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<b>AWARD/CONTRACT</b>		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)		RATING		PAGE OF PAGES 1 46	
2. CONTRACT (Proc. Inst. Ident.) NO. NRC-04-97-046		3. EFFECTIVE DATE 07/01/97		4. REQUISITION/PURCHASE REQUEST/PROJECT NO. RES-97-046/RES-C97-009			
5. ISSUED BY  U.S. Nuclear Regulatory Commission Division of Contracts and Property Management Washington, DC 20555		CODE		6. ADMINISTERED BY (If other than Item 5)		CODE	
7. NAME AND ADDRESS OF CONTRACTOR (No., street, city, county, State, and ZIP Code)  Purdue Research Foundation 1021 Hovde Hall West Lafayette, IN 47907-1021				8. DELIVERY <input type="checkbox"/> FOB ORIGIN <input checked="" type="checkbox"/> OTHER (See below) destination			
				9. DISCOUNT FOR PROMPT PAYMENT  net 30			
				10. SUBMIT INVOICES ( 4 copies unless otherwise specified) TO THE ADDRESS SHOWN IN:		ITEM 5	
CODE		FACILITY CODE					
11. SHIP TO/MARK FOR  U.S. Nuclear Regulatory Commission Office of Nuclear Regulatory Research, MS T-10E46 Washington, DC 20555		CODE		12. PAYMENT WILL BE MADE BY  U.S. Nuclear Regulatory Commission Division of Accounting and Finance MS T-9-H-4 Washington, DC 20555		CODE	
13. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION: <input type="checkbox"/> 10 USC 2304(c)( ) <input type="checkbox"/> 41 USC 253(c)( )				14. ACCOUNTING AND APPROPRIATION DATA 31X0200 76015115005 W6749 252A \$204,624.00			
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	See Section B						
15G. TOTAL AMOUNT OF CONTRACT					\$2,046,235		
16. TABLE OF CONTENTS							
SEC.	DESCRIPTION		PAGE(S)	SEC.	DESCRIPTION		PAGE(S)
PART I - THE SCHEDULE				PART II - CONTRACT CLAUSES			
X	A	SOLICITATION/CONTRACT FORM	1	X	I	CONTRACT CLAUSES	35-44
X	B	SUPPLIES OR SERVICES AND PRICES/COSTS	2-4	PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACH.			
X	C	DESCRIPTION/SPECS/WORK STATEMENT	5-13	X	J	LIST OF ATTACHMENTS	46
X	D	PACKAGING AND MARKING	14	PART IV - REPRESENTATIONS AND INSTRUCTIONS			
X	E	INSPECTION AND ACCEPTANCE	15	K	REPRESENTATIONS, CERTIFICATIONS AND OTHER STATEMENTS OF OFFERORS		
X	F	DELIVERIES OR PERFORMANCE	16-19	L	INSTRS, CONDS, AND NOTICES TO OFFERORS		
X	G	CONTRACT ADMINISTRATION DATA	21-23	M	EVALUATION FACTORS FOR AWARD		
X	H	SPECIAL CONTRACT REQUIREMENTS	28-34				
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 3 copies to issuing office.) Contractor agrees to furnish and deliver all items or perform all the services set forth or other- wise identified above and on any continuation sheets for the consideration stated herein. The rights and obliga- tions 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 pro- visions, representations, certifications, and specifica- tions, 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 addi- tions or changes are set forth in full above, is hereby accepted as to the items listed above and on any contin- uation 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 (type or print)  Louis Pellegrino, Director Office of Sponsored Programs				20A. NAME OF CONTRACTING OFFICER  Mary H. Mace Contracting Officer			
19B. NAME OF CONTRACTOR  <i>Louis Pellegrino</i> (Signature of person authorized to sign)		19C. DATE SIGNED  6/26/97		20B. UNITED STATES OF AMERICA  <i>Mary H. Mace</i> (Signature of Contracting Officer)		20C. DATE SIGNED  6-30-97	
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# TABLE OF CONTENTS

PAGE

PART I - THE SCHEDULE . . . . .	2
SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS . . . . .	2
B.1 PROJECT TITLE . . . . .	2
B.2 BRIEF DESCRIPTION OF WORK (MAR 1987) . . . . .	2
ALTERNATE 1 (JUN 1988)	
B.3 CONSIDERATION AND OBLIGATION--TASK ORDERS (AUG 1989) . . . . .	2
ALTERNATE 1 (JUN 1991)	
B.4 INCORPORATION OF SMALL BUSINESS, SMALL DISADVANTAGED BU WOMEN OWNED SMALL BUSINESS SUBCONTRACTING PLAN	4
SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT . . . . .	5
C.1 BACKGROUND . . . . .	5
C.2 OBJECTIVE . . . . .	5
C.3 SCOPE OF WORK . . . . .	6
C.3.1 TASK AREA A - MODERN CODE ARCHITECTURE . . . . .	6
C.3.2 TASK AREA B - ADVANCED NUMERICAL SOLUTION SCHEME . . . . .	6
C.3.3 TASK AREA C - IMPROVED TWO-PHASE MODELING . . . . .	7
C.3.4 TASK AREA D - ACCURATE AND CONSISTENT CONSTITUTIVE MODELS AND CORRELATIONS	8
C.3.5 TASK AREA E - GRAPHICAL USER INTERFACE (GUI) . . . . .	10
C.3.6 TASK AREA F - EVALUATION OF COMPUTATIONAL FLUID . . . . . DYNAMICS (CFD) CAPABILITIES	12
C.4 REPORTING REQUIREMENTS . . . . .	13
C.5 MEETINGS AND TRAVEL . . . . .	13
C.6 NRCAR 2052.215-83 TRAVEL APPROVALS (JAN 1993) . . . . .	13
SECTION D - PACKAGING AND MARKING . . . . .	14
D.1 PACKAGING AND MARKING (MAR 1987) . . . . .	14
SECTION E - INSPECTION AND ACCEPTANCE . . . . .	15
E.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)	15
E.2 PLACE OF INSPECTION AND ACCEPTANCE (MAR 1987) . . . . .	15
SECTION F - DELIVERIES OR PERFORMANCE . . . . .	16
F.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)	16
F.2 NRCAR 2052.212-70 PREPARATION OF TECHNICAL . . . . . REPORTS (JAN 1993)	16
F.3 NRCAR 2052.212-71 TECHNICAL PROGRESS REPORT . . . . .	16
F.4 2052.212-72 FINANCIAL STATUS REPORT (DEC 1995) . . . . .	17
F.5 PLACE OF DELIVERY--REPORTS (JUN 1988) . . . . .	19
F.6 DURATION OF CONTRACT PERIOD (MAR 1987) . . . . . ALTERNATE 4 (JUN 1988)	19
F.7 RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL . . . . . VIEWS (DPVs)	19
SECTION G - CONTRACT ADMINISTRATION DATA . . . . .	21
G.1 NRCAR 2052.215-71 PROJECT OFFICER AUTHORITY . . . . . (JAN 1993)	21
G.2 NRCAR 2052.215-82 TRAVEL REIMBURSEMENT . . . . .	23

	TABLE OF CONTENTS	PAGE
	- ALTERNATE 1 (JAN 1993)	
G.3	NRCAR 2052.216-71 INDIRECT COST RATES (JAN 1993)	24
G.4	NRCAR 2052.216-74 TASK ORDER PROCEDURES (JAN 1993)	24
G.5	NRCAR 2052.216-75 ACCELERATED TASK ORDER PROCEDURES (JA	26
G.6	ELECTRONIC PAYMENT	26
SECTION H	- SPECIAL CONTRACT REQUIREMENTS	28
H.1	NRCAR 2052.209-73 CONTRACTOR ORGANIZATIONAL CONFLICTS OF INTEREST (JAN 1993)	28
H.2	NRCAR 2052.215-70 KEY PERSONNEL (JAN 1993)	32
H.3	NRCAR 2052.235-71 PUBLICATION OF RESEARCH RESULTS - UNIVERSITIES (JAN 1993)	33
H.4	NRCAR 2052.235-72 SAFETY, HEALTH, AND FIRE PROTECTION (JAN 1993)	34
PART II	- CONTRACT CLAUSES	35
SECTION I	- CONTRACT CLAUSES	35
I.1	52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)	35
I.2	52.216-7 ALLOWABLE COST AND PAYMENT (MAR 1997)	37
I.3	52.216-18 ORDERING (OCT 1995)	41
I.4	52.216-22 INDEFINITE QUANTITY (OCT 1995)	42
I.5	52.217-9 OPTION TO EXTEND THE TERM OF THE CONTRACT (MAR 1989)	42
I.6	52.222-2 PAYMENT FOR OVERTIME PREMIUMS (JUL 1990)	43
I.7	52.242-4 CERTIFICATION OF INDIRECT COSTS (OCT 1995)	44
PART III	- LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS	46
SECTION J	- LIST OF ATTACHMENTS	46
J.1	ATTACHMENTS (MAR 1987)	46

**PART I - THE SCHEDULE****SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS****E 1 PROJECT TITLE**

The title of this project is as follows:

Thermal Hydraulic Research

[End of Clause]

**B.2 BRIEF DESCRIPTION OF WORK (MAR 1987)  
ALTERNATE 1 (JUN 1988)**

(a) Brief description of work:

The Contractor shall provide expert technical assistance (and/or small scale fundamental experiments) in the areas of: modern code architecture and languages, advanced numerical methods including implicit integration and higher-order differencing techniques, new two-phase flow modeling techniques including interphase area transport and three field methods, support for the development of accurate and consistent constitutive models and correlations, development of a new graphical user interface, and evaluation of computational fluid dynamics capabilities.

- (b) Orders will be issued for work required by the NRC in accordance with 52.216-18 - Ordering. Only Contracting Officers of the NRC or other individuals specifically authorized under this contract may authorize the initiation of work under this contract. The provisions of this contract shall govern all orders issued hereunder.

[End of Clause]

**B.3 CONSIDERATION AND OBLIGATION--TASK ORDERS (AUG 1989)  
ALTERNATE 1 (JUN 1991)**

- (a) The Maximum Ordering Limitation (MOL) for products and services ordered, delivered and accepted under the base period of this contract is \$2,046,235. The Contracting Officer may place orders with the contractor during the base contract period provided the aggregate amount of such orders does not exceed the MOL.
- (b) The guaranteed minimum obligated by the Government under the basic contract is \$204,624.



## B.3 (Continued)

- (c) The Maximum Ordering Limitation (MOL) set above for the base contract period for products and services ordered, delivered and accepted under this contract may be increased by \$1,969,093 for Option Period One. The Contracting Officer may place orders with the contractor during Option Period One provided the aggregate amount of such orders does not exceed the new MOL.
- (d) The guaranteed minimum under this contract for Option Period One, if exercised, will be \$196,909. If Option Period One is exercised, this minimum amount will be added to the minimum for the basic contract to establish a cumulative contract minimum guarantee. The Government may satisfy this cumulative guaranteed minimum through sufficient obligations on task orders during the base contract period or by obligating sufficient funds via the contract modification which exercises Option Year One.
- (e) The Maximum Ordering Limitation (MOL) set above for the contract base and option one periods for products and services ordered, delivered and accepted under this contract may be increased by \$2,029,044 for Option Period Two. The Contracting Officer may place orders with the contractor during Option Period Two provided the aggregate amount of such orders does not exceed the new MOL.
- (f) The guaranteed minimum under this contract for Option Period Two, if exercised, will be \$202,904. If Option Period Two is exercised, this minimum amount will be added to the current cumulative guaranteed minimum. The Government may satisfy this new cumulative guaranteed minimum through sufficient obligations on task orders during previous contract periods or by obligating sufficient funds via the contract modification which exercises Option Year Two.
- (g) The Maximum Ordering Limitation (MOL) set above for the contract base and option one and two periods for products and services ordered, delivered and accepted under this contract may be increased by \$2,127,207 for Option Period Three. The Contracting Officer may place orders with the contractor during Option Period Three provided the aggregate amount of such orders does not exceed the new MOL.
- (h) The guaranteed minimum under this contract for Option Period Three, if exercised, will be \$212,721. If Option Period Three is exercised, this minimum amount will be added to the current cumulative guaranteed minimum. The Government may satisfy this new cumulative guaranteed minimum through sufficient obligations on task orders during previous contract periods or by obligating sufficient funds via the contract modification

**B.3 (Continued)**

which exercises Option Year Three.

- (i) The Maximum Ordering Limitation (MOL) set above for the contract base and option one, two and three periods for products and services ordered, delivered and accepted under this contract may be increased by \$2,158,163 for Option Period Four. The Contracting Officer may place orders with the contractor during Option Period Four provided the aggregate amount of such orders does not exceed the new MOL.
- (j) The guaranteed minimum under this contract for Option Period Four, if exercised, will be \$215,816. If Option Period Four is exercised, this minimum amount will be added to the current cumulative guaranteed minimum. The Government may satisfy this new cumulative guaranteed minimum through sufficient obligations on task orders during the previous contract periods or by obligating sufficient funds via the contract modification which exercises Option Year Four.
- (k) A total estimated cost as well as any fee, if any, will be negotiated for each task order and will be incorporated as a ceiling in the resultant task order. The Contractor shall comply with the provisions of 52.232-20 - Limitation of Cost for fully funded task orders and 52.232-22 - Limitation of Funds for incrementally funded task orders, issued hereunder.

[End of Clause]

**B.4 INCORPORATION OF SMALL BUSINESS, SMALL DISADVANTAGED BUSINESS, AND WOMEN OWNED SMALL BUSINESS SUBCONTRACTING PLAN**

The Contractor's small business, small disadvantaged business and Women Owned Small Business subcontracting plan dated 5/22/97 is hereby approved and incorporated into this contract. A copy of the plan is attached in Section J of the contract.

[End of Clause]

**B.5 INCORPORATION OF REPRESENTATIONS AND CERTIFICATIONS**

Part IV (Sections K, L, and M) of the solicitation is hereby removed from this contract award document. Section K as completed by the Contractor is hereby incorporated into this contract by reference.

[End of Clause]

**SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT****C.1 BACKGROUND**

Currently, the NRC maintains four separate thermal hydraulic codes which are used to support the licensing process by analyzing complex transients, accidents, and off-normal conditions. The first of these is RELAP5 which is maintained at INEL for small-break LOCA and plant transient analysis of PWRs. Second is TRAC-P which is maintained at LANL and is used for large break LOCAs of PWRs. The third code is TRAC-B and it is maintained by Scientech, Inc. for detailed analysis of BWRs. Finally, RAMONA which is maintained at BNL and is used for simplified BWR analysis and for situations which require three-dimensional kinetics models. The cost of maintaining four codes at four separate sites has become prohibitive. Also, due to these codes' age, inclusion of state-of-the-art features is impractical. Therefore, an NRC effort is being undertaken to consolidate the functionality of these codes into a single code. This consolidation of the existing NRC thermal hydraulic codes will provide a solid capability that is easier to upgrade and maintain. The consolidated code will also include the following new elements on top of the current capabilities:

- implement modern code architecture,
- upgrade the numerical solution scheme,
- improve the two-phase flow model,
- improve the constitutive models and correlations,
- a new graphical user interface.

In addition, computational fluid dynamics capabilities will be investigated for possible future use. Other improvements will also be made, but are not in the scope of this contract.

**C.2 OBJECTIVE**

The objective of this contract is to provide expert technical assistance (and/or small scale fundamental experiments) in the areas of: modern code architecture and languages, advanced numerical methods including implicit integration and higher-order differencing techniques, new two-phase flow modeling techniques including interphase area transport and three field methods, support for the development of accurate and consistent constitutive models and correlations, development of a new graphical user interface, and evaluation of computational fluid dynamics capabilities. The research performed under this contract

**C.2 (Continued)**

will be incorporated into the consolidated NRC thermal hydraulic code via future contracts.

**C.3 SCOPE OF WORK**

This is a task ordering contract under which all task orders will be issued by the NRC Contracting Officer. Task orders that will be defined to support the next generation code development will be in one of six general areas: (a) modern code architecture, (b) advanced numerical solution schemes, (c) improved two-phase modeling, (d) accurate and consistent constitutive models and correlations, (e) a graphical user interface, and (f) computational fluid dynamics capabilities. Each task order will be issued in accordance with Section G Task Order Procedures.

**C.3.1 TASK AREA A - MODERN CODE ARCHITECTURE**

The existing thermal hydraulic codes were developed more than ten years ago. At that time computers had very small memories and the cost of computer time was very high relative to the code developer time. Because of these constraints, the codes had to be designed to run in very small amounts of CPU memory. These criteria caused the codes to include a pseudo dynamic memory allocation scheme, bit packing, and other processes that make code maintenance difficult. Modern workstations, which have very large CPU memories, possibly multiple CPUs, and virtually free computer time, do not have the constraints of the old machines and so modern codes are designed to minimize code developer time. One way to minimize code maintenance is to use modern computer languages that have higher level structures and object programming capabilities. The following is a list of functional characteristics, under Task Area A, that constitute the NRC's goals in developing modern code architecture in a modern computer language:

- Adapts easily to parallel execution
- Highly readable code
- Portable across compilers and machines
- Modular coding
- Modern Languages
- Easily modified code database

**C.3.2 TASK AREA B - ADVANCED NUMERICAL SOLUTION SCHEME**

Because older computer hardware had small Random Access Memory, solution of large matrices was difficult. Since fully implicit

**C.3.2 (Continued)**

techniques require the solution of large matrices, existing NRC thermal hydraulic codes use lower levels of implicitness. One measure of the level of implicitness of a code is the number of variables included in the matrix solution. Fully implicit methods include all seven dependent variables, semi-implicit techniques only include the pressure, and nearly implicit or SETS methods use two variables in the matrix solution. Solution of large fully implicit matrices are now possible due to the improvements in matrix solution techniques and computer hardware over the last ten years. Also work has been done to increase the ease of constructing these large matrices so code maintenance is not sacrificed by using fully implicit techniques.

The current generation of thermal hydraulics codes also depends highly on first order differencing techniques. The use of first-order differencing and large control volume size leads to large amounts of numerical diffusion. These low order techniques were employed by the thermal hydraulics codes to help damp oscillatory behavior and also because higher order techniques lead to larger matrices and oscillatory behavior. Higher order techniques are currently viable options that must be considered to help improve accuracy. Higher order differencing can now be considered due to the evolution of advanced matrix solvers and flux limiting techniques which remove the oscillatory or non-monotonic behavior of the higher order methods. A list of solution scheme topics, under Task Area B, that require investigation for the next generation code is given below:

- Implicit numerics
- Iterative matrix solvers
- Higher-order differencing techniques
- Intelligent time step control
- Smooth transition as species appears and disappears
- Parallel execution

**C.3.3 TASK AREA C - IMPROVED TWO-PHASE MODELING**

Current thermal hydraulic codes depend on flow regime maps to predict the interfacial area between the two phases. The interfacial areas, from the flow regime map, are then used to calculate interfacial mass and energy transfer as well as interfacial friction. Current flow regime maps are based on the assumptions of steady state, and fully developed flow. These flow regime maps can be discontinuous because very small changes in state space can lead to a very different steady state flow regime. Also, since the maps are static, they cannot resolve the time



**C.3.3 (Continued)**

scale over which flow regime transitions occur. Because of the assumptions of steady state and fully developed flow, the flow regime maps give instantaneous flow regime changes and the inability to represent entry effects. Improved two-phase modeling rely less on the flow regime maps and more on techniques that have some transient nature and can represent development length effects.

