARD ALTERNATE I (JUN 1985)	AUG 1996
52.242-1	NOTICE OF INTENT TO DISALLOW COSTS	APR 1984
52.242-3	PENALTIES FOR UNALLOWABLE COSTS	MAY 2001
52.242-4	CERTIFICATION OF FINAL INDIRECT COSTS	JAN 1997
52.242-13	BANKRUPTCY	JUL 1995
52.243-2	CHANGES--COST REIMBURSEMENT ALTERNATE V (APR 1984)	AUG 1987
52.244-5	COMPETITION IN SUBCONTRACTING	DEC 1996
52.246-23	LIMITATION OF LIABILITY	FEB 1997
52.246-25	LIMITATION OF LIABILITY--SERVICES	FEB 1997
52.249-6	TERMINATION (COST-REIMBURSEMENT)	SEP 1996
52.249-14	EXCUSABLE DELAYS	APR 1984
52.253-1	COMPUTER GENERATED FORMS	JAN 1991

I.2 52.222-2 PAYMENT FOR OVERTIME PREMIUMS (JUL 1990)

(a) The use of overtime is authorized under this contract if the overtime premium cost does not exceed \$0 or the overtime premium is paid for work--

(1) Necessary to cope with emergencies such as those resulting from accidents, natural disasters, breakdowns of production equipment, or occasional production bottlenecks of a sporadic nature;

(2) By indirect-labor employees such as those performing duties in connection with administration, protection, transportation, maintenance, standby plant protection, operation of utilities, or accounting;

(3) To perform tests, industrial processes, laboratory procedures, loading or unloading of transportation conveyances, and operations in flight or afloat that are continuous in nature and cannot reasonably be interrupted or completed otherwise; or

(4) That will result in lower overall costs to the Government.

(b) Any request for estimated overtime premiums that exceeds the amount specified above shall include all estimated overtime for contract completion and shall--

(1) Identify the work unit; e.g., department or section in which the requested overtime will be used, together with present workload, staffing, and other data of the affected unit sufficient to permit the Contracting Officer to evaluate the necessity for the overtime;

(2) Demonstrate the effect that denial of the request will have on the contract delivery or performance schedule;

(3) Identify the extent to which approval of overtime would affect the performance or payments in connection with other Government contracts, together with identification of each affected contract; and

(4) Provide reasons why the required work cannot be performed by using multishift operations or by employing additional personnel.

I.3 52.232-25 PROMPT PAYMENT (FEB 2002)

Notwithstanding any other payment clause in this contract, the Government will make invoice payments under the terms and conditions specified in this clause. The Government considers payment as being made on the day a check is dated or the date of an electronic funds transfer (EFT). Definitions of pertinent terms are set forth in sections 2.101, 32.001, and 32.902 of the Federal Acquisition Regulation. All days referred to in this clause are calendar days, unless otherwise specified. (However, see paragraph (a)(4) of this clause concerning payments due on Saturdays, Sundays, and legal holidays.)

(a) Invoice payments--

(1) Due date.

(i) Except as indicated in paragraphs (a)(2) and (c) of this clause, the due date for making invoice payments by the designated payment office is the later of the following two events:

(A) The 30th day after the designated billing office receives a proper invoice from the Contractor (except as

vided in paragraph (a)(1)(ii) of this clause).

(B) The 30th day after Government acceptance of supplies delivered or services performed. For a final invoice, the payment amount is subject to contract settlement actions, acceptance is deemed to occur on the effective date of contract settlement.

(ii) If the designated billing office fails to annotate the invoice with the actual date of receipt at the time of receipt, invoice payment due date is the 30th day after the date of the Contractor's invoice, provided the designated billing office receives a proper invoice and there is no disagreement over quantity, quality, or Contractor compliance with contract requirements.

2) Certain food products and other payments.

(1) Due dates on Contractor invoices for meat, meat food products, or fish; perishable agricultural commodities; and dairy products, edible fats or oils, and food products prepared from edible fats or oils are--

(A) For meat or meat food products, as defined in section 2(a)(3) of the Packers and Stockyard Act of 1921 (7 U.S.C. 182(3)), and as further defined in Pub. L. 98-181, including any edible fresh or frozen poultry meat, any perishable poultry meat food product, fresh eggs, and any perishable egg product, as close as possible to, but not later than, the 7th day after product delivery.

