

# ROUTING AND TRANSMITTAL SLIP FOR 173 WORK ORDER

May 5, 2000

1. ~~Monaco, PMPDAS~~

2. ~~Mitchell/Trottier~~

3. ~~Farr~~

4. ~~King~~

7. ~~Price, PMPDAS~~

Issued: May 8, 2000

WO NO.: 60-00-215

FIN: W6352

LAB: SNL

NOT MAKE ANY CHANGES TO THIS PACKAGE!

All changes must be coordinated with Marianne Riggs, 415-5822, or Veronica Blackstock, 415-5823.

FROM: Veronica Blackstock  
Room No. T-10-D12  
Phone No. 415-5823

## Distribution:

Subj  
Wylbur/FFS  
JMitchell  
MFarr

OFF: PMG:PMPDAS	EMG:PMPDAS	DRAA	DRAA	DRAA	EMG:PMPDAS
NAME: Blackstock	Monaco	Mitchell/Trottier	Farr	King	Price
DATE: 5/ 5/00	5/8/00	5/8/00	5/8/00	5/8/00	5/8/00

T-21

NRC FORM 173

(6-1998)

NRCMD 11.7

U.S. NUCLEAR REGULATORY COMMISSION



## STANDARD ORDER FOR DOE WORK (SOEW)

ORDER NUMBER

60-00-215

DATE OF ISSUANCE

May 8, 2000

This agreement is entered into pursuant to the authority of the Energy Reorganization Act of 1974, as amended (42 U.S.C. 5801 et seq.). This work will be performed in accordance with NRC Management Directive 11.7. The parties agree that CICA does not apply to this transaction.

ISSUED TO: (DOE Office)

Mr. L. Douglas Rigdon, Director  
Laboratory Programs Division  
U. S. Department of Energy  
P. O. Box 5400  
Albuquerque, NM 87185-5400  
Attn: Don Chavez  
RDTD/RPB

ISSUED BY: (NRC Office)

Thomas L. King, Director,  
Division of Risk Analysis & Applications  
Office of Nuclear Regulatory Research  
RES Proj. Mgr.: Jocelyn Mitchell

## ACCOUNTING CITATION

APPROPRIATION SYMBOL  
31X0200.060

B&R NUMBER  
06015110120

JOB CODE NUMBER  
W6352

BOC CODE  
253D

## PROJECT PERFORM. PERIOD

BEGIN:  
7/1/1994

END:  
11/30/2000

## THIS FY FUNDING PERIOD

FROM:  
2/14/2000

TO:  
11/30/2000

PERFORMING ORGANIZATION:

Sandia National Laboratories

JOB CODE TITLE:

PROBABILISTIC CONSEQUENCE MODEL  
METHODS DEVEL

DISTRIBUTION OF OUTGOING (NRC SIGNED):

Attn: J. J. Gregory, Lab PI  
Attn: Barbara Hawkins, SNL

DISTRIBUTION OF INCOMING (DOE SIGNED):

Orig - NRC/OCFO (Attn: Mary Givvines)  
3 Copies - NRC/RES (Marianne Riggs)

## OBLIGATION AVAILABILITY PROVIDED BY:

A. THIS ORDER

\$0.00

B. TOTAL OF ORDERS PLACED PRIOR TO THIS ORDER WITH THE PERFORMING ORGANIZATION UNDER THIS JOB CODE FOR THIS FISCAL YEAR.

\$120,000.00

C. TOTAL ORDERS TO DATE FOR THIS JOB CODE FOR THIS FISCAL YEAR.

(TOTAL A &amp; B)

\$120,000.00

STANDARD TERMS AND CONDITIONS ARE PART OF THIS ORDER UNLESS OTHERWISE NOTED (See NRC Management Directive 11.7).

## ATTACHMENTS

THE FOLLOWING ATTACHMENTS ARE HEREBY MADE A PART OF THIS ORDER:

- ☐ STATEMENT OF WORK  
☐ ADDITIONAL TERMS AND CONDITIONS  
☒ OTHER (Specify)  
Modification and Urgency Statement

## SECURITY

- ☐ WORK ON THIS ORDER INVOLVES CLASSIFIED INFORMATION.  
NRC FORM 187 IS ATTACHED.
- ☐ WORK ON THIS ORDER INVOLVES SENSITIVE UNCLASSIFIED,  
UNCLASSIFIED SAFEGUARDS INFORMATION, OR UNESCORTED  
ACCESS TO PROTECTED AND VITAL AREAS OF NUCLEAR POWER  
PLANTS. NRC FORM 187 IS ATTACHED.
- ☒ WORK ON THIS ORDER IS UNCLASSIFIED AND NOT SENSITIVE.