There are two promising approaches that may be considered for this modeling improvement. The first is simply to include an interfacial area transport model. This model would provide a partial differential equation, similar to a continuity equation, for the interfacial area's evolution. This model will then allow transient and entry effects to be modeled. The second approach would be to include a third droplet field as well as an interfacial transport mode, into the equation set. In this approach the droplets are represented as a third fluid. The volume fraction of the droplet field and the interfacial area can be used to represent the transition between flow regimes.

If the NRC chooses to pursue either of these approaches, a detailed analysis will be done to determine the availability of supporting experimental data. If the NRC determines that this experimental data base needs to be augmented, then experiments will be designed and run. The data gathered will then be used both to develop the new model and to validate it afterwards. The functions for this work will fall under Task Area C and will be in the following general two-phase flow modeling technical areas:

- Droplet field addition (three fluid)
- Interfacial area transport
- Interphase mass and energy transfer
- Interfacial friction
- Experiment design, execution, and data measurements

**C.3.4 TASK AREA D - ACCURATE AND CONSISTENT CONSTITUTIVE MODELS AND CORRELATIONS**

Because of the coarse computational mesh and the complex geometries used in system thermal hydraulics computations, many important physical phenomena cannot be accurately modeled from first principles. The underlying physics therefore must be represented by constitutive models and correlations. In the current generation of NRC thermal hydraulics codes, there are inconsistencies between codes on how these physical effects are included. Each code represents a similar phenomenon with different constitutive models and correlations. Besides being

## C.3.4 (Continued)

inconsistent between codes, these correlations can be inconsistent with each other inside of a given code (i.e., the interfacial area used for mass transfer may not be the same interfacial area used for interfacial friction). Also, many of the existing constitutive packages contain discontinuities. These discontinuities can lead to numerical oscillations in the solution.

For the next generation code, it is important to have constitutive models and correlations that are smooth (i.e., not discontinuous) and that work together to correctly represent the physics of the two phase flows. To accomplish this one must know what data are currently available, where the gaps are in the existing data, and what experiments need to be run to fill the existing gaps. The NRC will then determine which of these experiments will be conducted. The experiments will then be run and the needed data will be gathered.

Once a complete data set is available, a complete constitutive package needs to be constructed to represent the physics of interfacial mass, momentum and energy transfer as well as mass, energy, and momentum transfer between both phases and the wall. Other models are also required to represent components whose physics are not resolved by the computational mesh of the reactor.

In addition to the above topics, the following is a list of two-phase models that also need improvement for the new code. First, improvements need to be made in the area of stratified flow, level tracking, and entrainment. These models will improve the new code's ability to accurately represent the physics required to simulate the behavior of the AP600 reactor. The second area is critical flow modeling. Since a LOCA depends on the critical flow model to determine the boundary condition for the simulation, the critical flow model in part determines the accuracy of the rest of the simulation. The next specific area deals with interphase and wall interactions. Work needs to be done on interphase mass, momentum and energy transfer as discussed above. The wall interactions, momentum, and energy transfer, also need to be modeled more consistently. The fourth area is correctly modeling the pressure drop in piping systems at low pressures and flow rates. The final area is the construction of specific component models. These component models need to be designed to represent the important physics without having to include an excessively large amount of computational effort.

If the NRC chooses to incorporate any of these new models into the next generation code, a review of all existing experimental data for the model will be done. If the NRC determines that the existing data is incomplete, then new experiments will be run to provide the data necessary to develop and validate the new model. The constitutive model and correlation functions under Task Area D

**C.3.4 (Continued)**

will be related to the following technical areas:

- Knowledge of existing experimental databases
- Phenomenology
- Experimental design
- Modern measuring techniques
- Model generation from data
- Scaling
- Integration of models and correlations into a single consistent set
- Stratified flow
- Entrainment
- Level tracking
- Interphase mass and energy transfer (condensation and flashing)
- Pressure drops (low pressure and low flow)
- Critical flow
- Component specific models

**C.3.5 TASK AREA E - GRAPHICAL USER INTERFACE (GUI)**

As computer cost decreases and computer speed increases, more of a project's cost is engineer time. There are two large blocks of time spent by the analyst/engineer. The first is the construction of the input, which describes the reactor or experimental facility geometry, boundary conditions, and the initial conditions for each control volume, trip, and heat slab. The second is analyzing the results of the simulation, which often includes comparing the computational results to data.

A thermal hydraulics code produces output which includes the state of each control volume for each time of interest. An analyst, who is running the thermal hydraulics code, needs a set of graphical tools to display this data. The GUI also graphically assists in the construction of input data for a facility. In addition, the GUI provides version and access control of these files. Finally, the GUI provides tools to display and analyze the results of the calculation, while it is running and after the calculation has been completed.

**C.3.5 (Continued)**

This GUI must make it easy for the analyst to enter all of the geometry information required to describe the reactor and to initialize the problem. This is accomplished by having an expandable library of basic and composite components. Basic components include such items as manufacturing standards (e.g., pipe schedules) and code-specific components (e.g., pipes, tees, pumps, etc.). Composite components include larger component items such as reactor vessels, CMTs, steam generators, and also entire facility input models which have been previously constructed. In such a manner, a library of reactor plants and experimental facilities could be built up. Basic and composite components are graphically represented on the user's screen. The GUI is able to save the input model for the code version it was created for, and also guide the user through the process of exporting the input model to another code version. In addition, the GUI allows the user to print or export the graphical representation of the input model.

To protect the large investment in current input decks for the old thermal-hydraulics codes, the GUI must provide the ability to translate between the input of an old code and the input of the new consolidated code. Although this process cannot be completely automated, since the new code may have different basic components than an old code, the GUI minimizes the amount of human intervention required. This translator code is developed in a modular fashion that will enable the translation of a additional code's input with minimal work.

During and after the calculation is performed, the user needs a large set of tools for displaying and analyzing results. This capability includes using the graphical representation of the input model to show the state of the system. The user is able to pick components and be given a list of plots to choose from for output. The GUI offers a large selection of output options, allowing the user to print to a printer or save the results in standard formats such as ASCII, postscript, GIF, JPEG, and so on.

The GUI must also provide the following advanced features. First, it must provide an error checking capability to insure that the geometry information is consistent and reasonable (e.g., no negative volumes). Similar checks must be made on the initial conditions to insure their integrity. The second advanced feature will be to include an artificial intelligence capability to provide warnings and suggestions to the analyst to improve the accuracy, speed, and robustness of the simulation. The third area includes development of a database that maintains records of the important inputs and outputs of the code. For example, a basic input deck that describes a given reactor exists in a database so a new analyst does not have to redo work already done before. The GUI allows an analyst to start a project file; input models,

**C.3.5 (Continued)**

output files, restart files, graphs, drawings, reports, and other documents. This database also makes it easy to store and retrieve input and output from all of the developmental assessment problems. The following is a list of general functions under Task Area E which will be needed for the development of a new graphical user interface.

- Machine and operating system independent graphics
- Scripting language development
- Human factors knowledge
- Object oriented coding
- File format I/O and conversion
- Large data compression and storage
- Expert system development
- Nuclear reactor operation knowledge
- Thermal hydraulic code knowledge
- Database design

**C.3.6 TASK AREA F - EVALUATION OF COMPUTATIONAL FLUID DYNAMICS (CFD) CAPABILITIES**

There are times when a systems thermal hydraulic code, with its relatively coarse spatial discretization, cannot resolve the flow field to the required level of accuracy. In these cases a CFD code may be used to calculate the answer. A large number of CFD codes are available in both the commercial and government sectors.

An evaluation of these codes will be performed to determine which of these tools is added to the NRC's suite of analysis codes. This evaluation process will have three goals. The first is to provide the analyst with a new capability that the current system-level codes do not have. The second is to determine if any of the methods currently used in CFD codes are mature enough and simple enough to include in the next generation thermal hydraulics code. Finally, the ability to efficiently use system codes to provide boundary conditions for CFD codes and vice versa needs to be developed. The following is a partial list of general computational fluid dynamics capabilities which will be investigated.

- Complex fluid interfaces



**C 3.6 (Continued)**

- Irregular geometry
- Viscous and turbulent multi-phase flow
- Droplets and bubbles
- Interface tracking
- Adaptive meshing
- Subgrid scale modeling

**C.4 REPORTING REQUIREMENTS**

The contractor will document the results of the research in the report form specified in each task order conforming to the guidelines in NUREG-0650 (Revision 1), Technical Writing Style Guide, November 1990 and NRC Handbook 3.8 (See Section F.2 and Section J).

**C.5 MEETINGS AND TRAVEL**

Specific requirements for meetings and travel will be specified in each task order issued under the contract.

[End of Clause]

**C.6 NRCAR 2052.215-83 TRAVEL APPROVALS (JAN 1993)**

- (a) All domestic travel requires the prior approval of the project officer.
- (b) All foreign travel must be approved in advance by the NRC on NRC Form 445 and must be in compliance with FAR 52.247-63 Preference for U.S. Flag Air Carriers. Foreign travel approval must be communicated in writing through the contracting officer.

[End of Clause]

## SECTION E - INSPECTION AND ACCEPTANCE

## E.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)

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.

## I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

NUMBER	TITLE	DATE
52.246-8	INSPECTION OF RESEARCH AND DEVELOPMENT - COST-REIMBURSEMENT	APR 1984

[End of Clause]

## 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.

[End of Clause]

## SECTION F - DELIVERIES OR PERFORMANCE

## F.1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)

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.

## I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

NUMBER	TITLE	DATE
52.242-15	STOP-WORK ORDER Alternate I (APR 1984)	AUG 1989

[End of Clause]

## F.2 NRCAR 2052.212-70 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 Section J for List of Attachments).

[End of Clause]

## F.3 NRCAR 2052.212-71 TECHNICAL PROGRESS REPORT

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, job code number, 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

**F.3 (Continued)**

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.

[End of Clause]

**F.4 2052.212-72 FINANCIAL STATUS REPORT (DEC 1995)**

The contractor shall provide a monthly Financial Status Report to the project officer and the contracting officer. Also, whenever the report reference the acquisition of, or changes in status of, property valued at the time of purchase at \$50,000 or more, send a copy of the report to the Chief, Property Management Branch, Division of Facilities and Property Management, Office of Administration. The report is due within 15 calendar days after the end of the report period and shall identify the title of the project, the contract number, job code, project manager and/or principal investigator, the contract period or 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:
  - (1) Projected percentage of completion cumulative through the report period for the project/task order as reflected in the current CSP.
  - (2) Indicate if there has been a significant change in the original CSP projection in either dollars or percentage of completion. Identify the change, the reasons for the

**F.4 (Continued)**

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.

- (3) 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.

(i) Property status:

- (1) List property acquired for the project during the month with an acquisition cost of \$500 or more and less than \$50,000. Give the item number for the specific piece of equipment.
- (2) List 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. Note: The same information shall 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 (\$5,000 or more if purchased prior to October 1, 1995) showing the above information.
- (4) In the final monthly 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 end dates for each trip, the starting point and destination, and the traveler(s) for each trip.



**F.4 (Continued)**

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).

[End of Clause]

**F.5 PLACE OF DELIVERY--REPORTS (JUN 1988)**

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

(a) Project Officer (1 copies)

U.S. Nuclear Regulatory Commission  
Office of Nuclear Regulatory Research  
Attn: Jennifer Uhle, MS T-10-G-6  
Washington, DC 20555

(b) Contracting Officer (1 copy)

[End of Clause]

**F.6 DURATION OF CONTRACT PERIOD (MAR 1987)  
ALTERNATE 4 (JUN 1988)**

The ordering period for this contract shall commence on the contract effective date (block 3 of SF 26) and will expire 12 months thereafter. Any orders issued during this period shall be completed within the time specified in the order, unless otherwise specified herein. (See 52.216-18 - Ordering.) The term of this contract may be extended at the option of the Government for an additional four successive one-year periods.

[End of Clause]

**F.7 RESOLVING NRC CONTRACTOR DIFFERING PROFESSIONAL  
VIEWS (DPVs)**

The Nuclear Regulation 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 (1) may differ from a prevailing NRC staff view, (2) disagree with an NRC decision or policy position, or (3) 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

## F.7 (Continued)

judgement is required to document such concerns on matters directly associated with its performance of the contract. 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, may be found in Section J of the solicitation. 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. NOTE: The prime contractor or subcontractor shall submit all DPV's received, but need not endorse them.

[End of Clause]

## SECTION G - CONTRACT ADMINISTRATION DATA

G.1 NRCAR 2052.215-71 PROJECT OFFICER AUTHORITY  
(JAN 1993)

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

Name: Jennifer Uhle

Address: U.S. Nuclear Regulatory Research  
MS T-10-G-6  
Washington, DC 20555

Telephone Number: 301-415-6023

- (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, 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 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

## G.1 (Continued)

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.
- (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 FAR 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.

## G.1 (Continued)

- (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.

[End of Clause]

G.2 NRCAR 2052.215-82 TRAVEL REIMBURSEMENT  
- ALTERNATE 1 (JAN 1993)

- (a) The contractor is encouraged to use Government contract airlines, AMTRAK rail services, and discount hotel/motel properties in order to reduce the cost of travel under this contract. The contracting officer shall, upon request, provide each traveler with a letter of identification which is required in order to participate in this program. The Federal Travel Directory (FTD) identifies carriers, contract fares, schedules, payment conditions, and hotel/motel properties which offer their services and rates to Government contractor personnel traveling on official business under this contract. The FTD, which is issued monthly, may be purchased from the U.S. Government Printing Office, Washington, DC 20402.
- (b) The contractor will be reimbursed for reasonable travel costs incurred directly and specifically in the performance of this contract. The cost limitations for travel costs are determined in accordance with the specific travel regulations cited in FAR 31.205-46, as are in effect on the date of the trip. 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.
- (c) When the Government changes the Federal Travel Regulations, or other applicable regulations, it is the responsibility of the contractor to notify the contracting officer in accordance with the Limitations of Cost clause of this contract if the contractor will be unable to make all of the approved trips and remain within the cost and fee limitations of this contract due to the changes.



## G.2 (Continued)

(End of Clause)

## G.3 NRCAR 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:

Date	Period	Rate
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- (b) The contracting officer may adjust the above 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.

(End of Clause)

## G.4 NRCAR 2052.216-74 TASK ORDER PROCEDURES (JAN 1993)

- (a) Task order request for proposal. When a requirement within the scope of work for this contract is identified, the contracting officer shall transmit to the contractor a Task Order Request for Proposal (TORP) which includes the following, as appropriate:

- (1) Scope of work/meetings/travel and deliverables;
- (2) Reporting requirements;
- (3) Period of performance - place of performance;
- (4) Applicable special provisions;
- (5) Technical skills required; and
- (6) Estimated level of effort.

- (b) Task order proposal. By the date specified in the TORP, the contractor shall deliver to the contracting officer a written proposal that provides the following technical and cost information, as appropriate:

## G.4 (Continued)

- (i) A discussion of the scope of work requirements to substantiate the contractor's understanding of the requirements of the task order and the contractor's proposed method of approach to meet the objective of the order.
  - (ii) Resumes for professional personnel proposed to be utilized in the performance of any resulting task order. Include educational background, specific pertinent work experience, and a list of any pertinent publications authored by the individual.
  - (iii) Identification of administrative support personnel and/or facilities that are needed to assist the professional personnel in completing work on the task order.
  - (iv) Identification of "Key Personnel" and the number of staff hours that will be committed to completion of work on the task order.
- (2) Cost proposal. The contractor's cost proposal for each task order must be prepared using Standard Form 1411, Contract Pricing Proposal cover sheet. A copy of the form and instructions are attached to this contract. Each task order cost proposal must be fully supported by cost and pricing data adequate to establish the reasonableness of the proposed amounts. When the contractor's estimated cost for the proposed task order exceeds \$100,000 and the period of performance exceeds six months, the contractor may be required to submit a Contractor Spending Plan (CSP) as part of its cost proposal. The TORP indicates if a CSP is required.
- (c) Task order award. The contractor shall perform all work described in definitized task orders issued by the contracting officer. Definitized task orders include the following:
- (1) Statement of work/meetings/travel and deliverables;
  - (2) Reporting requirements;
  - (3) Period of performance;
  - (4) Key personnel;
  - (5) Applicable special provisions; and
  - (6) Total task order amount including any fixed fee.

**G.4 (Continued)**

[End of Clause]

**G.5 NRCAR 2052.216-75 ACCELERATED TASK ORDER PROCEDURES (JAN 1993)**

- (a) The NRC may require the contractor to commence work before receipt of a definitized task order from the contracting officer. Accordingly, when the contracting officer verbally authorizes the work, the contractor shall proceed with performance of the task order subject to the monetary limitation established for the task order by the contracting officer.
- (b) When this accelerated procedure is employed by the NRC, the contractor agrees to begin promptly negotiating with the contracting officer the terms of the definitive task order and agrees to submit a cost proposal with supporting cost or pricing data. If agreement on a definitized task order is not reached by the target date mutually agreed upon by the contractor and contracting officer, the contracting officer may determine a reasonable price and/or fee in accordance with Subpart 15.8 and Part 31 of the FAR, subject to contractor appeal as provided in 52.233-1, Disputes. In any event, the contractor shall proceed with completion of the task order, subject only to the monetary limitation established by the contracting officer and the terms and conditions of the basic contract.

(End of Clause)

**G.6 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 in Section J. 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. To ensure that adequate payment information will be available to the contractor, the contractor should inform the financial institution that the addendum record must not be

## G.6 (Continued)

stripped from the payment. Further information concerning the addendum is provided at Attachment . The ACH 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 institution's 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 NRCAR 2052.209-73 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.

## H.1 (Continued)

- (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, 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



## H.1 (Continued)

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

## H.1 (Continued)

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

## H.1 (Continued)

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.

[End of Clause]

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

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

1

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 or his/her authorized representative shall evaluate the request and promptly notify the contractor of his or her approval or disapproval in writing.
- (d) If the contracting officer determines that suitable and timely

**H.2 (Continued)**

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.

[End of Clause]

**H.3 NRCAR 2052.235-71 PUBLICATION OF RESEARCH RESULTS - UNIVERSITIES (JAN 1993)**

- (a) The principal investigator(s)/contractor shall comply with the provisions of NRC Handbook 3.8 (formerly MC 3202) and NRC Manual Chapter 3206 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.3 (Continued)

[End of Clause]

## H.4 NRCAR 2052.235-72 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 and shall comply with all applicable health, safety, and fire protection regulations and requirements (including reporting requirements) of the Commission and the Department of Labor. In the event that the contractor fails to comply with these regulations or requirements, the contracting officer 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 order for resumption of work may be issued at the discretion of the contracting officer. The contractor shall make no claim for an extension of time or for compensation or damages by reason of, or in connection with, this type of work stoppage.

[End of Clause]

## PART II - CONTRACT CLAUSES

## SECTION I - CONTRACT CLAUSES

## I 1 52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)

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.