(B) For fresh or frozen fish, as defined in section 204(3) of the Fish and Seafood Promotion Act of 1986 (16 U.S.C. 1803(3)), as close as possible to, but not later than, the 7th day after product delivery.

(C) For perishable agricultural commodities, as defined in section 1(4) of the Perishable Agricultural Commodities Act of 1930 (7 U.S.C. 499a(4)), as close as possible to, but not later than, the 10th day after product delivery, unless another date is specified in the contract.

(D) For dairy products, as defined in section 111(e) of the Dairy Production Stabilization Act of 1983 (7 U.S.C. 162(e)), edible fats or oils, and food products prepared from edible fats or oils, as close as possible to, but not later than, the 10th day after the date on which a proper invoice has been received. Liquid milk, cheese, certain processed cheese products, butter, yogurt, ice cream, mayonnaise, salad dressings, and other similar products, fall within this classification. Nothing in the Act limits this classification to refrigerated products. When questions arise regarding the proper classification of a specific product, prevailing industry practices will be followed in specifying a contract payment due date. The burden of proof that a classification of a specific product is, in fact, prevailing industry practice is upon the Contractor making the representation.

(ii) If the contract does not require submission of an invoice for payment (e.g., periodic lease payments), the due date shall be as specified in the contract.

3) Contractor's invoice. The Contractor shall prepare and submit invoices to the designated billing office specified in the contract. A proper invoice must include the items listed in paragraphs (a)(3)(i) through (a)(3)(x) of this clause. If the invoice does not comply with these requirements, the designated billing office will return it within 7 days after receipt (3 days for meat, meat food products, or fish; 5 days for perishable agricultural commodities, dairy products, edible fats or oils, and food products prepared from edible fats or oils), with the reasons why it is not a proper invoice. The Government will take into account untimely notification when computing any interest penalty owed the Contractor.

(i) Name and address of the Contractor.

(ii) Invoice date and invoice number. (The Contractor should date invoices as close as possible to the date of the mailing or transmission.)

(iii) Contract number or other authorization for supplies delivered or services performed (including order number and contract line item number).

(iv) Description, quantity, unit of measure, unit price, and extended price of supplies delivered or services performed.

(v) Shipping and payment terms (e.g., shipment number and date of shipment, discount for prompt payment terms). Bill of lading number and weight of shipment will be shown for shipments on Government bills of lading.

(vi) Name and address of Contractor official to whom payment is to be sent (must be the same as that in the contract or in a proper notice of assignment).

(vii) Name (where practicable), title, phone number, and mailing address of person to notify in the event of a defective invoice.

(viii) Taxpayer Identification Number (TIN). The Contractor shall include its TIN on the invoice only if required elsewhere in this contract.

(ix) Electronic funds transfer (EFT) banking information.

(A) The Contractor shall include EFT banking information on the invoice only if required elsewhere in this contract.

(B) If EFT banking information is not required to be on the invoice, in order for the invoice to be a proper invoice, the Contractor shall have submitted correct EFT banking information in accordance with the applicable solicitation provision (e.g., 52.232- 38, Submission of Electronic Funds Transfer Information with Offer), contract clause (e.g., 52.232-33, Payment by Electronic Funds Transfer--Central Contractor Registration, or 52.232-34, Payment by Electronic Funds Transfer--Other Than Central Contractor Registration), or applicable agency procedures.

(C) EFT banking information is not required if the Government waived the requirement to pay by EFT.

(x) Any other information or documentation required by the contract (e.g., evidence of shipment).

(4) Interest penalty. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if payment is not made by the due date and the conditions listed in paragraphs (a)(4)(i) through (a)(4)(iii) of this clause are met, if applicable. However, when the due date falls on a Saturday, Sunday, or legal holiday, the designated payment office may make payment on the following working day without incurring a late payment interest penalty.

(i) The designated billing office received a proper invoice.

(ii) The Government processed a receiving report or other Government documentation authorizing payment, and there was no disagreement over quantity, quality, or Contractor compliance with any contract term or condition.

(iii) In the case of a final invoice for any balance of funds due the Contractor for supplies delivered or services performed, the amount was not subject to further contract settlement actions between the Government and the Contractor.

(5) Computing penalty amount. The Government will compute the interest penalty in accordance with the Office of Management and Budget prompt payment regulations at 5 CFR part 1315.