FEE BILLABLE UNDER 10 CFR PART 170 ☐ YES ☒ NO

REMARKS: (At a minimum, reference the approved proposal (NRC Form 189) by number and date, and indicate if the attached statement of work modifies the DOE proposal):

REF: SOEW 60-00-147, dated 2/11/00 and 189 dated July 8, 1999.

The 189 is modified to reflect the addition of Task 7 to provide consultation and assistance in applying the MACCS code to evaluate the radiological consequences from reactor accidents and accidents involving spent fuel (see attached). The Urgency Statement is attached. The original and four copies of the revised 189 should be sent to the NRC/RES (ATTN: Marianne Riggs, T-10-D5) within 30 days.

## CERTIFICATION OF FUNDS

This certifies that funds in the amount cited in Block A are available in the current FY 2000 allotment for work authorized by this SOEW.

FUNDS CERTIFYING OFFICIAL (Typed Name)

Norma M. Price

SIGNATURE

DATE

5/8/00

## SIGNATURES

ISSUING AUTHORITY (Typed Name and Title)

Thomas L. King, Director, Division of Risk Analysis &amp; Applications

SIGNATURE

DATE

5/8/00

ACCEPTING ORGANIZATION (Typed Name and Title)

SIGNATURE

DATE

OFFICE OF NUCLEAR REGULATORY RESEARCH  
DIVISION OF RISK ANALYSIS AND APPLICATIONS

MODIFICATION TO THE FORM 189 FOR JOB CODE W6352

GENERAL INFORMATION

TITLE: Probabilistic Consequence Model Methods Development    JOB CODE: W6352  
CONTRACTOR: SNL  
SITE: Albuquerque  
STATE: New Mexico

NRC PROJECT MANAGER: Jocelyn Mitchell (301)415-5289

PRINCIPAL INVESTIGATOR: Julie Gregory (505)844-7539

BUDGET ACTIVITY: 06015110120

WORK PERIOD: May 8, 2000 to May 31, 2000

The following change is proposed to the SNL Form 189 dated July 8, 1999:

Add the following task:

Task 7 -- Consequence Assessment Consultation and Assistance

The contractor will assist the NRC in the area of consequence assessment, as directed by the NRC project manager or other NRC personnel as requested by the NRC project manager. This task includes consultation and assistance in applying the MACCS code to evaluate the radiological consequences from reactor accidents and accidents involving spent fuel. This effort is to provide consultation and assistance within the constraints of the resources allocated.

Specific work to be performed under this task includes evaluating the effect of additional plume spreading on the radiological consequences of spent fuel pool accidents. The evaluation should include cases with and without early evacuation. The NRC will provide the MACCS input files to be used as the starting point for the evaluation. The contractor should revise the input files or code as necessary to simulate the plume spreading results of the expert elicitation which is documented in report NUREG/CR-6244. The Latin hypercube sampling capabilities developed for Task 5 should be used. Then, the contractor should run the revised input files or code to evaluate the effect of the additional plume spreading on the radiological consequences of spent fuel pool accidents. The results of the evaluation should be documented in a letter report by May 23, 2000. Additional analyses and reports will be specified by the NRC as needed.

Estimated level of effort:     1 staff-month

Estimated completion date:   May 31, 2000

## URGENCY STATEMENT

JOB CODE: W6352

TITLE: Probabilistic Consequence Model Methods Development

DOE LABORATORY: SANDIA NATIONAL LABORATORIES

SNL has developed and applied the MELCOR Accident Consequence Code System (MACCS) for evaluating consequences of operating reactor accidents and accidents involving spent fuel. The NRC has recently performed in-house calculations with MACCS to assess the radiological consequences of spent fuel pool accidents as part of the NRC effort to develop a rule for decommissioning reactors. The ACRS raised a number of technical issues with the rulemaking including the plume modeling in MACCS and suggested that the rulemaking be placed on hold until these issues are addressed. NRC in-house resources are committed to other high priority work. Further, the staff does not have in-house the codes that allow Latin hypercube sampling of uncertain parameters and post-processing of the results. Therefore, the subject modification (for SNL to address the issue of plume modeling in MACCS and its effect on offsite consequences) is urgently needed to help avoid schedule slippage of the ongoing rulemaking effort for decommissioning reactors.

Jocelyn Mitchell 5/5/00  
Jocelyn Mitchell

Michelle R. Trotter 5/5/00  
for Cheryl Trotter

Farouk Eltawila 5/5/00  
Farouk Eltawila

Thomas King 5/5/00  
Thomas King