## I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

NUMBER	TITLE	DATE
52.202-1	DEFINITIONS	OCT 1995
52.203-3	GRATUITIES	APR 1984
52.203-5	COVENANT AGAINST CONTINGENT FEES	APR 1984
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	JAN 1996
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	JAN 1990
52.204-4	PRINTING/COPYING DOUBLE-SIDED ON RECYCLED PAPER	JUN 1996
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 Alternate II (JAN 1997)	AUG 1996
52.215-22	PRICE REDUCTION FOR DEFECTIVE COST OR PRICING DATA	OCT 1995
52.215-24	SUBCONTRACTOR COST OR PRICING DATA	OCT 1995
52.215-27	TERMINATION OF DEFINED BENEFIT PENSION PLANS	MAR 1996
52.215-33	ORDER OF PRECEDENCE	JAN 1986
52.215-39	REVERSION OR ADJUSTMENT OF PLANS FOR POSTRETIREMENT BENEFITS OTHER THAN PENSIONS (PRB)	MAR 1996
52.215-40	NOTIFICATION OF OWNERSHIP CHANGES	FEB 1995
52.216-11	COST CONTRACT - NO FEE	APR 1984
52.219-8	UTILIZATION OF SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS CONCERNS	OCT 1995
52.219-9	SMALL, SMALL DISADVANTAGED AND WOMEN-OWNED SMALL BUSINESS SUBCONTRACTING PLAN	AUG 1996



## I.1 (Continued)

NUMBER	TITLE	DATE
52.219-16	LIQUIDATED DAMAGES--SUBCONTRACTING PLAN	OCT 1995
52.222-3	CONVICT LABOR	AUG 1996
52.222-26	EQUAL OPPORTUNITY	APR 1984
52.222-28	EQUAL OPPORTUNITY PREAWARD CLEARANCE OF SUBCONTRACTS	APR 1984
52.222-35	AFFIRMATIVE ACTION FOR SPECIAL DISABLED AND VIETNAM ERA VETERANS	APR 1984
52.222-36	AFFIRMATIVE ACTION FOR HANDICAPPED WORKERS	APR 1984
52.222-37	EMPLOYMENT REPORTS ON SPECIAL DISABLED VETERANS AND VETERANS OF THE VIETNAM ERA	JAN 1988
52.223-2	CLEAN AIR AND WATER	APR 1984
52.223-6	DRUG-FREE WORKPLACE	JAN 1997
52.223-14	TOXIC CHEMICAL RELATIONSHIP REPORTING	OCT 1996
52.225-11	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	OCT 1996
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 1989
52.227-14	RIGHTS IN DATA - GENERAL	JUN 1987
52.227-16	ADDITIONAL DATA REQUIREMENTS	JUN 1987
52.228-7	INSURANCE - LIABILITY TO THIRD PERSONS	MAR 1996
52.232-22	LIMITATION OF FUNDS	APR 1984
52.232-23	ASSIGNMENT OF CLAIMS	JAN 1986
52.232-25	PROMPT PAYMENT	MAY 1997
52.232-33	MANDATORY INFORMATION FOR ELECTRONIC FUNDS TRANSFER PAYMENT	AUG 1996
52.233-1	DISPUTES	OCT 1995
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	OCT 1995
52.242-13	BANKRUPTCY	JUL 1995
52.243-2	CHANGES - COST-REIMBURSEMENT Alternate V (APR 1984)	AUG 1987
52.244-2	SUBCONTRACTS (COST-REIMBURSEMENT AND LETTER CONTRACTS)	FEB 1997
52.244-5	COMPETITION IN SUBCONTRACTING	DEC 1996
52.245-5	GOVERNMENT PROPERTY (COST-REIMBURSEMENT, TIME-AND-MATERIAL, OR	JAN 1986

## I.1 (Continued)

NUMBER	TITLE	DATE
	LABOR-HOUR CONTRACTS)	
	Alternate I (JUL 1985)	
52.247-67	SUBMISSION OF COMMERCIAL TRANSPORTATION BILLS TO THE GENERAL SERVICES ADMINISTRATION FOR AUDIT	FEB 1995
52.249-5	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (EDUCATIONAL AND OTHER NONPROFIT INSTITUTIONS)	SEP 1996
52.249-14	EXCUSABLE DELAYS	APR 1984
52.251-1	GOVERNMENT SUPPLY SOURCES	APR 1984
52.253-1	COMPUTER GENERATED FORMS	JAN 1991

[End of Clause]

## I.2 52.216-7 ALLOWABLE COST AND PAYMENT (MAR 1997)

- (a) Invoicing. The Government shall make payments to the Contractor when requested as work progresses, but (except for small business concerns) not more often than once every 2 weeks, in amounts determined to be allowable by the Contracting Officer in accordance with Subpart 31.3 of the Federal Acquisition Regulation (FAR) in effect on the date of this contract and the terms of this contract. The Contractor may submit to an authorized representative of the Contracting Officer, in such form and reasonable detail as the representative may require, an invoice or voucher supported by a statement of the claimed allowable cost for performing this contract.
- (b) Reimbursing costs. (1) For the purpose of reimbursing allowable costs (except as provided in subparagraph (2) below, with respect to pension, deferred profit sharing, and employee stock ownership plan contributions), the term "costs" includes only--
- (i) Those recorded costs that, at the time of the request for reimbursement, the Contractor has paid by cash, check, or other form of actual payment for items or services purchased directly for the contract;
  - (ii) When the Contractor is not delinquent in paying costs of contract performance in the ordinary course of business, costs incurred, but not necessarily paid, for--
    - (A) Materials issued from the Contractor's inventory and placed in the production process

## I.2 (Continued)

for use on the contract;

(B) Direct labor;

(C) Direct travel;

(D) Other direct in-house costs; and

(E) Properly allocable and allowable indirect costs, as shown in the records maintained by the Contractor for purposes of obtaining reimbursement under Government contracts; and

(iii) The amount of progress and other payments that have been paid by cash, check, or other form of payment to the Contractor's subcontractors under similar cost standards.

(2) Contractor contributions to any pension or other postretirement benefit, profit-sharing or employee stock ownership plan funds that are paid quarterly or more often may be included in indirect costs for payment purposes; Provided, that the Contractor pays the contribution to the fund within 30 days after the close of the period covered. Payments made 30 days or more after the close of a period shall not be included until the Contractor actually makes the payment. Accrued costs for such contributions that are paid less often than quarterly shall be excluded from indirect costs for payment purposes until the Contractor actually makes the payment.

(3) Notwithstanding the audit and adjustment of invoices or vouchers under paragraph (g) below, allowable indirect costs under this contract shall be obtained by applying indirect cost rates established in accordance with paragraph (d) below.

(4) Any statements in specifications or other documents incorporated in this contract by reference designating performance of services or furnishing of materials at the Contractor's expense or at no cost to the Government shall be disregarded for purposes of cost-reimbursement under this clause.

(c) Small business concerns. A small business concern may be paid more often than every 2 weeks and may invoice and be paid for recorded costs for items or services purchased directly for the contract, even though the concern has not yet paid for those items or services.

## I.2 (Continued)

- (d) Final indirect cost rates. (1) Final annual indirect cost rates and the appropriate bases shall be established in accordance with Subpart 42.7 of the Federal Acquisition Regulation (FAR) in effect for the period covered by the indirect cost rate proposal.
- (2) The Contractor shall, within 90 days after the expiration of each of its fiscal years, or by a later date approved by the Contracting Officer, submit to the cognizant Contracting Officer responsible for negotiating its final indirect cost rates and, if required by agency procedures, to the cognizant audit activity proposed final indirect cost rates for that period and supporting cost data specifying the contract and/or subcontract to which the rates apply. The proposed rates shall be based on the Contractor's actual cost experience for that period. The appropriate Government representative and Contractor shall establish the final indirect cost rates as promptly as practical after receipt of the Contractor's proposal.
- (3) The Contractor and the appropriate Government representative shall execute a written understanding setting forth the final indirect cost rates. The understanding shall specify (i) the agreed-upon final annual indirect cost rates, (ii) the bases to which the rates apply, (iii) the periods for which the rates apply, (iv) any specific indirect cost items treated as direct costs in the settlement, and (v) the affected contract and/or subcontract, identifying any with advance agreements or special terms and the applicable rates. The understanding shall not change any monetary ceiling, contract obligation, or specific cost allowance or disallowance provided for in this contract. The understanding is incorporated into this contract upon execution.
- (4) Within 120 days after settlement of the final indirect cost rates covering the year in which this contract is physically complete (or longer, if approved in writing by the Contracting Officer), the Contractor shall submit a completion invoice or voucher to reflect the settled amounts and rates.
- (5) Failure by the parties to agree on a final annual indirect cost rate shall be a dispute within the meaning of the Disputes clause.
- (e) Billing rates. Until final annual indirect cost rates are established for any period, the Government shall reimburse the

## I.2 (Continued)

Contractor at billing rates established by the Contracting Officer or by an authorized representative (the cognizant auditor), subject to adjustment when the final rates are established. These billing rates--

- (1) Shall be the anticipated final rates; and
  - (2) May be prospectively or retroactively revised by mutual agreement, at either party's request, to prevent substantial overpayment or underpayment.
- (f) Quick-closeout procedures. Quick-closeout procedures are applicable when the conditions in FAR 42.708(a) are satisfied.
- (g) Audit. At any time or times before final payment, the Contracting Officer may have the Contractor's invoices or vouchers and statements of cost audited. Any payment may be (1) reduced by amounts found by the Contracting Officer not to constitute allowable costs or (2) adjusted for prior overpayments or underpayments.
- (h) Final payment. (1) Upon approval of a completion invoice or voucher submitted by the Contractor in accordance with paragraph (d)(4) of this clause, and upon the Contractor's compliance with all terms of this contract, the Government shall promptly pay any balance of allowable costs and that part of the fee (if any) not previously paid.
- (2) The Contractor shall pay to the Government any refunds, rebates, credits, or other amounts (including interest, if any) accruing to or received by the Contractor or any assignee under this contract, to the extent that those amounts are properly allocable to costs for which the Contractor has been reimbursed by the Government. Reasonable expenses incurred by the Contractor for securing refunds, rebates, credits, or other amounts shall be allowable costs if approved by the Contracting Officer. Before final payment under this contract, the Contractor and each assignee whose assignment is in effect at the time of final payment shall execute and deliver--
- (i) An assignment to the Government, in form and substance satisfactory to the Contracting Officer, of refunds, rebates, credits, or other amounts (including interest, if any) properly allocable to costs for which the Contractor has been reimbursed by the Government under this contract; and
  - (ii) A release discharging the Government, its officers, agents, and employees from all liabilities,



## I.2 (Continued)

obligations, and claims arising out of or under this contract, except--

- (A) Specified claims stated in exact amounts, or in estimated amounts when the exact amounts are not known;
- (B) Claims (including reasonable incidental expenses) based upon liabilities of the Contractor to third parties arising out of the performance of this contract; provided, that the claims are not known to the Contractor on the date of the execution of the release, and that the Contractor gives notice of the claims in writing to the Contracting Officer within 6 years following the release date or notice of final payment date, whichever is earlier; and
- (C) Claims for reimbursement of costs, including reasonable incidental expenses, incurred by the Contractor under the patent clauses of this contract, excluding, however, any expenses arising from the Contractor's indemnification of the Government against patent liability.

[End of Clause]

## I.3 52.216-18 ORDERING (OCT 1995)

- (a) Any supplies and services to be furnished under this contract shall be ordered by issuance of delivery orders or task orders by the individuals or activities designated in the Schedule. Such orders may be issued from contract effective date (block 3 of the SF 26) through one year after the contract effective date.
- (b) All delivery orders or task orders are subject to the terms and conditions of this contract. In the event of conflict between a delivery order or task order and this contract, the contract shall control.
- (c) If mailed, a delivery order or task order is considered "issued" when the Government deposits the order in the mail. Orders may be issued orally, by facsimile, or by electronic commerce methods only if authorized in the Schedule.

[End of Clause]



**I.4 52.216-22 INDEFINITE QUANTITY (OCT 1995)**

- (a) This is an indefinite-quantity contract for the supplies or services specified, and effective for the period stated, in the Schedule. The quantities of supplies and services specified in the Schedule are estimates only and are not purchased by this contract.
- (b) Delivery or performance shall be made only as authorized by orders issued in accordance with the Ordering clause. The Contractor shall furnish to the Government, when and if ordered, the supplies or services specified in the Schedule up to and including the quantity designated in the Schedule as the "maximum." The Government shall order at least the quantity of supplies or services designated in the Schedule as the "minimum."
- (c) Except for any limitations on quantities in the Order Limitations clause or in the Schedule, there is no limit on the number of orders that may be issued. The Government may issue orders requiring delivery to multiple destinations or performance at multiple locations.
- (d) Any order issued during the effective period of this contract and not completed within that period shall be completed by the Contractor within the time specified in the order. The contract shall govern the Contractor's and Government's rights and obligations with respect to that order to the same extent as if the order were completed during the contract's effective period; provided, that the Contractor shall not be required to make any deliveries under this contract after six months after contract expiration.

[End of Clause]

**I.5 52.217-9 OPTION TO EXTEND THE TERM OF THE CONTRACT (MAR 1989)**

- (a) The Government may extend the term of this contract by written notice to the Contractor within 60 days; provided, that the Government shall give the Contractor a preliminary written notice of its intent to extend at least 60 days before the contract expires. The preliminary notice does not commit the Government to an extension.
- (b) If the Government exercises this option, the extended contract shall be considered to include this option provision.
- (c) The total duration of this contract, including the exercise of any options under this clause, shall not exceed five years.

[End of Clause]

## I.6 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 \$0.00 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.

[End of Clause]

## I.7 52.242-4 CERTIFICATION OF INDIRECT COSTS (OCT 1995)

(a) The Contractor shall--

- (1) Certify any proposal to establish or modify billing rates or to establish final indirect cost rates;
- (2) Use the format in paragraph (c) of this clause to certify; and
- (3) Have the certificate signed by an individual of the Contractor's organization at a level no lower than a vice president or chief financial officer of the business segment of the Contractor that submits the proposal.

(b) Failure by the Contractor to submit a signed certificate, as described in this clause, shall result in payment of indirect costs at rates unilaterally established by the Government.

(c) The certificate of indirect costs shall read as follows:

Certificate of Indirect Costs

This is to certify that to the best of my knowledge and belief:

1. I have reviewed this indirect cost proposal;
2. All costs included in this proposal (identify proposal and date) to establish billing or final indirect costs rates for (identify period covered by rate) are allowable in accordance with the requirements of contracts to which they apply and with the cost principles of the Federal Acquisition Regulation (FAR) and its supplements applicable to those contracts;
3. This proposal does not include any costs which are unallowable under applicable cost principles of the FAR or its supplements, including, but not limited to: advertising and public relations costs, contributions and donations, entertainment costs, fines and penalties, lobbying costs, defense of fraud proceedings, and goodwill; and
4. All costs included in this proposal are properly allocable to Government contracts on the basis of a beneficial or casual relationship between the expenses incurred and the contracts to which they are allocated in accordance with applicable acquisition regulations.

I declare under penalty of perjury that the foregoing is

I.7 (Continued)

true and correct.

Firm:

Signature:

Name of Certifying Official.

Title:

Date of Execution:

[End of Clause]

## PART III - LIST OF DOCUMENTS, EXHIBITS AND OTHER ATTACHMENTS

## SECTION J - LIST OF ATTACHMENTS

## J.1 ATTACHMENTS (MAR 1987)

Attachment Number	Title
01	Billing Instructions
02	NRC Contractor Organizational Conflicts of Interest
03	NRC Handbook 3.8
04	Contractor Spending Plan (CSP) Instructions
05	Subcontracting Plan
06	Procedures for Resolving NRC Contractor Differing Professional Views

BILLING INSTRUCTIONS FOR  
COST REIMBURSEMENT TYPE CONTRACTS

General: The contractor shall prepare vouchers/invoices for reimbursement of costs in the manner and format described herein. **FAILURE TO SUBMIT VOUCHERS/INVOICES IN ACCORDANCE WITH THESE INSTRUCTIONS WILL RESULT IN REJECTION OF THE VOUCHER/INVOICE AS IMPROPER.**

Number of Copies: An original and three copies, including supporting documentation shall be submitted. A copy of all supporting documents must be attached to each copy of your voucher/invoice. Failure to submit all the required copies will result in rejection of the voucher/invoice as improper.

Designated Agency Billing Office: Vouchers/invoices shall be submitted to the following address:

U.S. Nuclear Regulatory Commission  
Division of Contracts - T-7-I-2  
Washington, DC 20555

HAND DELIVERY OF VOUCHERS/INVOICES IS DISCOURAGED AND WILL NOT EXPEDITE PROCESSING BY NRC. However, should you choose to deliver vouchers/invoices by hand, including delivery by any express mail services or special delivery services which use a courier or other person to deliver the voucher/invoice in person to the NRC, such vouchers/invoices must be addressed to the above Designated Agency Billing Office and will only be accepted at the following location:

U.S. Nuclear Regulatory Commission  
One White Flint North  
11555 Rockville Pike - Mail Room  
Rockville, MD 20852

HAND CARRIED SUBMISSIONS WILL NOT BE ACCEPTED AT OTHER THAN THE ABOVE ADDRESS.

Note that the official receipt date for hand-delivered vouchers/invoices will be the date it is received by the official agency billing office in the Division of Contracts.

Agency Payment Office: Payment will continue to be made by the office designated in the contract in Block 12 of SF 26 or Block 25 of SF 33, whichever is applicable.



BILLING INSTRUCTIONS FOR COST REIMBURSEMENT TYPE CONTRACTS -  
(Page 2 of 10)

Frequency: The contractor shall submit claims for reimbursement once each month, unless otherwise authorized by the Contracting Officer.

Format: Claims should be submitted in the format depicted on the attached sample form entitled "Voucher/Invoice for Purchases and Services Other than Personal" (see **Attachment 1**). The sample format is provided for guidance only. The format is not required for submission of a voucher/invoice. Alternate formats are permissible provided all requirements of the billing instructions are addressed. The instructions for preparation and itemization of the voucher/invoice are included with the sample form.

Task Ordering Contracts: If the contractor bills for more than one task order under a voucher/invoice, detailed cost information for each individual task order shall be submitted, together with a cumulative summary of all charges billed on the voucher/invoice. This includes all applicable cost elements discussed in paragraphs (a) through (n) of the attached instructions.

Fee Recovery Billings: Pursuant to the provisions of 10 CFR Part 170 and 171 on license fees, the NRC must recover the cost of work performed. Accordingly, the contractor must provide the total amount of funds billed during the period, fiscal year to date and the cumulative total for each task or task assignment by facility or report. The fee recovery billing reports shall be on a separate page, and shall be in the format provided in **Attachment 2**. The billing period for fee recovery costs should be from the first day of each calendar month to the last day of the same month. Each separate fee billing report must be attached to the monthly invoice and cover the same period as the invoice.

Each report will contain a docket number or other unique identifier. The NRC will provide a unique identifier for all work performed. Costs should be reported as whole number to the nearest cent. For work that involves more than one facility at the same site, each facility should be listed separately and the costs should be split appropriately between the facilities. Common costs, as defined below, shall be identified as a separate line item in the fee recovery billing report each month.