(i) For the sole purpose of computing an interest penalty that might be due the Contractor, Government acceptance is deemed to occur constructively on the 7th day (unless otherwise specified in this contract) after the Contractor delivers the supplies or performs the services in accordance with the terms and conditions of the contract, unless there is a disagreement over quantity, quality, or Contractor compliance with a contract provision. If actual acceptance occurs within the constructive acceptance period, the Government will base the determination of an interest penalty on the actual date of acceptance. The constructive acceptance requirement does not, however, compel Government officials to accept supplies or services, perform contract administration functions, or make payment prior to fulfilling their responsibilities.

(ii) The prompt payment regulations at 5 CFR 1315.10(c) do not require the Government to pay interest penalties if payment delays are due to disagreement between the Government and the Contractor over the payment amount or other issues involving contract compliance, or on amounts temporarily withheld or retained in accordance with the terms of the contract. The Government and the Contractor shall resolve claims involving disputes and any interest that may be payable in accordance with the clause at FAR 52.233-1, Disputes.

(6) Discounts for prompt payment. The designated payment office will pay an interest penalty automatically, without request from the Contractor, if the Government takes a discount for prompt payment improperly. The Government will calculate the interest penalty in accordance with the prompt payment regulations at 5 CFR part 1315.

(7) Additional interest penalty.

(i) The designated payment office will pay a penalty amount, calculated in accordance with the prompt payment regulations at 5 CFR part 1315 in addition to the interest penalty amount only if--

(A) The Government owes an interest penalty of \$1 or more;

(B) The designated payment office does not pay the interest penalty within 10 days after the date the invoice amount is paid; and

(C) The Contractor makes a written demand to the designated payment office for additional penalty payment, in accordance with paragraph (a)(7)(ii) of this clause, postmarked not later than 40 days after the invoice amount is paid.

(ii)(A) The Contractor shall support written demands for additional penalty payments with the following data. The Government will not request any additional data. The Contractor shall--

(1) Specifically assert that late payment interest is due under a specific invoice, and request payment of all overdue late payment interest penalty and such additional penalty as may be required;

(2) Attach a copy of the invoice on which the unpaid late payment interest is due; and

(3) State that payment of the principal has been received, including the date of receipt.

(B) If there is no postmark or the postmark is illegible--

(1) The designated payment office that receives the demand will annotate it with the date of receipt, provided the demand is received on or before the 40th day after payment was made; or

(2) If the designated payment office fails to make the required annotation, the Government will determine the demand's validity based on the date the Contractor has placed on the demand, provided such date is no later than the 40th day after payment was made.

(iii) The additional penalty does not apply to payments regulated by other Government regulations (e.g., payments under utility contracts subject to tariffs and regulation).

(b) Contract financing payment. If this contract provides for contract financing, the Government will make contract financing payments in accordance with the applicable contract financing clause.

(c) Fast payment procedure due dates. If this contract contains the clause at 52.213-1, Fast Payment Procedure, payments will be made within 15 days after the date of receipt of the invoice.

(d) Overpayments. If the Contractor becomes aware of a duplicate payment or that the Government has otherwise overpaid on an invoice payment, the Contractor shall immediately notify the Contracting Officer and request instructions for disposition of the overpayment.

**I.4 52.244-2 SUBCONTRACTS (AUG 1998)
ALTERNATE II (AUG 1998)**

(a) Definitions. As used in this clause--

Approved purchasing system means a Contractor's purchasing system that has been reviewed and approved in accordance with Part 44 of the Federal Acquisition Regulation (FAR).

Consent to subcontract means the Contracting Officer's written consent for the Contractor to enter into a particular subcontract.

Subcontract means any contract, as defined in FAR Subpart 2.1, entered into by a subcontractor to furnish supplies or services for performance of the prime contract or a subcontract. It includes, but is not limited to, purchase orders, and changes and modifications to purchase orders.

(b) This clause does not apply to subcontracts for special test equipment when the contract contains the clause at FAR 52.245-18, Special Test Equipment.

(c) When this clause is included in a fixed-price type contract, consent to subcontract is required only on unpriced contract actions (including unpriced modifications or unpriced delivery orders), and only if required in accordance with paragraph (d) or (e) of this clause.