Common costs are those costs that are not licensee unique and associated with the performance of an overall program that benefit all similar licensees covered under that program or that are required to satisfactorily carry out the program. Common costs include costs associated with the following: preparatory or start-up efforts to interpret and reach agreement on methodology, approach, acceptance criteria, regulatory position,

BILLING INSTRUCTIONS FOR COST REIMBURSEMENT TYPE CONTRACTS  
(Page 3 of 10)

or technical reporting requirements; efforts associated with the "lead plant" concept that might be involved during the first one or two plant reviews; meetings and discussions involving the above efforts to provide orientation, background knowledge or guidance during the course of a program; any technical effort applied to a docket or other unique identifier; and project management. Common costs must be reporting monthly for each docket or unique identifier. Common costs must be computed based on the proportion of direct costs incurred against each docket or unique identifier for the billing period.

Billing of Cost After Expiration of Contract: If costs are incurred during the contract period and claimed after the contract has expired, the period during which these costs were incurred must be cited. To be considered a proper expiration voucher/invoice, the contractor shall clearly mark it "EXPIRATION VOUCHER" or "EXPIRATION INVOICE".

Final vouchers/invoices shall be marked "FINAL VOUCHER" or "FINAL INVOICE".

Currency: Billings may be expressed in the currency normally used by the contractor in maintaining his accounting records; payments will be made in that currency. However, the U.S. dollar equivalent for all vouchers/invoices paid under the contract may not exceed the total U.S. dollars authorized in the contract.

Supersession: These instructions supersede any previous billing instructions.

## INVOICE/VOUCHER FOR PURCHASES AND SERVICES OTHER THAN PERSONAL

(SAMPLE FORMAT)

Official Agency Billing Office  
 U.S. Nuclear Regulatory Commission  
 Division of Contracts MS: T-7-1-2  
 Washington, DC 20555-0001  
Payee's Name and Address

(a) Contract Number \_\_\_\_\_

Task Order No. (If Applicable) \_\_\_\_\_

(b) Voucher/Invoice # \_\_\_\_\_

(c) Date of Voucher/Invoice \_\_\_\_\_

(d) Fixed Fee \_\_\_\_\_

Individual to Contact  
 Regarding this Voucher  
 Name: \_\_\_\_\_

Tel. No.: \_\_\_\_\_

(e) This voucher represents reimbursable costs for the

		<u>Amount Billed</u>	<u>Current Period</u>
<u>Cumulative</u>			
(f)	<u>Direct Costs</u>		
(1)	Direct labor .....	_____	_____
(2)	Fringe benefits		
	( % , if computed as percentage).....	_____	_____
(3)	Capitalized nonexpendable equipment (\$50,000 or more see instructions)* .....	_____	(4) Non-capitalized equipment,
	materials, and supplies .....	_____	(5) Premium pay (NRC approved
	overtime).....	(6) Consultants* .....	(8) Subcontracts* .....
(7)	Travel* .....	_____	_____
(9)	Other costs* .....	_____	_____
		Total Direct	
Costs _____			
(g)	<u>Indirect Costs</u>		
(A)	Overhead ____ % of		

\_\_\_\_\_ (Indicate Base)..... \_\_\_\_\_

(B) General & Administrative Expense  
\_\_\_\_\_ % of Cost Elements

Nos. \_\_\_\_\_

Total Direct & Indirect Costs \_\_\_\_\_

(h) Fixed-Fee (Cite Formula):  
\_\_\_\_\_

(i) Total Amount Billed..... \_\_\_\_\_

(j) Adjustments..... \_\_\_\_\_

(k) Grand Totals..... \_\_\_\_\_

\* (Requires Supporting Information -- See Attached)

BILLING INSTRUCTIONS FOR COST REIMBURSEMENT TYPE CONTRACTS (Page 5 of 10 (Cont.) ATTACHMENT 1

SAMPLE SUPPORTING INFORMATION

1) Direct Labor - \$2400

Cumulative Billed	Labor Category	Hours		Total	Hrs.
		Billed	Rate		
	Senior Engineer I	100	\$14.00	\$1400	975
	Engineer	50	\$10.00	\$500	465
	Computer Analyst	100	\$5.00	\$500	320
				\$2400	

3) Capitalized Non-Expendable Equipment

Prototype Spectrometer - item number 1000-01 \$60,000

4) Non-capitalized Equipment, Materials, and Supplies

10 Radon tubes @ \$110.00 = \$1100.00

6 Pairs Electrostatic gloves @ \$150.00 = \$900.00

\$2000.00

5) Premium Pay

Walter Murphy - 10 hours @ \$10.00 Per Hour = \$100  
(This was approved by NRC in letter dated 3/6/95).

6) Consultants' Fee

Dr. Carney - 1 hour @ \$100 = \$100

7) Travel

<u>Start Date</u>	<u>Destination</u>	<u>Costs</u>
3/1/89	Wash., DC	\$200

BILLING INSTRUCTIONS FOR COST REIMBURSEMENT TYPE CONTRACTS (Page 6 of 10)  
ATTACHMENT 1 (Cont.)

INSTRUCTIONS FOR PREPARING  
COST INFORMATION FOR NRC CONTRACT VOUCHERS/INVOICES

*Preparation and Itemization of the Voucher/Invoice:* In order to constitute a proper invoice, the contractor shall furnish all the information set forth below. These notes are keyed to the entries on the sample voucher/invoice.

*Official Agency Billing Office:* Address the original and 3 copies of the voucher/invoice, together with supporting documentation attached to each copy to: U.S. Nuclear Regulatory Commission, Division of Contracts, MS: T-7-1-2, Washington, DC 20555-0001.

Vouchers/invoices delivered by hand, including delivery by express mail or special delivery services which use a courier or other person to deliver the voucher/invoice in person to the NRC, should be addressed in accordance with the foregoing and delivered to: U. S. Nuclear Regulatory Commission, One White Flint North, 11555 Rockville Pike - Mail Room, Rockville, Maryland 20852. Hand-delivered vouchers/invoices will not be accepted at other than the above address. Note, however, that the official receipt date for hand-delivered vouchers/invoices will be the date it is received by the official agency billing office in the Division of Contracts.

*Payee's Name and Address.* Show the name of the contractor as it appears in the contract and its correct address. When an approved assignment has been made by the contractor, or a different payee or addressee has been designated, insert the name and address of the payee. Indicate the name and telephone number of the individual responsible for answering any questions that the NRC may have regarding the invoice. The following guidance corresponds to the entries required on the sample form.

(a) *Contract Number.* Insert the NRC contract number.

*Task Order Number, if applicable.* Insert the task order number.

(b) *Voucher/invoice number.* The appropriate sequential number of the voucher/invoice, beginning with 001 should be designated. Contractors may also include an individual internal accounting number, if desired, in addition to the 3-digit sequential number.



BILLING INSTRUCTIONS FOR COST REIMBURSEMENT TYPE CONTRACTS (Page 7 of 10)  
ATTACHMENT 1 (Cont.)

- (c) **Date of Voucher/Invoice.** Insert the date the voucher/invoice is prepared.
- (d) **Fixed-Fee.** Insert total fixed-fee. Include this information as it applies to individual task orders as well.
- (e) **Billing Period.** Insert the beginning and ending dates (day, month, year) of the period during which costs were incurred and for which reimbursement is claimed.
- (f) **Direct Costs -** Insert the amount billed for the following cost elements, adjustments, suspensions, and total amounts, for both the current billing period and for the cumulative period (from contract inception to end date of this billing period).
- (1) **Direct Labor.** This consists of salaries and wages paid (or accrued) for direct performance of the contract itemized as follows:
- | Labor    | Hrs.   |      |       | Cumulative  |
|----------|--------|------|-------|-------------|
| Category | Billed | Rate | Total | Hrs. Billed |
- (2) **Fringe Benefits.** This represents fringe benefits applicable to direct labor and billed as a direct cost. Where a rate is used indicate the rate. Fringe benefits included in direct labor or in other indirect cost pools should not be identified here.
- (3) **Capitalized Non Expendable Equipment.** List each item costing \$50,000 or more and having a life expectancy of more than one year. List only those items of equipment for which reimbursement is requested. For each such item, list the following (as applicable): (a) the item number for the specific piece of equipment listed in the property schedule of the contract; or (b) the Contracting Officer's approval letter if the equipment is not covered by the property schedule.

**BILLING INSTRUCTIONS FOR COST REIMBURSEMENT TYPE CONTRACTS (Page 8 of 10)**  
**ATTACHMENT 1 (Cont.)**

(4) **Non-capitalized Equipment, Materials, and Supplies.** These are equipment other than that described in (3) above, plus consumable materials, supplies. List by category. List items valued at \$500 or more separately. Provide the item number for each piece of equipment valued at \$500 or more.

(5) **Premium Pay.** This enumeration is in excess of the basic hourly rate. (Requires written approval of the Contracting Officer.)

(6) **Consultants.** The supporting information must include the name, hourly or daily rate of the consultant, and reference the NRC approval (if not specifically approved in the original contract).

(7) **Travel.** Total costs associated with each trip must be shown in the following format:

<u>Start Date</u>	<u>Destination</u>	<u>Costs</u>
From To	From To	\$

(8) **Subcontracts.** Include separate detailed breakdown of all costs paid to approved subcontractors during the billing period.

(9) **Other Costs.** List all other direct costs by cost element and dollar amount separately.

(g) **Indirect Costs (Overhead and General and Administrative Expense).** Cite the formula (rate and base) in effect in accordance with the terms of the contract, during the time the costs were incurred and for which reimbursement is claimed.

(h) **Fixed Fee.** If the contract provides for a fixed fee, it must be claimed as provided for by the contract. Cite the formula or method of computation. The contractor may bill for fixed fee only up to 85% of total fee.

(i) **Total Amount Billed.** Insert the total amounts claimed for the current and cumulative periods.

BILLING INSTRUCTIONS FOR COST REIMBURSEMENT TYPE CONTRACTS (Page 9 of 10)  
ATTACHMENT 1 (Cont.)

(j) Adjustments. For cumulative amount, include outstanding suspensions.

(k) Grand Totals.

Further itemization of vouchers/invoices shall only be required for items having specific limitations set forth in the contract.

BILLING INSTRUCTIONS FOR COST REIMBURSEMENT TYPE CONTRACTS (Page 10 of 10)  
ATTACHMENT 2 (Cont.)

FEE RECOVERY BILLING REPORT

FIN: \_\_\_\_\_

Facility Name or Report Title:

\_\_\_\_\_

TAC or Inspection Report Number:

\_\_\_\_\_

(or other unique identifier)

Docket Number (if applicable): \_\_\_\_\_

Cost Categories	Period Amt.	Period Cost Incurred	Fiscal Year To Date Costs	Total Cumulative Costs
Labor				
Materials				
Subcontractor/ Consultant				
Travel				
Other (specify)				
Common Costs				
Total				

Remarks:

\_\_\_\_\_

R:\BILLING.396

## Availability Information (G) (continued)

### Reference Material (1) (continued)

the text or in footnotes. Provide any credit due to individuals in the text or in an acknowledgment section. Availability may be stated collectively for all entries. (a)

Although proprietary reports may not be included in a list of references, listing or identification of proprietary reports may be included in an appendix or in a separate listing following the reference section titled "Proprietary Sources of Information." (b)

In addition, reference to Institute of Nuclear Power Operations (INPO) documents may **not** be made without prior approval from INPO. Approval to reference INPO documents must be stated on the NRC Form 426A. (c)

Guidelines for developing and presenting reference material are provided in NUREG-0650, Revision 1. (d)

### Reports (2)

Most final reports are sold by GPO and NTIS. A statement indicating this availability is added to each report, as appropriate, by the Publications Branch staff before the report is printed. (a)

Draft reports for which comments are requested are typically announced in the *Federal Register* as being available from the NRC. These reports are not sold at GPO or at NTIS. (b)

## Forms (H)

### Bibliographic Data Sheet (NRC Form 335) (1)

All published NRC reports must include an NRC Form 335 as the final right-hand page of the manuscript. Instructions for completing the NRC Form 335 appear on the back of the form. A completed NRC Form 335 must be submitted to the Technical Publications Section, DFIPS, with the camera-ready copy of the report. Exhibit 2 shows a completed NRC Form 335.

### Release To Publish Unclassified NRC Contractor, Consultant, or Conference Proceedings Reports (NRC Form 426A) (2)

The NRC contact must submit a completed NRC Form 426A (see Exhibit 1) with the camera-ready copy of the report to the Technical Publications Section, DFIPS. NRC Form 426A must be signed by the staff member designated by the appropriate office director.

# **Unclassified Contractor and Grantee Publications in the NUREG Series**

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**Directive  
3.8**

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## Contents

<b>Policy</b> .....	1
<b>Objectives</b> .....	1
<b>Organizational Responsibilities and Delegations of Authority</b> .....	2
Executive Director for Operations (EDO) .....	2
Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research (DEDR) .....	2
Deputy Executive Director for Nuclear Materials Safety, Safeguards, and Operations Support (DEDS) .....	3
Office Directors .....	3
Director, Office of Administration (ADM) .....	4
Director, Division of Freedom of Information and Publications Services, (DFIPS), ADM .....	4
Director, Division of Contracts (DC), ADM .....	4
<b>Applicability</b> .....	5
Employees .....	5
Other Publications .....	5
<b>Handbook</b> .....	5
<b>References</b> .....	5



# Unclassified Contractor and Grantee Publications in the NUREG Series Directive 3.8

## Policy

(3.8-01)

U.S. Nuclear Regulatory Commission policy requires that the following publications published by NRC adhere to the documentation and production requirements, standards, and practices specified in this directive and handbook: (1) unclassified NRC contractor, consultant, or grantee formal reports, books, and international agreement reports in the NUREG/CR (contractor reports), NUREG/GR (grant reports), and NUREG/IA (international agreement reports) series; (2) reports and books by contractors of the U.S. Department of Energy (DOE); and (3) publications prepared for NRC under memoranda of understanding and interagency agreements.

## Objectives

(3.8-02)

- To ensure the production and dissemination of information and publications as required by the Energy Reorganization Act of 1974 and the Freedom of Information Act. (a)
- To ensure technical staff and management reviews of formal reports and books before publication. (b)
- To ensure that national security patent rights, copyrights, proprietary rights, and rights in other sensitive unclassified information, including those specified in interagency and international agreements and memoranda of understanding, are not compromised by the release or publication of information by NRC. (c)

## Objectives

(3.8-02) (continued)

- To ensure that all Unclassified NRC contractor or grantee publications in the NUREG series carry the registered Government identification NUREG/CR-0000, NUREG/GR-0000, or NUREG/IA-0000, with the exception of some publications prepared by grantees, and indicate the availability of source material used in these publications. (d)
- To ensure that NRC-sponsored book manuscripts receive proper peer review from experts within and outside NRC. (e)
- To provide uniform procedures for publishing formal reports and books prepared by NRC contractors or grantees. (f)

## Organizational Responsibilities and Delegations of Authority

(3.8-03)

### Executive Director for Operations (EDO) (031)

Delegates to the Deputy Executive Directors for Operation decisionmaking authority for the resolution of differences between NRC and contractors about the contents of publications, about granting contractors permission to publish NRC-sponsored information in the open literature, and about permitting contractors to issue press or other media releases concerning NRC-sponsored information.

### Deputy Executive Director for Nuclear Reactor Regulation, Regional Operations and Research (DEDR) (032)

As delegated from the EDO, makes final decisions in the following areas for the Office of Nuclear Reactor Regulation, the Office of Nuclear Regulatory Research, and regional offices:

- When an office director refuses to publish an NRC-sponsored document because of irreconcilable differences between himself or herself and the author about the contents of the document. (a)

**Deputy Executive Director for Nuclear  
Reactor Regulation, Regional Operations  
and Research (DEDR)**  
(032) (continued)

- When an office director refuses to permit a contractor's principal investigator to publish NRC-sponsored information in the open literature. (b)
- When an office director refuses to permit a contractor to issue a press or other media release about an NRC-sponsored publication. (c)

**Deputy Executive Director for  
Nuclear Materials Safety, Safeguards,  
and Operations Support (DEDS)**  
(033)

As delegated from the EDO, makes final decisions in the following areas for the offices reporting to the DEDS:

- When an office director refuses to publish an NRC-sponsored document because of irreconcilable differences between himself or herself and the author about the contents of the document. (a)
- When an office director refuses to permit a contractor's principal investigator to publish NRC-sponsored information in the open literature. (b)
- When an office director refuses to permit a contractor to issue a press or other media release about an NRC sponsored publication. (c)

**Office Directors**  
(034)

- Ensure that publications will be reviewed in draft for acceptability before final printing and distribution by determining that they are consistent with agency policy, management decisions, and that they raise no significant legal issues. (a)
- Ensure that statements of work on contracts\* include a requirement that contractors comply with this directive and handbook and with Government Printing and Binding Regulations. (b)

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\*"Contract" in this context encompasses the "Standard Order for DOE Work" (NRC Form 173), interagency and international agreements, and grants.

**Volume 3, Part 1 – Publications, Mail, and Information Disclosure**  
**Unclassified Contractor and Grantee Publications in the NUREG Series**  
**Directive 3.8**

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**Office Directors**  
(034) (continued)

- Sign, or delegate signature authority for, the NRC Form 426A, "Release to Publish Unclassified NRC Contractor, Consultant, or Conference Proceedings Reports" (Exhibit 1 of Handbook 3.8), and for memoranda requesting reprints of contractor publications. (c)

**Director, Office of Administration (ADM)**  
(035)

As delegated from the DEDS, administers NRC's programs and policies for publishing unclassified contractor and grantee reports and books in the NUREG series.

**Director, Division of Freedom of Information and Publications Services, (DFIPS), ADM**  
(036)

- Develops and administers, as delegated from the Director, ADM, NRC's program and policies for publishing unclassified contractor, consultant, and grantee formal reports, books, and international agreement reports in the NUREG/CR, NUREG/GR, and NUREG/IA series. (a)
- Applies the policy, procedures, standards, and guides for the documentation, formatting, composition, printing, and dissemination of NRC-sponsored publications in the NUREG series consistent with the mission of the agency and in accordance with the requirements of the Government Printing and Binding Regulations issued by the Joint Committee on Printing, U.S. Congress. (b)
- Develops and administers the central agency publication numbering system for identifying, producing, and retrieving unclassified NRC-sponsored publications in the NUREG series. (c)

**Director, Division of Contracts (DC), ADM**  
(037)

Ensures that those requests for proposals, invitations for bids, and grant proposals, and the ensuing contracts and grants that require

**Director, Division of Contracts (DC), ADM**  
(037) (continued)

publications as deliverables include provisions requiring that contractors comply with this directive and handbook and with Government Printing and Binding Regulations.

**Applicability**  
(3.8-04)

**Employees**  
(041)

All NRC employees shall follow the policy and guidance specified in this directive and handbook.

**Other Publications**  
(042)

The provisions of this directive and handbook do not apply to NRC staff publications in the NUREG series, NRC docket material, or documents created by NRC boards, panels, advisory committees, or offices that report to the Commission.

**Handbook**  
(3.8-05)

Handbook 3.8 gives detailed guidelines for preparing unclassified contractor and grantee publications in the NUREG series.

**References**  
(3.8-06)

*A Manual of Style*, University of Chicago Press.

Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.).

"Copyrights," Title 17, *United States Code*.

"Cost Principles for State and Local Governments," OMB Circular A-87, Office of Management and Budget, January 1981.

Energy Reorganization Act of 1974, as amended (42 U.S.C. 5801 et seq.).



## References

(3.8-06) (continued)

"Federal Grant and Cooperative Agreement Act." Pub. L. 95-224, February 3, 1978.

"Federal Regulation Requirements." Executive Order 12291, February 17, 1981 (5 U.S.C. 5601 Note).

Freedom of Information Act (5 U.S.C. 552).

Government Printing and Binding Regulations. Pub. L. 101-9, February 1990.

"Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Nonprofit Organizations." OMB Circular A-110, Office of Management and Budget, July 1976.

Memorandum of Understanding Between the Department of Energy and the U.S. Nuclear Regulatory Commission, February 24, 1978.

Memorandum of Agreement Between the Institute of Nuclear Power Operations and the U.S. Nuclear Regulatory Commission, dated September 17, 1993.

NRC Management Directive 3.9, "NRC Staff and Contractor Speeches, Papers, and Journal Articles on Regulatory and Technical Subjects."

— 3.11, "Conferences and Conference Proceedings."

— 12.2, "NRC Classified Information Security Program."

— 12.6, "NRC Sensitive Unclassified Information Security Program."

NUREG-0650, Revision 1, "Publishing Documents in the NUREG Series," November 1990.

NUREG/BR-0075, Revision 2, "NRC Field Policy Manual," Field Policy Manual No. 9, dated March 22, 1993.

"Public Printing and Documents," Title 44, Chapter 3, Government Printing Office, *United States Code*.

*U.S. Government Printing Office Style Manual*, 1984.

# ***Unclassified Contractor and Grantee Publications in the NUREG Series***

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***Handbook  
3.8***

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## Contents

### Part I

Introduction .....	1
--------------------	---

### Part II

<b>Preparing Publication Requirements for Statements of Work for Contracts .....</b>	<b>2</b>
Specifying Publication Requirements (A) .....	2
Publishing Formal Reports (B) .....	2
Publishing Unclassified Information in the Open Literature and Presenting Papers (C) .....	4
Reports Containing Sensitive Unclassified and Classified Information (D) .....	6
Conference and Workshop Proceedings (E) .....	7
Distribution of Reports to Contractors (F) .....	7
Coordinating Contractor Press or Other Media Releases of Information (G) ....	7

### Part III

<b>Draft and Final NUREG Reports .....</b>	<b>8</b>
Identification Information (A) .....	8
NUREG Number (1) .....	8
Authors' Names (2) .....	8
Organizational Identification (3) .....	9
Previous Reports in Series (4) .....	9
Report Dates (5) .....	9
Report Organization and Components (B) .....	9
Pre-Publication Reviews (C) .....	9
Patent Review (1) .....	9
Security Review (2) .....	10
Copyright Review (3) .....	10
Color Printing (D) .....	10
Microfiche (E) .....	12
Disclaimers (F) .....	13

## Contents (continued)

### Part III (continued)

Availability Information (G) .....	13
Reference Material (1) .....	13
Reports (2) .....	14
Forms (H) .....	14
Bibliographic Data Sheet (NRC Form 335) (1) .....	14
Release To Publish Unclassified NRC Contractor, Consultant, or Conference Proceedings Reports (NRC Form 426A) (2) .....	14
Printing and Reprinting (I) .....	15
Distribution (J) .....	15

### Part IV

International Agreement Reports .....	16
Background and Rationale (A) .....	16
Identification Information (B) .....	16
Cover and Title Page (1) .....	16
NRC Report Number (2) .....	16
Previous Reports in Series (3) .....	17
Report Organization and Components (C) .....	17
Availability Information (D) .....	17
References and Bibliographies (1) .....	17
Reports (2) .....	18
Disclaimer (E) .....	18
Forms (F) .....	19
Bibliographic Data Sheet (NRC Form 335) (1) .....	19
Release to Publish Unclassified NRC Contractor, Consultant, or Conference Proceedings Reports (NRC Form 426A) (2) .....	19
Classified or Sensitive Unclassified Information (G) .....	19

## Contents (continued)

### Part V

<b>Books</b> .....	20
General (A) .....	20
Definition (B) .....	20
Format (C) .....	20
NRC Document Number (D) .....	21
Availability of Reference Materials (E) .....	21
Reviews (F) ..	22
Peer (1) .....	22
Copyright (2) .....	23
Security (3) .....	23
Patent (4) .....	23
Publishing Authorization Form (G) .....	23
Disclaimers (H) .....	23
Printing (I) .....	24
Distribution and Sales (J) .....	24

### Part VI

<b>Grant Publications</b> .....	25
Background and Rationale (A) .....	25
Publication of Results (B) .....	25
Publication by NRC (1) .....	25
Publication by a Grantee (2) .....	25
Publication by a Grantee in the Open Literature (3) .....	25
Reprints of Open Literature Publications (4) .....	27
Identification Information (C) .....	27
Pre-Publication Reviews (D) .....	27
<b>Glossary</b> .....	28

## Contents (continued)

### Exhibits

1. NRC Form 426A, "Release to Publish Unclassified NRC Contractor, Consultant, or Conference Proceedings Reports" .....	32
2. NRC Form 335, "Bibliographic Data Sheet" .....	33
3. Microfiche Sheet Sample .....	35



# Part I

## Introduction

This handbook specifies the procedures that the Nuclear Regulatory Commission (NRC) contractors and grantees need to follow when preparing the following publications for the NRC: (A)

- Final NUREG reports (1)
- International agreement reports (2)
- Books (3)
- Grant publications (4)

The handbook is divided into six major parts and includes a glossary and exhibits. Part II provides general information for staff consideration in preparing **statements of work**. Parts III, IV, V, and VI provide publishing guidelines specific to, respectively, **contractor reports**, **international agreement reports**, **books**, and **grantee publications**. (B)

*Contractor* means a private contractor, consultant, expert, another State or Federal agency working under an interagency agreement, or a Department of Energy (DOE) facility or subcontractor, such as a national laboratory, working under the DOE/NRC Memorandum of Understanding of February 24, 1978, and any subcontractors of these organizations. (C)

This directive and handbook, as well as a copy of "Publishing Documents in the NUREG Series" (NUREG-0650, Revision 1), must be included or referenced in all contracts, interagency and international agreements, and grants for which the publications previously listed are contract deliverables or grant obligations. In addition to the guidelines specific to each type of publication that appear in subsequent parts of this handbook, all statements of work must contain the applicable guidelines outlined in Part II. (D)

## Part II

# Preparing Publication Requirements for Statements of Work for Contracts

### Specifying Publication Requirements (A)

List and describe the type of technical reports required from each project, task, or subtask, as applicable. State when, how many, and to whom the reports should be submitted and the scope of information they should contain. These reports may be unclassified, sensitive unclassified, or classified. For guidelines and requirements covering sensitive unclassified and classified publications, refer to Management Directive (MD) 12.2, "NRC Classified Information Security Program," and MD 12.6, "NRC Sensitive Unclassified Information Security Program." (1)

This directive and handbook pertain to publications that will be issued in the NUREG/CR, NUREG/IA, and NUREG/GR series. (2)

### Publishing Formal Reports (B)

NUREG series reports will be printed and distributed by NRC from camera-ready copy submitted by the contractor to the Publications Branch, Mailstop T-6 E7, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001. The camera-ready copy is to be prepared in accordance with the provisions of this handbook. Recommended guidelines for the organization and format of formal reports are specified in "Publishing Documents in the NUREG Series" (NUREG-0650, Revision 1). (1)

When the report contains sensitive unclassified or classified information, the contractor must comply with MD 12.2. (2)

## Publishing Formal Reports (B) (continued)

If a draft is desired before completing a final report, specify in the statement of work (SOW) the due date for delivering the final camera-ready copy after receiving comments from NRC staff or participants (if applicable) on the draft. State that all draft material be submitted to the cognizant NRC contact. (3)

When the contractor is to submit draft material for comment before preparing the final report, state that the contractor will be asked to make changes if there are comments from NRC staff or participants. If agreement on the changes is reached, the NRC contact will authorize the contractor to prepare the final copy and submit it to the NRC contact if it is a letter report or input to a Safety Evaluation Report or an Environmental Statement, or to the Director, Division of Freedom of Information and Publications Services (DFIPS) if it is a camera-ready copy for printing and distribution. This procedure will ensure proper publication, handling, distribution and, among other things, preclude further changes that might nullify the agreement. (4)

If special caveats were agreed to between the contractor and the NRC contact, the caveats should accompany the NRC Form 426A (Exhibit 1) for approval when it is sent to the NRC contact. A copy of special caveats should also accompany the camera-ready copy sent to DFIPS. (5)

If agreement on changes to a formal technical report to be issued in the NUREG/CR series is not reached, the NRC contact may request the contractor to prepare the camera-ready copy with, in addition to the standard disclaimer required on all contractor formal reports (see Section (F), Part III of this handbook), any caveats deemed necessary to cover NRC objections. These caveats may range from "The views expressed in this report are not necessarily those of the U.S. Nuclear Regulatory Commission" to the addition of a preface setting forth the NRC opinion or footnotes at appropriate locations within the text. (6)

If NRC objections cannot be covered in this manner, NRC can refuse to publish the report. In the case of DOE/national laboratory reports, the DOE Operations Office Manager responsible for the laboratory should be informed by the NRC office director or regional administrator of the decision and the reasons therefor. A copy of the decision should be sent to the laboratory director. In the case of another Federal agency, a State, or a private contractor, the person who entered into the contract should similarly be informed by the

## **Publishing Formal Reports (B) (continued)**

NRC contracting officer. The contractor is then free to publish the report without identifying NRC as the funding sponsor of the report and without the NRC disclaimer. Decisions by the office director or designee may be appealed to the appropriate Deputy Executive Director for Operations. (7)

## **Publishing Unclassified Information in the Open Literature and Presenting Papers (C)**

Specify whether the contractor's principal investigator is permitted to publish in the **open literature** instead of submitting a final report and/or to present papers at public or association meetings during the course of the work. If this arrangement is authorized, add the following statement to the SOW: (1)

**The principal investigator may publish the results of this work in the open literature instead of submitting a final report or may present papers at public or association meetings at interim stages of the work.**

If the NRC contact wants to review the paper or journal article before presentation or submission for publication, so state in the SOW, as follows: (2)

**The principal investigator may publish the results of this work in the open literature instead of submitting a final report or may present papers at public or association meetings at interim stages of the work if the article or paper has been reviewed by the NRC contact in draft form and agreement has been reached on the content.**

If agreement is not reached, NRC may also require that the paper include in addition to the standard statement "Work supported by the U.S. Nuclear Regulatory Commission," any caveats deemed necessary to cover NRC objections. If NRC objections cannot be covered in this manner, NRC may refuse to authorize publication in the open literature and/or presentation of papers. (3)

In the latter case, NRC will inform the contractor of the decision, as previously stated. The contractor is then free to publish without identifying NRC as the funding sponsor of the information. Decisions by office directors or designees may be appealed to the appropriate NRC Deputy Executive Director for Operations. (4)



## **Publishing Unclassified Information in the Open Literature and Presenting Papers (C) (continued)**

If the contractor proposes to publish in the **open literature** or present the information at meetings *in addition* to submitting the required technical reports, approval of the proposed article or presentation should be obtained from NRC. NRC shall approve the material as submitted, approve it subject to NRC-suggested revisions, or disapprove it. In any event, NRC may disapprove or delay presentation of papers on information that is subject to the Commission's approval that has not been ruled upon or that has been disapproved. (5)

If the contractor requests permission to publish in the open literature even though the contract does not explicitly provide for this type of publication, the contract can be modified to provide for such presentations. (6)

When the contractor submits journal articles for publication, each must be accompanied by the following statement: (7)

**The submitted manuscript has been authored by a contractor of the U.S. Government under Contract\* No. \_\_\_\_\_. Accordingly, the U.S. Government has a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or allow others to do so, for U.S. Government purposes.**

All published papers and articles must include the following disclaimer: (8)

**This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for any third party's use or the results of such use, of any information, apparatus, product, or process disclosed in this report, or represents that its use by such third party would not infringe privately owned rights. The views expressed in this paper are not necessarily those of the U.S. Nuclear Regulatory Commission.**

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\*For DOE work orders, the appropriate job code number is applicable.

## **Publishing Unclassified Information in the Open Literature and Presenting Papers (C) (continued)**

If the contractor is requested by the journal or other publisher to transfer the copyright, the contract author will respond to the journal or other publisher in writing in accord with the sample letter shown as follows: (9)

**Dear (Copyright Holder's Name):**

We recently received a document for signature assigning copyright and republication rights in the submitted article (title) to (name of publication). This letter is offered in lieu of the document as a means of completing the transfer of ownership. Accordingly, we hereby expressly transfer and assign our rights of ownership in the above-cited work to (name of publisher).

You are advised, however, that the above assignment and any publication or republication of the above-cited work is subject to the following Government rights:

The submitted manuscript has been authored by a contractor of the U.S. Government under Contract No. \_\_\_\_\_. Accordingly, the U.S. Government has a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or allow others to do so, for U.S. Government purposes.

Sincerely,

If NRC approves open literature publication and page charges and travel costs are required for the presentation of papers, see MD 3.9, "NRC Staff and Contractor Speeches, Papers, and Journal Articles on Regulatory and Technical Subjects." (10)

## **Reports Containing Sensitive Unclassified and Classified Information (D)**

Examples of the proper marking of reports designated Official Use Only, Limited Official Use, Proprietary Information, Safeguards Information, and classified (CONFIDENTIAL, SECRET, and TOP SECRET) are specified in MD 12.2.

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Approved: June 17, 1991  
(Revised: July 9, 1995)



## Conference and Workshop Proceedings (E)

If NRC approves publication of compilations of papers presented at NRC-sponsored or cosponsored meetings, conferences, and symposia, see MD 3.11, "Conferences and Conference Proceedings."

## Distribution of Reports to Contractors (F)

Up to 50 copies of printed unclassified NUREG/CR, NUREG/GR, and NUREG/IA reports will be bulk shipped to the contractor by NRC. (The Joint Committee on Printing's *Government Printing and Binding Regulations* permit contractors to receive free of charge up to 50 copies of reports they have produced for NRC.) If fewer than 50 copies are needed, indicate the desired quantity on NRC Form 426A (Exhibit 1). Contractors requesting single copies for specific individuals in organizations other than the contractor's organization who are not included in the distribution requested by the NRC contact may address such a request, with written justification, to the NRC contact. If the additional distribution is approved by the NRC contact, the contractor shall send address labels with the camera-ready copy to the Publications Branch, DFIPS, USNRC, Washington, DC 20555-0001, and that distribution will be made along with the standard distribution.

## Coordinating Contractor Press or Other Media Releases of Information (G)

A contractor may request permission to issue a press or other media release on the work being done. That request must be made to the NRC office director or designee, who will consult with the staff of the Office of Public Affairs. The contractor must not issue a press release on nonroutine information without this prior approval. This approval may be obtained by a telephone call to the office director or designee to expedite the request. The contractor may appeal decisions not to authorize the release of information or delays in handling the request to the appropriate Deputy Executive Director for Operations.

## Part III

### Draft and Final NUREG Reports

#### Identification Information (A)

##### NUREG Number (1)

Each contractor report published by NRC must be identified by a unique alphanumeric designation controlled and maintained by the Division of Freedom of Information and Publications Services (DFIPS). To obtain an NRC report number, call the Publications Branch, DFIPS, at (301) 415-7008. (a)

The NRC identification numbers will have one of the following forms: (b)

- NUREG/CR-0000
- NUREG/GR-0000
- NUREG/IA-0000

CR indicates **contractor report**, GR indicates **grant report**, and IA indicates **international agreement report**. The contractor report number, if any, will be placed below the NUREG number on the title page and cover. (c)

When a report consists of more than one volume or binding, or is issued in more than one edition, an appropriate volume, number, supplement, part, addendum, or revision designation must appear immediately below the NRC report number and the contractor's report number, if any. (d)

##### Authors' Names (2)

Authors' names must appear on the report cover and title page, unless placing them there is impractical, as for an annual report having many contributors. Editors or compilers with subject-area expertise may also be identified as such on the cover and title page. The authors'

## **Identification Information (A) (continued)**

### **Authors' Names (2) (continued)**

affiliation need not be listed unless it differs from the organization creating the report.

### **Organizational Identification (3)**

The Publications Branch, DFIPS, prepares the covers and title pages for all reports and will list information about the organization that created the report as it is provided.

### **Previous Reports in Series (4)**

If the report being prepared is one in an ongoing series, list all previous reports in the series. Include report numbers and issuance dates. Place this list on the back of the title page. If this list cannot be placed on a single page, place the pages at the end of the front matter rather than on the back of the title page.

### **Report Dates (5)**

The report dates are shown on the title page. These dates include the month and year the report is completed and the month and year it is published.

## **Report Organization and Components (B)**

The organization and components of contractor reports vary, depending on their purpose and scope. Recommended format and organizational guidelines appear in "Publishing Documents in the NUREG Series" (NUREG-0650, Revision 1). (1)

Each draft and final report prepared for NRC must include an abstract of 200 words or less that appears on a separate page preceding the table of contents. The abstract also must appear on the "Bibliographic Data Sheet," NRC Form 335 (Exhibit 2). Instructions for completing NRC Form 335 appear on the back of the form. Guidelines on the special writing requirements for preparing abstracts appear in Section 5.5 of NUREG-0650, Revision 1. (2)

## **Pre-Publication Reviews (C)**

### **Patent Review (1)**

Patent implications must be considered before approval of reports for public release so that disclosure will not adversely affect the patent

## Pre-Publication Reviews (C) (continued)

### Patent Review (1) (continued)

rights of NRC or the contractor. If the work being reported is contractually managed through another Government agency (e.g., DOE national laboratories), the contractor should request that Government agency to perform the patent review. The result of the review must be reported on NRC Form 426A under item 8 (see Exhibit 1). (a)

If NRC directly administers the contract, or the contractor is unable to obtain a patent clearance from the Government agency administering the contract, the responsible NRC contracting officer must be consulted, and the responsible NRC technical contact shall consider the patent implications. If the report does not require a patent review because the report does not contain any description of novel technical developments that may be of an inventive nature, mark "N/A" on the NRC Form 426A in the space for the Patent Counsel's signature. If a possibility exists that developments of an inventive nature are disclosed, the contracting officer shall request assistance from the NRC Assistant General Counsel for Administration, Office of the General Counsel, on (301) 415-1553. (b)

### Security Review (2)

If a report of sensitive unclassified or classified work is required, the NRC contact must work with the NRC Division of Security to establish the appropriate procedures and inform the contractor of these procedures through the contracting officer. The standards for marking and handling these reports are given in Management Directive (MD) 12.2, "NRC Classified Information Security Program."

### Copyright Review (3)

Copyrighted material must not appear in NRC-sponsored publications without written permission from the copyright holder. See Section 3.4 of NUREG-0650, Revision 1, for information about obtaining copyright permission.