(d) If the Contractor does not have an approved purchasing system, consent to subcontract is required for any subcontract that--

- (1) Is of the cost-reimbursement, time-and-materials, or labor- hour type; or
- (2) Is fixed-price and exceeds--

(i) For a contract awarded by the Department of Defense, the Coast Guard, or the National Aeronautics and Space Administration, the greater of the simplified acquisition threshold or 5 percent of the total estimated cost of the contract; or

(ii) For a contract awarded by a civilian agency other than the Coast Guard and the National Aeronautics and Space Administration, either the simplified acquisition threshold or 5 percent of the total estimated cost of the contract.

(e) If the Contractor has an approved purchasing system, the Contractor nevertheless shall obtain the Contracting Officer's written consent before placing the following subcontracts:

any of the elicitation panel consultants

(f)(1) The Contractor shall notify the Contracting Officer reasonably in advance of placing any subcontract or modification thereof for which consent is required under paragraph (c), (d), or (e) of this clause, including the following

information:

- (i) A description of the supplies or services to be subcontracted.
- (ii) Identification of the type of subcontract to be used.
- (iii) Identification of the proposed subcontractor.
- (iv) The proposed subcontract price.
- (v) The subcontractor's current, complete, and accurate cost or pricing data and Certificate of Current Cost or Pricing Data, if required by other contract provisions
- (vi) The subcontractor's Disclosure Statement or Certificate relating to Cost Accounting Standards when such data are required by other provisions of this contract.
- (vii) A negotiation memorandum reflecting--
 - (A) The principal elements of the subcontract price negotiations;
 - (B) The most significant considerations controlling establishment of initial or revised prices;
 - (C) The reason cost or pricing data were or were not required;
 - (D) The extent, if any, to which the Contractor did not rely on the subcontractor's cost or pricing data in determining the price objective and in negotiating the final price;
 - (E) The extent to which it was recognized in the negotiation that the subcontractor's cost or pricing data were not accurate, complete, or current; the action taken by the Contractor and the subcontractor; and the effect of any such defective data on the total price negotiated;
 - (F) The reasons for any significant difference between the Contractor's price objective and the price negotiated; and
 - (G) A complete explanation of the incentive fee or profit plan when incentives are used. The explanation shall identify each critical performance element, management decisions used to quantify each incentive element, reasons for the incentives, and a summary of all trade-off possibilities considered.
- (2) If the Contractor has an approved purchasing system and consent is not required under paragraph (c), (d), or (e) of this clause, the Contractor nevertheless shall notify the Contracting Officer reasonably in advance of entering into any (i) cost-plus- fixed-fee subcontract, or (ii) fixed-price subcontract that exceeds either the simplified acquisition threshold or 5 percent of the total estimated cost of this contract. The notification shall include the information required by paragraphs (f)(1)(i) through (f)(1)(iv) of this clause.
- (g) Unless the consent or approval specifically provides otherwise, neither consent by the Contracting Officer to any subcontract nor approval of the Contractor's purchasing system shall constitute a determination--
 - (1) Of the acceptability of any subcontract terms or conditions;
 - (2) Of the allowability of any cost under this contract; or
 - (3) To relieve the Contractor of any responsibility for performing this contract.
- (h) No subcontract or modification thereof placed under this contract shall provide for payment on a cost-plus-a-percentage-of- cost basis, and any fee payable under cost-reimbursement type subcontracts shall not exceed

the fee limitations in FAR 15.404- 4(c)(4)(i).

(i) The Contractor shall give the Contracting Officer immediate written notice of any action or suit filed and prompt notice of any claim made against the Contractor by any subcontractor or vendor that, in the opinion of the Contractor, may result in litigation related in any way to this contract, with respect to which the Contractor may be entitled to reimbursement from the Government.

(j) The Government reserves the right to review the Contractor's purchasing system as set forth in FAR Subpart 44.3.

(k) Paragraphs (d) and (f) of this clause do not apply to the following subcontracts, which were evaluated during negotiations:

Engineering Mechanics Corporation of Columbus

I.5 52.252-2 CLAUSES INCORPORATED BY REFERENCE (FEB 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

SECTION J - LIST OF ATTACHMENTS

ATTACHMENT NUMBER	TITLE	DATE	NO. PAGES
J.1	Billing Instructions		-
J.2	NRCAR 2009.5 COI		-
J.3	NRC Handbook 3.8		-
J.4	ACH Vendor Registration		-
J.5	Contractor Spending Plan		-