## Color Printing (D)

Regulations issued by the Joint Committee on Printing (JCP) restrict the use of color in printed materials to those uses that are of demonstrable value. JCP regulations specify that "demonstrably valuable multicolor printing" includes the following categories: (1)

## Color Printing (D) (continued)

- Maps and technical diagrams for which additional color is necessary for clarity. (a)
- Object identification (medical specimens, diseases, plants, flags, uniforms, etc.). (b)
- Safety programs, fire prevention, savings bonds programs, and competitive areas of personnel recruiting. (c)
- Areas wherein clearly identifiable savings in costs can be soundly predicated on multicolor use. (d)
- Printing for programs required by law, whose relative success or failure is in direct ratio to the degree of public response, and for which that response can be logically attributable to the number of colors planned and the manner in which they are proposed to be used. (e)
- Color for promotional or motivational purposes, such as programs concerning public health, safety, and consumer benefits, or to encourage utilization of Government facilities, such as programs for Social Security, Medicare, and certain areas of need for veterans. (f)

The regulations indicate that the following categories do not meet the "demonstrable value" criteria: (2)

- Printed items wherein additional color is used primarily for decorative effect. (a)
- Printed items for which additional color is used primarily in lieu of effective layout and design. (b)
- Printed items for which additional color is used excessively, that is, four colors when two or three will fulfill the need, three colors when two are adequate, two colors when one is adequate. (c)
- Printed items wherein the inclusion of multicolor does not reflect careful, competent advance planning that recognizes the contribution that the use of color is expected to make to the ultimate end-purpose. (d)



## Color Printing (D) (continued)

If color printing is anticipated when the statement of work or standard order for DOE work is being prepared, contact the Publications Branch, DFIPS. Prior approval must be granted by the Director of DFIPS. If a requirement for color printing arises as the report is being prepared, submit a written justification for its use to the Director of DFIPS. (3)

## Microfiche (E)

NRC contractors and DOE laboratories submitting microfiche with reports must submit a hard copy of each microfiche, include headers on each microfiche as shown in Exhibit 3, and conform to the following NRC specifications.\*

- Microfiche must conform to either the 24/98 format for source documents with 14 columns and 7 rows (reduction ratio of 1 to 24) or the 48/270 format for computer output microfilm with 18 columns and 15 rows (reduction ratio of 1 to 48). (1)
- The microfiche sheet must be standard 105 mm by 148 mm. (2)
- The microfiche must be either a silver-halide master or a black or blue-black diazo placed in acid-free envelopes. (3)
- The microfiche must contain headers as shown in the sample in Exhibit 3. Specifically, the first block of the header must contain the NUREG number (include volume or revision, if applicable), the contractor identification number, and the classification (e.g., unclassified, proprietary). The second block must contain the description of the microfiche and may include the contractor's name. The third block must contain the publication date and the sheet identification. (4)
- The header information must be eye readable on a clear background. (5)
- A foldout page must be microfilmed in sections if the page is too large to be microfilmed in a double frame. No less than 25-mm overlap of original material is acceptable. (6)

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\*With the exception of items (3), (4), and (8), these specifications are consistent with the American National Standards Institute "Standard for Micrographics-Microfiche, ANSI/AIIM MS5-1985." Copies of this standard are available from the American National Standards Institute, ATTN: Sales Department, 11 West 42nd Street, 13th floor, New York, NY 10036 (212) 642-4900, or from the Association for Information and Image Management, ATTN: Publications Section, 1100 Wayne Avenue, Silver Spring, MD 20910 (301) 587-8202.



## Microfiche (E) (continued)

- The first frame must be blank (on the first sheet only), and the second frame must contain the National Institute of Standards and Technology's (NIST's) Reference Material resolution target in Microcopy Test Charts (NBS SRM 1010A). (7)
- Jacketed microfiche is unacceptable. (8)

## Disclaimers (F)

The following notice will be added by the Publications Branch, DFIPS, before the printing process on the inside front cover: (1)

This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for any third party's use, or the results of such use, of any information, apparatus, product, or process disclosed in this report, or represents that its use by such third party would not infringe privately owned rights.

The branch will print the additional statement, "The views expressed in this report are not necessarily those of the U.S. Nuclear Regulatory Commission," below the standard disclaimer, if appropriate. Other qualifying statements may be added, if needed. (2)

## Availability Information (G)

### Reference Material (1)

Reports or other documents referenced in text, reference sections, bibliographies, and appendixes of unclassified regulatory and technical reports in the NUREG series must be available to the public either in the public domain (as in a public library, at the Government Printing Office (GPO), at the National Technical Information Service (NTIS), or at other reference or sales outlets) or in the NRC Public Document Room (PDR). This means that references should not be made to personal communications and interviews, unpublished information and information with restricted distribution (e.g., proprietary, National Security, and Official Use Only). If the unretrievable information is important and unrestricted, quote it in

## Availability Information (G) (continued)

### Reference Material (1) (continued)

the text or in footnotes. Provide any credit due to individuals in the text or in an acknowledgment section. Availability may be stated collectively for all entries. (a)

Although proprietary reports may not be included in a list of references, listing or identification of proprietary reports may be included in an appendix or in a separate listing following the reference section titled "Proprietary Sources of Information." (b)

In addition, reference to Institute of Nuclear Power Operations (INPO) documents may **not** be made without prior approval from INPO. Approval to reference INPO documents must be stated on the NRC Form 426A. (c)

Guidelines for developing and presenting reference material are provided in NUREG-0650, Revision 1. (d)

### Reports (2)

Most final reports are sold by GPO and NTIS. A statement indicating this availability is added to each report, as appropriate, by the Publications Branch staff before the report is printed. (a)

Draft reports for which comments are requested are typically announced in the *Federal Register* as being available from the NRC. These reports are not sold at GPO or at NTIS. (b)

## Forms (H)

### Bibliographic Data Sheet (NRC Form 335) (1)

All published NRC reports must include an NRC Form 335 as the final right-hand page of the manuscript. Instructions for completing the NRC Form 335 appear on the back of the form. A completed NRC Form 335 must be submitted to the Technical Publications Section, DFIPS, with the camera-ready copy of the report. Exhibit 2 shows a completed NRC Form 335.

### Release To Publish Unclassified NRC Contractor, Consultant, or Conference Proceedings Reports (NRC Form 426A) (2)

The NRC contact must submit a completed NRC Form 426A (see Exhibit 1) with the camera-ready copy of the report to the Technical Publications Section, DFIPS. NRC Form 426A must be signed by the staff member designated by the appropriate office director.

## Printing and Reprinting (I)

The Publications Branch, DFIPS, will review the camera-ready report submitted for printing for its adherence to the standards and requirements set forth in this directive and handbook, as well as any relevant guidelines from NUREG-0650, Revision 1. Unsatisfactory manuscripts will be returned to the NRC contractor for appropriate action. (1)

Submit a memorandum requesting a **reprint** to the Director, DFIPS, or designee, for approval. Include with the request a written justification and the approval of the office director or designee for reprinting. Also provide address labels for recipients not on NRC standard distribution lists. (2)

## Distribution (J)

The Publications Branch, DFIPS, will arrange distribution for all copies of unclassified formal contractor reports in accordance with instructions on NRC Form 426A (Exhibit 1). The Publications Branch will also arrange automatic distribution of these reports to NRC NUDOCS, the NRC PDR, NTIS, GPO, and the GPO Federal Depository Library Program. (1)

Sensitive unclassified and classified reports will be distributed by the NRC sponsoring office on a case by-case basis. (2)

## **Part IV**

### **International Agreement Reports**

#### **Background and Rationale (A)**

NRC has cooperative nuclear safety research programs that involve either or both foreign governments and organizations and U.S. industry. These programs include monetary contributions, information exchange, and comments on program plans and results as authorized in the Energy Reorganization Act of 1974. To this end, international and U.S. industry agreements have been signed that provide for transmitting unclassified technical information from foreign participants to NRC. These procedures apply only to NRC-managed work. (1)

The interests of all NRC international nuclear safety research program participants are served best by formal dissemination of information on these programs or codes developed for or in cooperation with NRC. (2)

#### **Identification Information (B)**

##### **Cover and Title Page (1)**

The cover and title page will contain a title, a subtitle (if appropriate), the names of the authors, the performing organization, and the NRC office sponsoring the project. The cover and title page will be prepared by the Publications Branch, Division of Freedom of Information and Publications Services (DFIPS).

##### **NRC Report Number (2)**

Each report must be identified by an NRC-controlled alphanumeric number as the prime number unique to that report. The centralized document control system for unique identification is maintained by DFIPS. Numbers may be obtained by calling the Publications Branch at (301) 415-7008. (a)

## Identification Information (B) (continued)

### NRC Report Number (2) (continued)

The NRC identification number will have the form "NUREG/IA-000," where IA indicates "international agreement." The foreign participant's report number, if any, may be inserted below the NUREG number on the cover, if desired. (b)

When a report consists of more than one volume or binding or is issued in more than one edition, include an appropriate volume, number, supplement, part, addendum, or revision designation below the report number and the foreign participant's report number, if any. (c)

### Previous Reports in Series (3)

If the report being prepared is one in an ongoing series, list all previous reports in the series. Include report numbers and issuance dates. Place this list on the back of the title page. If this list cannot be placed on a single page, place the pages at the end of the front matter rather than on the back of the title page.

## Report Organization and Components (C)

The organization and components of cooperative agreement reports vary somewhat, depending on their purpose and scope. Each of these reports must include an abstract of 200 words or less that appears on a separate page before the table of contents. The abstract must also appear on the "Bibliographic Data Sheet," NRC Form 335 (Exhibit 2). Instructions for completing NRC Form 335 appear on the back of the form (Exhibit 2). Guidance on the special writing requirements for preparing abstracts appears in Section 5.5 of NUREG-0650, Revision 1.

## Availability Information (D)

### References and Bibliographies (1)

Reports or other documents referenced in text, reference sections, bibliographies, and appendixes of unclassified regulatory and technical reports in the NUREG series must be available to the public either in the public domain (as in a public library, at the Government Printing Office (GPO), at the National Technical Information Service (NTIS), or at other reference or sales outlets) or in the NRC Public Document Room. This means that references should not be made to personal communications, interviews, and unpublished information with restricted distribution (e.g., proprietary, National Security, Official Use Only). If the unretrievable information is important and



## Availability Information (D) (continued)

### References and Bibliographies (1) (continued)

unrestricted, it can be quoted in the text, in footnotes, or in appendixes. If the title of a document containing proprietary information is unclassified, it can also be quoted in the text or in a footnote. If credit is due to individuals, they can be mentioned in the text or in an acknowledgment section. Availability may be stated collectively for all entries. (a)

Although proprietary reports may not be included in a list of references, listing or identification of proprietary reports may be included in an appendix or in a separate listing following the reference section titled "Proprietary Sources of Information." (b)

In addition, reference to Institute of Nuclear Power Operations (INPO) documents may **not** be made without prior approval from INPO. Approval to reference INPO documents must be stated on the NRC Form 426A. (c)

Guidelines for developing and presenting reference material are provided in NUREG-0650. Revision 1. (d)

### Reports (2)

These reports will be made available for sale by GPO and NTIS.

## Disclaimer (E)

The following notice will be added by the Publications Branch, DFIPS, on the inside front cover before printing.

### NOTICE

This report was prepared under an international cooperative agreement for the exchange of technical information. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for any third party's use, or the results of such use, of any information, apparatus, product, or process disclosed in this report, or represents that its use by such third party would not infringe privately owned rights.



## **Forms (F)**

### **Bibliographic Data Sheet (NRC Form 335) (1)**

Submit a typed NRC Form 335 (Exhibit 2) with the camera-ready copy to the Technical Publications Section, DFIPS, as the final right-hand page.

### **Release to Publish Unclassified NRC Contractor, Consultant, or Conference Proceedings Reports (NRC Form 426A) (2)**

An NRC Form 426A (Exhibit 1) must be completed and signed by the office director or designee and submitted with the camera-ready copy of the report to the Technical Publications Section, DFIPS.

## **Classified or Sensitive Unclassified Information (G)**

The NRC contact should refer to Management Directive 12.2 or call the Division of Security for answers to questions about the status of classified or sensitive unclassified information in NUREG/IA reports.

## Part V

### Books

#### General (A)

These guidelines apply to books written by contractors and grantees that are printed by NRC. See Part VI of this handbook for guidance on publications, including books, by grantees.

#### Definition (B)

A book refers to a publication intended as a permanent reference or as a textbook or major critical review of a technical or regulatory topic.

#### Format (C)

Books are usually 6 by 9 inches in trim size, but size will be based on requirements such as ease of use and legibility for graphics, foldouts, and the like. The binding (casebound or paperback) will be chosen according to the need for durability. Additional guidance on manuscript preparations can be found in the *U.S. Government Printing Office Style Manual* and the Chicago University's *A Manual of Style*. Refer also to NRC's "Publishing Documents in the NUREG Series" (NUREG-0650, Revision 1). (1)

The contractor shall submit to the NRC project manager the typeset (photocomposed) manuscript suitable for printing. The NRC contact shall submit the manuscript to the Chief, Publications Branch, Division of Freedom of Information and Publications Services, (DFIPS), where it will be reviewed for adherence to the standards set forth and referenced in this directive and handbook. The manuscript will also be reviewed for printing acceptability by the Printing and Mail Services Branch, DFIPS. Unsatisfactory manuscripts will be reported to the NRC contact for appropriate contractual action by the NRC contracting officer or, in the case of Government agency or interagency agreement work, the publications manager of the performing organization. (2)

## Format (C) (continued)

DFIPS will approve the design of the cover and title page containing appropriate information concerning--(3)

- Authors' names (a)
- Organizational identification (b)
- Public availability and sales (c)

All books must include a comprehensive subject index of the book's contents, unless the book is made up almost exclusively of graphical or tabular matter. See NUREG-0650, or *The Chicago Manual Style* (13th ed.) for guidelines on creating an index. (4)

## NRC Document Number (D)

Each book must be identified by an NRC-controlled alphanumeric code unique to that book. The alphanumeric code will have the form NUREG/CR for books prepared by contractors and NUREG/GR for books prepared by grantees. (1)

When a book consists of more than one volume or binding, or is issued in more than one edition, include an appropriate volume, number, supplement, part, addendum, or revision designation directly below the document number. (2)

Numbers are assigned by the Publications Branch, DFIPS. The number may be obtained before the manuscript is submitted to DFIPS for printing by calling the Publications Branch at (301) 415-7166. The DFIPS staff will arrange to meet with the NRC contact for the project and, when appropriate, the author(s), to discuss the publication production requirements and the schedule for the book. (3)

## Availability of Reference Materials (E)

The guidelines for availability of reference material given in Section G of Part III of this handbook also apply to books prepared by contractors and grantees that are published by NRC.

## Reviews (F)

### Peer (1)

Books published by NRC must undergo peer review by experts within and outside NRC. Peer review refers to a critical evaluation of the technical contents of a publication. These reviews may be conducted anonymously by reviewers from the author's own or a related field who are totally independent of the work leading to the manuscript. (a)

Reviewers should be chosen by the NRC office sponsoring the book from the potential audience for the publication and should provide an independent judgment about whether the publication successfully accomplishes the author's aims. Peer reviewers should be chosen for their expertise in the subject matter of the book. They may come from academia, the national laboratories, other Federal agencies, or from other research institutes or consulting firms. They may be identified from the membership rolls of professional societies, American National Standards Institute (ANSI) subcommittees, and the like. Do not choose more than one reviewer from the same organization. (b)

When assessing potential peer reviewers, screen for demonstrated competence and achievement in a specific discipline or research specialty. Assess competence based on the quality of research accomplished, publications in refereed journals, and other significant technical activities, achievements, and honors. Consider the judgment, perspective, and objectivity of reviewers. Consider also the personal integrity of those selected to ensure the confidentiality of information reviewed. Finally, avoid real or perceived conflicts of interest. Do not choose reviewers who are licensees or consultants to licensees, nor reviewers from intervenor groups. Likewise, do not choose reviewers who may profit financially from influencing the information reviewed. (c)

The services of reviewers from outside the agency may be acquired through consultant services contracts. The decision as to whether to reimburse peer reviewers should be made on a case-by-case basis, however. Recognize that reimbursing peer reviewers may give the appearance of a conflict of interest, suggesting to some that because NRC is paying for this service, the agency will seek only reviewers thought to be favorably disposed to the material reviewed. One way to offset this impression is to seek recommendations for peer reviewers from independent organizations, such as the American Physics

## **Reviews (F) (continued)**

### **Peer (1) (continued)**

Society, the American Nuclear Society, the American Society of Mechanical Engineers, or appropriate universities. Reimbursement could then be made to the organization. (d)

### **Copyright (2)**

Copyrighted material must not be reproduced in NRC books without appropriate authority, usually written permission of the copyright holder. See Section 3.4 of NUREG-0650, Revision 1, for information about obtaining copyright permission.

### **Security (3)**

On the basis of the knowledge of the information sources used, the author is responsible for ensuring that the manuscript does not contain classified or other access-controlled information. If uncertainty exists with respect to the security classification of a reference document or manuscript, an authorized classifier or the NRC Division of Security should be contacted for assistance. See also Management Directive 12.2, "NRC Classified Information Security Program."

### **Patent (4)**

The patent review guidelines for draft and final formal reports specified in Section (C)(1) of Part III of this handbook also apply to books prepared by contractors and grantees.

## **Publishing Authorization Form (G) •**

A completed NRC Form 426A (Exhibit 1), signed by the office director or designee or by a DOE national laboratory authorized official if the publication is prepared for the Office of Nuclear Regulatory Research, must be submitted to DFIPS with the book manuscript.

## **Disclaimers (H)**

The following standard U.S. Government notice will be added before printing: (1)



## Disclaimers (H) (continued)

This document was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for any third party's use, or the results of such use, of any information, apparatus, product, or process disclosed in this document, or represents that its use by such third party would not infringe privately owned rights.

The following additional statement may be printed below the standard disclaimer, if authorized by the NRC office director or designee: (2)

This document was prepared under U.S. Nuclear Regulatory Commission (NRC) Contract No. \_\_\_\_\_. The opinions, findings, conclusions, and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the NRC.

Other qualifying statements may be added, if needed. (3)

## Printing (I)

DFIPS will submit book manuscripts to GPO for printing. The printing cycle requires from 6 to 8 weeks.

## Distribution and Sales (J)

The DFIPS staff will arrange distribution in accordance with distribution guidance provided by the NRC project manager on NRC Form 426A (Exhibit 1). (1)

Free distribution should be limited to those who contributed materially to the book or to those for whom the book's subject matter bears directly on their work at or for NRC. (2)

DFIPS will arrange to make the book available for sale through GPO. DFIPS also will arrange to have it made available at the NRC PDR and for the GPO Federal Depository Library Program. (3)



## Part VI

# Grant Publications

### Background and Rationale (A)

The Nuclear Regulatory Commission funds grants for educational and nonprofit institutions, State and local governments, and professional societies for the expansion, exchange, and transfer of knowledge and ideas pursuant to the Atomic Energy Act of 1954, as amended. Sections 31.a and 141.b.

### Publication of Results (B)

The grant will specify the publication requirements of the award. Grant results may be published by NRC, by the grantee, or in the open literature.

#### Publication by NRC (1)

This publication option must be governed by the guidelines specified in Part III of this handbook for reports or in Part V of this handbook for books, as appropriate. See "Identification Information," Section (C) of this part.

#### Publication by a Grantee (2)

When the grant specifies that the grantee is to publish the results of his or her work, the grantee must grant to the Government a royalty-free, nonexclusive, irrevocable license to reproduce, translate, publish, use, and dispose of all copyrightable material first produced or composed in the grantee's performance under the grant.

#### Publication by a Grantee in the Open Literature (3)

When the grantee submits journal articles for publication, each article must be accompanied by the following statement: (a)

## Publication of Results (B) (continued)

### Publication by a Grantee in the Open Literature (3) (continued)

The submitted manuscript has been authored by a grantee of the U.S. Government under Grant No. \_\_\_\_\_. Accordingly, the U.S. Government has a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or allow others to do so, for U.S. Government purposes.

All open literature publications prepared under this grant must contain the following statement: (b)

This paper was prepared with the support of the U.S. Nuclear Regulatory Commission (NRC) under Grant No. \_\_\_\_\_. The opinions, findings, conclusions, and recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the NRC.

If the grantee is requested by the journal or other publisher to transfer the copyright, the grantee author will respond to the journal or other publisher in writing in accord with the sample letter shown as follows: (c)

Dear (Publisher's Name):

We recently received a document for signature assigning copyright and republication rights in the submitted article (title) to (name of publication). This letter is offered in lieu of the document as a means of completing the transfer of ownership. Accordingly, we hereby expressly transfer and assign our rights of ownership in the above-cited work to (name of publisher).

You are advised, however, that the above assignment and any publication or republication of the above-cited work is subject to the following Government rights:

The submitted manuscript has been authored by a grantee of the U.S. Government under Grant No. \_\_\_\_\_. Accordingly, the U.S. Government has a nonexclusive, royalty-free license to publish or reproduce the published form of this contribution, or allow others to do so, for U.S. Government purposes.

Sincerely,

## **Publication of Results (B) (continued)**

### **Reprints of Open Literature Publications (4)**

When any article resulting from work under the grant is published in a scientific, technical, or professional journal, two reprints of the publication must be sent to the cognizant NRC program officer, clearly labeled with the grant number and other appropriate identifying information.

## **Identification Information (C)**

Each report or book published by NRC that results from a grant must be identified by an alphanumeric number, "NUREG/GR-000," where "GR" indicates "grant report." (1)

When the publication consists of more than one volume, number, supplement, part, or binding, or is issued in more than one edition, an appropriate volume, supplement, part, or revision designation must appear below the NUREG/GR number. (2)

Numbers may be obtained from the Publications Branch at (301) 415-7008. (3)

## **Pre-Publication Reviews (D)**

The U.S. Congress characterizes the relationship between a Federal agency and a grant recipient as one in which "the recipient can expect to run the project without agency collaboration, participation, or intervention as long as it is run in accordance with the terms of the instrument."

## Glossary\*

**Book.** A publication intended as a permanent reference or textbook or as a major critical review of a technical or regulatory topic. It may be *casebound* (hardback) or paperbound.

**Camera-Ready Copy.** Pages ready for printing by the offset printing process. This is a colloquial term used even though the printing process may not involve the so-called copy camera (see also *reproducible masters*).

**Casebound.** Term denoting a book with a hard cover.

**Compose.** To arrange letters, in type or film, for printing. Usually synonymous with *typesetting*.

**Composition.** The process of setting type by hot-metal casting, phototypesetting, or electronic character generating devices (e.g., computers) for the purpose of producing *camera-ready copy*, negatives, a plate, or an image to be used in the production of *printing* or microform.

**Contractor Report.** Record of work done (a report) prepared in accordance with the provisions of a contract or under or pursuant to an interagency agreement.

**Copyright.** A form of protection provided by the laws of the United States (Title 17, U.S. Code), to the authors of "original works of authorship," including literary, dramatic, musical, artistic, and certain other intellectual works. This protection is available to both published and unpublished works. Generally, copyrighted material may not be reproduced without the permission of the author or the publisher.

**Disseminate.** To announce the publication of reports and make them available for free distribution, sale, or copying.

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\*Words in *italics* in definitions are also defined in the glossary.

## Glossary (continued)

**Distribution.** Reports dispensed to specific organizations and individuals to ensure their participation in the regulatory process and support of research and technological investigations. Such distribution may be accomplished by the use of standard distribution lists established and maintained by the Division of Freedom of Information and Publications Services at the request of the originating office or region.

**Documentation.** Classification and associated markings required for classified or sensitive unclassified documents, the NRC report number unique to the report, title (and subtitle, if any), author or correspondent (if any), organization identification and contract number (or job code number), date, and availability.

**Edition.** All copies of a book printed from the same type. Edition also refers to format, such as *paperback*, *casebound*, or to the text, as revised, expanded, and so on. If extensive revisions have been made to the text and the book is reprinted, the revised version is the new edition.

**Grant.** A legal instrument which defines the relationship between the Government and a recipient for the transfer of money, property, services, or anything of value to the recipient for the accomplishment of a public purpose of support or stimulation authorized by law. A grant presumes a limited amount of involvement by the agency in the performance by the recipient.

**Grant Report.** A record of work done prepared in accordance with the provisions of the *grant*.

**Index.** An alphabetical list of all major topics discussed in a *book*. It cites the page numbers where each topic can be found. The index is the last section of a book.

**International Agreement.** Cooperative nuclear safety research programs that involve either or both foreign governments and organizations and U.S. industry. Such involvement, authorized under 42 U.S.C. 5801, includes monetary contributions, information exchanges, and comments on program plans and results.

**International Agreement Report.** A record of work done prepared in accordance with the provisions of an *international agreement*.



## Glossary (continued)

**Manuscript.** A handwritten, typewritten, or *composed* version of a document, as distinguished from a printed copy.

**NRC Project Manager.** The NRC staff member responsible for the work performed by consultants or contractors and their subcontractors, or for work performed under or pursuant to an interagency agreement.

**Paperback.** A *book* with a flexible paper cover.

**Peer Review.** A critical evaluation of the technical contents of a publication. These reviews are conducted by reviewers from the author's own or a related field who are totally independent of the work leading to the *manuscript*. Reviewers should be chosen from the potential audience for the publication and should provide an independent judgment about whether the publication successfully accomplishes the author's aims.

**Photocomposition.** *Typesetting* performed when photosensitive paper or film is exposed to light in the form of letters and characters. Photocomposition is to be distinguished from hot-metal and typewriter *composition*.

**Printing.** As defined by the Joint Committee on Printing, includes and applies to the process of *composition*, platemaking, presswork, collating, and microform; the equipment used in such processes; or the end product produced by such processes and equipment.

**Proprietary Information.** Trade secrets; privileged or confidential research, development, commercial, or financial information exempt from mandatory disclosure under 10 CFR Part 2 (Sections 2.740 and 2.790) and under 10 CFR Part 9 (Section 9.17); and other information submitted in confidence to the NRC by a foreign source and determined to be unclassified by the NRC.

**Public Domain.** Materials for which a *copyright* never existed, such as U.S. Government publications, or for which a copyright has expired.

**Publicly Available Documents.** Information (reports and references) that is available in the NRC Public Document Room (PDR) for public inspection and copying or available in the *public domain*.



## Glossary (continued)

**Reproducible Masters.** *Camera-ready copy* that includes (1) originals of line drawings (or prints that can be copied); (2) glossy prints of black and white photographs; (3) original *typeset* or printed text, tables, cover, title page, contents, and abstract; or (4) other forms of the materials that a printer can reproduce.

**Trim Size.** The final size of the whole page, margins included.

**Typesetting.** The placement of type on a page (letters, numbers, and other characters) in conformance with specific style and layout instructions.

**Unique Identification.** NRC Identification (NUREG number) used on a report and its attachments, revisions, and supplements that is not used on any other publication.

Volume 3, Part 1 - Publications, Mail, and Information Disclosure  
Unclassified Contractor and Grantee Publications in the NUREG Series  
Handbook 3.8 Exhibits

**Exhibit 1**  
**NRC Form 426A, "Release to Publish Unclassified NRC Contractor, Consultant, or Conference Proceedings Reports"**

NRC FORM 426A (3-89) NRCM 1162, 32G		U.S. NUCLEAR REGULATORY COMMISSION		1. REPORT NUMBER (if any) NUREG/CR-5627 BNL-NUREG-52257 <small>Obtain from NRC/Contractor Publications Section or 492-7802</small>	
RELEASE TO PUBLISH UNCLASSIFIED NRC CONTRACTOR, CONSULTANT, OR CONFERENCE PROCEEDINGS REPORTS <small>(Please Print Name)</small>					
2. TITLE AND SUBTITLE (Give in full as shown on document) Alternate Modal Combination Methods in Response Spectrum Analysis					
3. AUTHOR (If more than one, name first author followed by "and others") P. Bezler and others					
4. CONTRACTOR Brookhaven National Laboratory Department of Nuclear Energy		MAILING ADDRESS (Include and Street, City, State and ZIP Code) Building 129 Upton, NY 11973		TELEPHONE NUMBER 666-2447	
5. TYPE OF DOCUMENT (Check appropriate box) <input checked="" type="checkbox"/> A. TECHNICAL REPORT <input checked="" type="checkbox"/> FORMAL <input type="checkbox"/> LETTER REPORT <input type="checkbox"/> B. CONFERENCE PAPER (If so, complete items (1), (2), and (3) below) (1) TITLE OF CONFERENCE PAPER: (2) DATE(S) OF CONFERENCE: (3) LOCATION OF CONFERENCE: <input type="checkbox"/> C. OTHER (Indicate type of other)					
7. DISTRIBUTION (List NRC distribution codes. Provide mailing address for special distribution as required by NRC staff. Give name and title and date. If no other address, complete mailing address.) RA 50 copies: Judy Liu, Technical Information Division, Bldg. 477B, Brookhaven National Laboratory, Upton, NY 11973 10 copies: Nilesh Chokshi, RES, NLS-717					
8. CERTIFICATION (ANSWER ALL QUESTIONS) Is all material represented in this report available to the public either through a public library, the Government Printing Office, the NRC/Contractor Publications Section, or the NRC Public Document Room? If no, list the specific availability of a referenced document with the reference below.					
YES	NO	A. REFERENCE AVAILABILITY <input checked="" type="checkbox"/> SPECIFIC AVAILABILITY			
		B. COPYRIGHTED MATERIAL Does this report contain copyrighted material? If yes, obtain a letter of release from the source that grants the copyright. <input checked="" type="checkbox"/> C. COMPUTER CODES Does this report contain a computer code? If yes, does it comply with the standards in NRC Manual Chapter 6B4, "Planning and Control of Automated Data Processing (ADP) Resources"?			
		D. PATENT CLEARANCE Does this report require patent clearance? If yes, the NRC Patent Counsel must sign the clearance by signing below. NRC PATENT COUNSEL (Type or Print Name) SIGNATURE DATE			
		E. INFORMATION REQUESTS Does this report contain any data, information, survey, or data collection requests?			
		F. LICENSING REQUIREMENTS Does this report contain requirements on licensing?			
9. AUTHORIZATION					
A. DCE LAB AUTHORIZING OFFICIAL (If applicable) (Type or print name) R.A. Bari		SIGNATURE <i>R.A. Bari</i>		DATE 9/25/90	
B. NRC RESPONSIBLE STAFF MEMBER (Type or print name) A. Murphy		SIGNATURE <i>A. Murphy</i>		OFF/CLV TELEPHONE MAIL STOP DATE 492-3860 NLS217A 10/10/90	

NRC FORM 426A (3-89)

Approved: June 17, 1991  
(Revised: July 9, 1995)

## Exhibit 2

### NRC Form 335, "Bibliographic Data Sheet"

NRC FORM 335 (2-89)		U.S. NUCLEAR REGULATORY COMMISSION		1. REPORT NUMBER (Classified by NRC, Add Vol. 5-Info. Rev. and Subsequent Numbers, if any.)	
BIBLIOGRAPHIC DATA SHEET (See instructions on the reverse)				NUREG/CR-5603 EGG-2607	
				3. DATE REPORT PUBLISHED MONTH: October YEAR: 1990	
2. TITLE AND SUBTITLE  Pressure-Dependent Fragilities for Piping Components: Pilot Study on Davis-Besse Nuclear Power Station				4. FIN OR GRANT NUMBER B5699	
5. AUTHOR(S)  D.A. Wesley, T.R. Kipp, D.K. Nakaki, H. Hadidi-Tamjed				6. TYPE OF REPORT Technical	
				7. PERIOD COVERED (Indicate Dates)	
8. PERFORMING ORGANIZATION - NAME AND ADDRESS (If NRC, provide Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address. If other, provide name and mailing address.) ABB Impell Corporation 27401 Los Altos, Suite 480 Mission Viejo, CA 92691				Under contract to: Idaho National Engineering Laboratory EG&G Idaho, Inc. Idaho Falls, ID 83415	
9. SPONSORING ORGANIZATION - NAME AND ADDRESS (If NRC, give "Same as above". If contractor, provide NRC Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address.) Division of Safety Issue Resolution Office of Nuclear Regulatory Research U.S. Regulatory Commission Washington, D.C. 20555					
10. SUPPLEMENTARY NOTES					
11. ABSTRACT (200 words or less) The capacities of four, low-pressure fluid systems to withstand pressures and temperatures above the design levels were established for the Davis-Besse Nuclear Power Station. The results will be used in evaluating the probability of plant damage from Interfacing System Loss of Coolant Accidents (ISLOCA) as part of the probabilistic risk assessment of the Davis-Besse nuclear power station undertaken by EG&G Idaho, Inc. Included in this evaluation are the tanks, heat exchangers, filters, pumps, valves, and flanged connections for each system. The probabilities of failure, as a function of internal pressure, are evaluated as well as the variabilities associated with them. Leak rates or leak areas are estimated for the controlling modes of failure. The pressure capacities for the pipes and vessels are evaluated using limit-state analyses for the various failure modes considered. The capacities are dependent on several factors, including the material properties, modeling assumptions, and the postulated failure criteria. The failure modes for gasketed-flange connections, valves, and pumps do not lend themselves to evaluation by conventional structural mechanics techniques and evaluation must rely primarily on the results from ongoing gasket research test programs and available vendor information and test data.					
12. KEY WORDS/DESCRIPTORS (List number of keywords and give keywords in ascending order.) pressure-dependent fragilities piping components Interfacing System Loss of Coolant Accidents (ISLOCA) probabilistic risk assessment Davis-Besse Nuclear Power Station				13. AVAILABILITY STATEMENT Unlimited	
				14. SECURITY CLASSIFICATION (This Page) Unclassified (This Report) Unclassified	
				15. NUMBER OF PAGES	
				16. PRICE	

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Unclassified Contractor and Grantee Publications in the NUREG Series  
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Exhibit 2 (continued)

DO NOT PRINT THESE INSTRUCTIONS AS A PAGE IN THE NUREG REPORT

INSTRUCTIONS

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1. **REPORT NUMBER.** Each individually bound report must carry a unique alphanumeric designation (NUREG) assigned by the Regulatory Publications Branch, Division of Freedom of Information and Publications Services, in accordance with American National Standard ANSI Z39.23-1983, Standard Technical Report Number (STRN). Use uppercase letters, Arabic numerals, slashes, and hyphens only, as in the following examples: NUREG-0100, NUREG/CP-0010, NUREG/CR-0100, and NUREG/BR-0010. For reports in a series add Vol., Supp., Rev., and Addendum, when necessary. Add contractor cross-reference identification number (if any) below NUREG series number, e.g., PNL-XXXX, SANDXX-XXXX, SAI-XXXX.
2. **TITLE AND SUBTITLE.** Title should indicate clearly and briefly the subject (coverage) of the report; including any subtitle to the main title. When a report is prepared in more than one volume, repeat the primary title, add volume number and include subtitle for the specific volume. Use upper and lower case letters, but capitalize computer code names. Do not use acronyms and initialisms in titles; may be added in parenthesis.
3. **DATE REPORT PUBLISHED.** Each report must carry a date indicating month and year published.
4. **FIN OR GRANT NUMBER.** Insert the FIN or grant number under which report was prepared.
5. **AUTHOR(S).** Give name(s) in conventional order (e.g., John R. Doe, J. Robert Doe). List author's affiliation if it is different from the performing organization.
6. **TYPE OF REPORT.** State draft, final, preliminary, topical, technical, regulatory, annual, quarterly, etc.
7. **PERIOD COVERED.** Add inclusive dates.
8. **PERFORMING ORGANIZATION NAME AND MAILING ADDRESS.** Give name, street, city, state, and ZIP code. List no more than two levels of an organizational hierarchy. Display the name of the organization exactly as follows: Division, Office, Organization or Government agency, and address.
9. **SPONSORING ORGANIZATION.** If NRC, type "Same as above"; if contractor, provide NRC Division, Office or Region, U.S. Nuclear Regulatory Commission, and mailing address.
10. **SUPPLEMENTARY NOTES.** Enter information not included elsewhere but useful, such as: Prepared in cooperation with ... Presented at conference of ... To be published ... Docket No. ... When a report is revised, indicate whether the new report supersedes or supplements the older report.
11. **ABSTRACT.** Include a brief (200 words or less) factual summary of the most significant information contained in the report. If the report contains a significant bibliography or literature survey or multiple volumes, mention it here. Abstract is to be prepared by author or project manager.
12. **KEY WORDS/DESCRIPTORS.** Select from the Energy Data Base Subject Thesaurus, DOE/TIC-700R R-5, the proper authorized terms that identify the major concept of the research and are sufficiently specific and precise to be used as index entries for cataloging.
13. **AVAILABILITY STATEMENT.** Denote public releasability, for example "unlimited", or limitation for reasons other than security.
14. **SECURITY CLASSIFICATION.** Enter U.S. Security Classification in accordance with U.S. Security Regulations (i.e., unclassified).
15. **NUMBER OF PAGES.** Leave blank. (Added by NTIS)
16. **PRICE.** Leave blank. (Added by NTIS)

U.S. GOVERNMENT PRINTING OFFICE: 1985 O-344-851

## Exhibit 3

### Microfiche Sheet Sample

NUREG/CR-XXXX  
CONTRACTOR ID NO.  
CLASSIFICATION

DESCRIPTION OF MICROFICHE  
(e.g., Appendix A)

CONTRACTOR NAME (Optional)

PUBLICATION DATE  
81 of 09 (Sheet ID)

**SAMPLE**



## CONTRACTOR SPENDING PLAN - INSTRUCTIONS

The Contractor Spending Plan (CSP) is an important tool for projecting and tracking contract costs and progress each task under the contract.

### Applicability

The Nuclear Regulatory Commission (NRC) requires that the CSP be completed for cost reimbursement contracts when the award amount is expected to exceed \$100,000 and the period of performance is expected to exceed 6 months. For task order type contracts, a CSP is required when an individual cost reimbursement task order is expected to exceed the above thresholds. When a contract or task order modification increases the contract or task order amount of a cost reimbursement contract or task order to over \$100,000 and the period of performance from the effective date of the modification to the contract or task order expiration exceeds 6 months, a CSP is required for all contract work to be performed after the effective date of the modification.

### Submission

1. A CSP is required:
  - a. as part of the cost proposal for a cost reimbursement contract or individual task order, or modification to a contract or task order which meets the above thresholds;
  - b. as part of the Best and Final Offer (if requested) as a result of negotiations;
2. Updated CSP information is required on a monthly basis or as approved by the CO as part of the "Financial Status Report" (Ref: Section F.3, "Financial Status Report").

### Format

The attached CSP sample format may be duplicated and used by the Contractor, or modified to permit more accurate reporting or to meet other needs of the contractor. For instance, the sample format provides spaces to report projected costs for 12 months, but the contractor may wish to alter the sample format for shorter or longer contract/task order periods. The contractor may also wish to alter the sample format for ease of typing or automated production. So long as complete information is provided on actual and projected costs or accomplishments, changes to the format to improve relevance to the circumstances are encouraged.

It is up to the discretion of the offeror to determine the appropriate level of cost detail to be presented based on the complexity of the effort. This plan reflects only the minimum requirements for submission of cost details which will be considered for completeness, reasonableness, and as a measure of effective management of the effort. The Contracting Officer reserves the right to request additional cost information, if deemed necessary.



# CONTRACTOR SPENDING PLAN (CSP)

(to be completed as a part of the Offeror's Cost Proposal for each cost reimbursement contract or individual task order or for any contract or task order modification which exceeds \$100,000 and has a performance period exceeding 6 months)

Solicitation No. \_\_\_\_\_  
 Contract No. \_\_\_\_\_  
 Task Order No. \_\_\_\_\_  
 Modification No. \_\_\_\_\_  
 Offeror/Contractor Name: \_\_\_\_\_

Performance Period: from \_\_\_\_/\_\_\_\_/\_\_\_\_ to \_\_\_\_/\_\_\_\_/\_\_\_\_

Total Estimated Costs (including fixed fee, if any) of the Proposed Contract/Task Order/Modification (to a contract or task order) at the time of proposal submission.  
 Does not include options.

\$ \_\_\_\_\_

Provide cost details by month for the total contract/task order/or task order modification

Cost Elements	1st Month	2nd Month	3rd Month	4th Month	5th Month	6th Month
Direct Costs	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Indirect Costs	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Total Estimated Costs including fixed fee if any	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Project Completion	_____ X	_____ X	_____ X	_____ X	_____ X	_____ X
Cost Elements	7th Month	8th Month	9th Month	10th Month	11th Month	12th Month
Direct Costs	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Indirect Costs	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Total Estimated Costs including fixed fee if any	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____	\$ _____
Project Completion	_____ X	_____ X	_____ X	_____ X	_____ X	_____ X

## NUCLEAR REGULATORY COMMISSION ACQUISITION REGULATION

## 2009.570 NRC organizational conflicts of interest.

## §2009.570-1 Scope of policy.

(a) It is the policy of NRC to avoid, eliminate, or neutralize contractor organizational conflicts of interest. The NRC achieves this objective by requiring all prospective contractors to submit information describing relationships, if any, with organizations or persons (including those regulated by the NRC) which may give rise to actual or potential conflicts of interest in the event of contract award.

(b) Contractor conflict of interest determinations cannot be made automatically or routinely. The application of sound judgment on virtually a case-by-case basis is necessary if the policy is to be applied to satisfy the overall public interest. It is not possible to prescribe in advance a specific method or set of criteria which would serve to identify and resolve all of the contractor conflict of interest situations which might arise. However, examples are provided in these regulations to guide application of this policy guidance. The ultimate test is as follows: Might the contractor, if awarded the contract, be placed in a position where its judgment may be biased, or where it may have an unfair competitive advantage?

(c) The conflict of interest rule contained in this subpart applies to contractors and offerors only. Individuals or firms who have other relationships with the NRC (e.g., parties to a licensing proceeding) are not covered by this regulation. This rule does not apply to the acquisition of consulting services through the personnel appointment process, NRC agreements with other Government agencies, international organizations, or state, local, or foreign Governments. Separate procedures for avoiding conflicts of interest will be employed in these agreements, as appropriate.

## §2009.570-2 Definitions.

As used in §2009.570:

Affiliates means business concerns which are affiliates of each other when either directly or indirectly one concern or individual controls or has the power to control another, or when a third party controls or has the power to control both.

Contract means any contractual agreement or other arrangement with the NRC except as provided in §2009.570-1(c).

Contractor means any person, firm, unincorporated association, joint venture, co-sponsor, partnership, corporation, affiliates thereof, or their successors in interest, including their chief executives, directors, key personnel (identified in the contract), proposed consultants or subcontractors, which are a party to a contract with the NRC.

Evaluation activities means any effort involving the appraisal of a technology, process, product, or policy.

Offeror or prospective contractor means any person, firm, unincorporated association, joint venture, co-sponsor, partnership, corporation, or their affiliates or successors in interest, including their chief executives, directors, key personnel, proposed consultants, or subcontractors, submitting a bid or proposal, solicited or unsolicited, to the NRC to obtain a contract.

Organizational conflicts of interest means that a relationship exists whereby a contractor or prospective contractor has present or planned interests related to the work to be performed under an NRC contract which:

(1) May diminish its capacity to give impartial, technically sound, objective assistance and advice, or may otherwise result in a biased work product; or

(2) May result in its being given an unfair competitive advantage.

Potential conflict of interest means that a factual situation exists that suggests that an actual conflict of interest may arise from award of a proposed contract. The term potential conflict of interest is used to signify those situations that-

(1) Merit investigation before contract award to ascertain whether award would give rise to an actual conflict; or

(2) Must be reported to the contracting officer for investigation if they arise during contract performance.

Research means any scientific or technical work involving theoretical analysis, exploration, or experimentation.

Subcontractor means any subcontractor of any tier who performs work under a contract with the NRC except subcontracts for supplies and subcontracts in amounts not exceeding the small purchase threshold.

Technical consulting and management support services means internal assistance to a component of the NRC in the formulation or administration of its programs, projects, or policies which normally require that the contractor be given access to proprietary information or to information that has not been made available to the public. These services typically include assistance in the preparation of program plans, preliminary designs, specifications, or statements of work.

§2009.570-3 Criteria for recognizing contractor organizational conflicts of interest.

(a) General.

(1) Two questions will be asked in determining whether actual or potential organizational conflicts of interest exist:

(i) Are there conflicting roles which might bias an offeror's or contractor's judgment in relation to its work for the NRC?

(ii) May the offeror or contractor be given an unfair competitive advantage based on the performance of the contract?

(2) NRC's ultimate determination that organizational conflicts of interest exist will be made in light of common sense and good business judgment based upon the relevant facts. While it is difficult to identify and to prescribe in advance a specific method for avoiding all of the various situations or relationships that might involve potential organizational conflicts of interest, NRC personnel will pay particular attention to proposed contractual requirements that call for the rendering of advice, consultation or evaluation activities, or similar activities that directly lay the groundwork for the NRC's decisions on regulatory activities, future procurements, and research programs. Any work performed at an applicant or licensee site will also be closely scrutinized by the NRC staff.

(b) Situations or relationships. The following situations or relationships may give rise to organizational conflicts of interest:

(1) The offeror or contractor shall disclose information, that may give rise to organizational conflicts of interest under the following circumstances. The information may include the scope of work or specification for the requirement, being performed, the period of performance, and the name and telephone number for a point of contact at the organization knowledgeable about the commercial contract.

(i) Where the offeror or contractor provides advice and recommendations to the NRC in the same technical area where it is also providing consulting assistance to any organization regulated by the NRC.

(ii) Where the offeror or contractor provides advice to the NRC on the same or similar matter on which it is also providing assistance to any organization regulated by the NRC.

(iii) Where the offeror or contractor evaluates its own products or services, or has been substantially involved in the development or marketing of the products or services of another entity.

(iv) Where the award of a contract would result in placing the offeror or contractor in a conflicting role in which its judgment may be biased in relation to its work for the NRC, or would result in an unfair competitive advantage for the offeror or contractor.

(v) Where the offeror or contractor solicits or performs work at an applicant or licensee site while performing work in the same technical area for the NRC at the same site.

(2) The contracting officer may request specific information from an offeror or contractor or may require special contract clauses such as provided in §2009.570-5(b) in the following circumstances:

(i) Where the offeror or contractor prepares specifications that are to be used in competitive procurements of products or services covered by the specifications.

(ii) Where the offeror or contractor prepares plans for specific approaches or methodologies that are to be incorporated into competitive procurements using the approaches or methodologies.

(iii) Where the offeror or contractor is granted access to information not available to the public concerning NRC plans, policies, or programs that could form the basis for a later procurement action.

(iv) Where the offeror or contractor is granted access to proprietary information of its competitors.

(v) Where the award of a contract might result in placing the offeror or contractor in a conflicting role in which its judgment may be biased in relation to its work for the NRC or might result in an unfair competitive advantage for the offeror or contractor.

(c) Policy application guidance. The following examples are illustrative only and are not intended to identify and resolve all contractor organizational conflict of interest situations.

(1) (i) Example. The ABC Corp., in response to a Request For Proposal (RFP), proposes to undertake certain analyses of a reactor component as called for in the RFP. The ABC Corp. is one of several companies considered to be technically well qualified. In response to the inquiry in the RFP, the ABC Corp. advises that it is currently performing similar analyses for the reactor manufacturer.

(ii) Guidance. An NRC contract for that particular work normally would not be awarded to the ABC Corp. because the company would be placed in a position in which its judgment could be biased in relationship to its work for the NRC. Because there are other well-qualified companies available, there would be no reason for considering a waiver of the policy.

(2) (i) Example. The ABC Corp., in response to an RFP, proposes to perform certain analyses of a reactor component that is unique to one type of advanced reactor. As is the case with other technically qualified companies responding to the RFP, the ABC Corp. is performing various projects for several different utility clients. None of the ABC Corp. projects have any relationship to the work called for in the RFP. Based on the NRC evaluation, the ABC Corp. is considered to be the best qualified company to perform the work outlined in the RFP.

(ii) Guidance. An NRC contract normally could be awarded to the ABC Corp. because no conflict of interest exists which



could motivate bias with respect to the work. An appropriate clause would be included in the contract to preclude the ABC Corp. from subsequently contracting for work with the private sector that could create a conflict during the performance of the NRC contract. For example, ABC Corp. would be precluded from the performance of similar work for the company developing the advanced reactor mentioned in the example.

(3) (i) Example. The ABC Corp., in response to a competitive RFP, submits a proposal to assist the NRC in revising NRC's guidance documents on the respiratory protection requirements of 10 CFR Part 20. ABC Corp. is the only firm determined to be technically acceptable. ABC Corp. has performed substantial work for regulated utilities in the past and is expected to continue similar efforts in the future. The work has and will cover the writing, implementation, and administration of compliance respiratory protection programs for nuclear power plants.

(ii) Guidance. This situation would place the firm in a role where its judgment could be biased in relationship to its work for the NRC. Because the nature of the required work is vitally important in terms of the NRC's responsibilities and no reasonable alternative exists, a waiver of the policy, in accordance with §2009.570-9 may be warranted. Any waiver must be fully documented in accordance with the waiver provisions of policy with particular attention to the establishment of protective mechanisms to guard against bias.

(4) (i) Example. The ABC Corp. submits a proposal for a new system to evaluate a specific reactor component's performance for the purpose of developing standards that are important to the NRC program. The ABC Corp. has advised the NRC that it intends to sell the new system to industry once its practicability has been demonstrated. Other companies in this business are using older systems for evaluation of the specific reactor component.

(ii) Guidance. A contract could be awarded to the ABC Corp. if the contract stipulates that no information produced under the contract will be used in the contractor's private activities unless this information has been reported to the NRC. Data on how the reactor component performs, which is reported to the NRC by contractors, will normally be disseminated by the NRC to others to preclude an unfair competitive advantage. When the NRC furnishes information about the reactor component to the contractor for the performance of contracted work, the information may not be used in the contractor's private activities unless the information is generally available to others. Further, the contract will stipulate that the contractor will inform the NRC contracting officer of all situations in which the information developed about the performance of the reactor component under the contract, is proposed to be used.

(5) (i) Example. The ABC Corp., in response to a RFP proposes to assemble a map showing certain seismological features



of the Appalachian fold belt. In accordance with the representation in the RFP and §2009.570-3(b)(1)(i), ABC Corp. informs the NRC that it is presently doing seismological studies for several utilities in the eastern United States, but none of the sites are within the geographic area contemplated by the NRC study.

(ii) Guidance. The contracting officer would normally conclude that award of a contract would not place ABC Corp. in a conflicting role where its judgment might be biased. Section 2052.209-73(c) Work for Others, would preclude ABC Corp. from accepting work which could create a conflict of interest during the term of the NRC contract.

(6) (i) Example. AD Division of ABC Corp., in response to a RFP, submits a proposal to assist the NRC in the safety and environmental review of applications for licenses for the construction, operation, and decommissioning of fuel cycle facilities. ABC Corp. is divided into two separate and distinct divisions, AD and BC. The BC Division performs the same or similar services for industry. The BC Division is currently providing the same or similar services required under the NRC's contract for an applicant or licensee.

(ii) Guidance. An NRC contract for that particular work would not be awarded to the ABC Corp. The AD Division could be placed in a position to pass judgment on work performed by the BC Division, which could bias its work for NRC. Further, the Conflict of Interest provisions apply to ABC Corp. and not to separate or distinct divisions within the company. If no reasonable alternative exists, a waiver of the policy could be sought in accordance with §2009.570-9.

7(i) EXAMPLE The ABC Corp. completes an analysis for NRC of steam generator tube leaks at one of a utility's six sites. Three months later, ABC Corp. is asked by this utility to perform the same analysis at another of its sites.

(ii) GUIDANCE §2052.290-73(c)(3) would prohibit the contractor from beginning this work for the utility until one year after completion of the NRC work at the first site.

8(i) EXAMPLE ABC Corp. is assisting NRC in a major on-site analysis of a utility's redesign of the common areas between its twin reactors. The contract is for two years with an estimated value of \$5 million. Near the completion of the NRC work, ABC Corp. requests authority to solicit for a \$100K contract with the same utility to transport spent fuel to a disposal site. ABC Corp. is performing no other work for the utility.

(ii) GUIDANCE The Contracting Officer, would allow the contractor to proceed with the solicitation because A) it is not in the same technical area as the NRC work and B) the potential for technical bias by the contractor because of financial ties to

the utility is slight due to the relative value of the two contracts.

9(i) EXAMPLE The ABC Corp. is constructing a turbine building and installing new turbines at a reactor site. The contract with the utility is for five years and has a total value of \$100 million. ABC Corp. has responded to an NRC Request For Proposal requiring the contractor to participate in a major team inspection unrelated to the turbine work at the same site. The estimated value of the contract is \$75K.

(ii) GUIDANCE An NRC contract would not normally be awarded to ABC Corp. since these factors create the potential for financial loyalty to the utility that may bias the technical judgment of the contractor.

(d) Other considerations.

(1) The fact that the NRC can identify and later avoid, eliminate, or neutralize any potential organizational conflicts arising from the performance of a contract is not relevant to a determination of the existence of conflicts prior to the award of a contract.

(2) It is not relevant that the contractor has the professional reputation of being able to resist temptations which arise from organizational conflicts of interest, or that a follow-on procurement is not involved, or that a contract is awarded on a competitive or a sole source basis.

§2009.570-4 Representation.

(a) The following procedures are designed to assist the NRC contracting officer in determining whether situations or relationships exist which may constitute organizational conflicts of interest with respect to a particular offeror or contractor. The procedures apply to small purchases meeting the criteria stated in the following paragraph (b) of this section.

(b) The organizational conflicts of interest representation provision at §2052.209-72 must be included in solicitations and unsolicited proposals, (including those for task orders and modifications for new work) for:

- (1) Evaluation services or activities;
- (2) Technical consulting and management support services;
- (3) Research; and

(4) Other contractual situations where special organizational conflicts of interest provisions are noted in the solicitation and would be included in the resulting contract. This representation requirement also applies to all modifications for additional effort under the contract except those issued under the "Changes" clause. Where, however, a statement of the type required by the organizational conflicts of interest representation provisions has previously been submitted with regard to the contract being modified, only an updating of the statement is required.

(c) The offeror may, because of actual or potential organizational conflicts of interest, propose to exclude specific kinds of work contained in a RFP unless the RFP specifically prohibits the exclusion. Any such proposed exclusion by an offeror will be considered by the NRC in the evaluation of proposals. If the NRC considers the proposed excluded work to be an essential or integral part of the required work and its exclusion would be to the detriment of the competitive posture of the other offerors, the NRC shall reject the proposal as unacceptable.

(d) The offeror's failure to execute the representation required by paragraph (b) of this section with respect to an invitation for bids is considered to be a minor informality. The offeror will be permitted to correct the omission.

#### §2009.570-5 Contract clauses.

(a) General contract clause. All contracts and small purchases of the types set forth in §2009.570-4(b) must include the clause entitled: "Contractor Organizational Conflicts of Interest," set forth in §2052.209-73.

(b) Other special contract clauses. If it is determined from the nature of the proposed contract that an organizational conflict of interest exists, the contracting officer may determine that the conflict can be avoided, or, after obtaining a waiver in accordance with §2009.570-9, neutralized through the use of an appropriate special contract clause. If appropriate, the offeror may negotiate the terms and conditions of these clauses, including the extent and time period of any restriction. These clauses include but are not limited to:

(1) Hardware exclusion clauses which prohibit the acceptance of production contracts following a related non-production contract previously performed by the contractor;

(2) Software exclusion clauses;

(3) Clauses which require the contractor (and certain of its key personnel) to avoid certain organizational conflicts of interest; and

(4) Clauses which provide for protection of confidential data and guard against its unauthorized use.

#### §2009.570-6 Evaluation, findings, and contract award.

The contracting officer shall evaluate all relevant facts submitted by an offeror and other relevant information. After evaluating this information against the criteria of §2009.570-3, the contracting officer shall make a finding of whether organizational conflicts of interest exist with respect to a particular offeror. If it has been determined that real or potential conflicts of interest exist, the contracting officer shall:

(a) Disqualify the offeror from award;

(b) Avoid or eliminate such conflicts by appropriate measures; or

(c) Award the contract under the waiver provision of §2009.570-9.

#### §2009.570-7 Conflicts identified after award.

If potential organizational conflicts of interest are identified after award with respect to a particular contractor, and the contracting officer determines that conflicts do exist and that it would not be in the best interest of the Government to terminate the contract, as provided in the clauses required by §2009.570-5, the contracting officer shall take every reasonable action to avoid, eliminate, or, after obtaining a waiver in accordance with §2009.570-9, neutralize the effects of the identified conflict.

#### §2009.570-8 Subcontracts.

The contracting officer shall require offerors and contractors to submit a representation statement from all subcontractors (other than a supply subcontractor) and consultants performing services in excess of \$10,000 in accordance with §2009.570-4(b). The contracting officer shall require the contractor to include contract clauses in accordance with §2009.570-5 in consultant agreements or subcontracts involving performance of work under a prime contract.

#### §2009.570-9 Waiver.

(a) The contracting officer determines the need to seek a waiver for specific contract awards, with the advice and concurrence of the program office director and legal counsel. Upon the recommendation of the Procurement Executive, and after consultation with legal counsel, the Executive Director for Operations may waive the policy in specific cases if he determines that it is in the best interest of the United States to do so.

(b) Waiver action is strictly limited to those situations in which:

(1) The work to be performed under contract is vital to the NRC program.

(2) The work cannot be satisfactorily performed except by a contractor whose interests give rise to a question of conflict of interest.

(3) Contractual and/or technical review and surveillance methods can be employed by the NRC to neutralize the conflict.

(c) For any waivers, the justification and approval documents must be placed in the NRC Public Document Room, 2120 L Street, NW. (Lower Level), Washington, DC.

#### §2009.570-10 Remedies.

In addition to other remedies permitted by law or contract for a breach of the restrictions in this subpart or for any intentional misrepresentation or intentional nondisclosure of any relevant interest required to be provided for this section, the NRC may debar the contractor from subsequent NRC contracts.