MEETING SUMMARY
KICKOFF MEETING FOR TECHNOLOGY TRANSFER TASK
BENCHMARKING OF COMPUTER CODES AND LICENSING
ASSISTANCE CONTRACT   NRC-02-81-026 (FIN B6985)

On Wednesday, October 2, 1985 at 2:00 p.m. the "kickoff" meeting for the
Technology Transfer Task, Optional Task 6 of Contract 02-81-026, Benchmarking
of Computer Codes and Licensing Assistance, was held in the 7th floor
conference room of the Willste Building, Silver Spring, MD.

A list of attendees is in Enclosure 1.

The presentation outlined in the enclosed viewgraphs (Enclosure 2) was given by
Douglas Vogt of CorSTAR Research, Inc., the Project Manager.

The major purpose of the meeting was to determine the order of transfer of
codes (i.e., computer code on magnetic tape, an annotated user's manual, and
facility-specific instructions) and what computer facility on which to install
the codes.

The discussion on the choice of a computer facility for the host machine arose
because the previously used CDC computers are being removed from service at
Brookhaven National Laboratory. Alternatives available to the NRC which were
discussed include:

   1. Put all codes on one computer system now at government computer
       facilities available to the NRC.

   2. Install each code on one of several available government computer
       facilities, with the choice of facility dependent on the code.

   3. Use existing or projected inhouse computer systems consisting of
       minicomputers, or IBM PC's or a combination of both.

Option 1 was not selected because of the potential difficulty of doing
machine-to-machine conversion for certain codes. Also, concern was expressed
that if all the codes were placed at any one facility, the entire suite of
codes would be affected if the selected facility were to decide to change its
computers.

Option 3, while desirable, was not selected because there is an ongoing Office
of Resource Management study to determine feasibility of this option.
Principal desirable features include: (a) proximity of machine to users which
allows rapid turnaround, and (b) control of availability of machines by users
group as opposed to situation in national laboratories.

Option 2 was selected because it will allow the NRC to have access to these
computer programs in time for pre-licensing reviews, e.g., SCP reviews in
spring of 1986, and it represents minimal conversion effort.

Other information useful to the NRC during technology transfer includes:

1. Complete identification of the version of the code being transferred.

2. Notation as to whether more recent versions of the code are available.

3. Identification of the potential for converting codes for use on specific computers, other than those listed in Table 2. This assessment will be based on inspection, rather than actual attempts to convert codes for use on other computers.

The agreed upon order of computer codes to be transferred to the NRC and the facilities selected for installation are shown in Table 1. Should the NRC desire a change in the indicated order, CorSTAR should be advised at least three months before the scheduled date of transfer. For future reference, Table 2 shows the availability of codes by computer type.

CorSTAR will identify the IBM PC resource requirements, including the compiler to be used and will test the 20 solution methods. With CorSTAR guidance, the NRC will test-compile the solution methods using the NRC FORTRAN compiler before final acceptance.

This meeting summary was prepared by Douglas K. Vogt, Project Manager, CorSTAR Research and Pauline Brooks, NRC Project Officer for NRC 02-81-026 on October 2, 1985 and confirmed by telephone on October 7, 1985.

Pauline P. Brooks 10/7/85
Pauline P. Brooks, Project Officer

Table 1
Order of Computer Codes Transfer to NRC

Order	Computer Code	Date of transfer to NRC	Current Facility	Computer
1.	ORIGENIS (trial code)	11/85	ORNL	IBM
2.	USGS3D	1/86	NIH	IBM
3.	FEMWATER	2/86	NIH	IBM
4.	FEMWASTE	3/86	NIH	IBM
5.	PATH 1	4/86	BNL	CDC
6.	ADINA	5/86	BNL	CDC
7.	ADINAT	6/86	BNL	CDC
8.	HEATING	7/86	ORNL	IBM
9.	STEALTH	8/86	INEL	CDC

Table 2
Computer Code Availability by Computer Type

Code	Availability
ORIGEN	IBM, CDC
USGS3D	IBM, CDC, some minicomputers
FEMWATER	IBM, CDC, some minicomputers
FEMWASTE	IBM, CDC, some minicomputers
PATH1	CDC
ADINA	IBM, CDC, DEC VAX
ADINAT	IBM, CDC, DEC VAX
HEATING	IBM, CDC
STEALTH	CDC, possibly IBM and some mini's

ATTENDEES
CorSTAR Tech Transfer
Kickoff Meeting   Oct. 2, 1985

Name	Organization/Phone
Joel Hunt	WMEG / 301-427-4744
Tim McCartin	DRPES/RES 427-4144
John Voglewede	WMEG / 301-427-4275
Tim Johnson	WMEG 427-4088
Richard Codell	WMGT 7-4556
Sher Bahadur	WMEG FTS 427-4495
John Buckley	WMEG FTS-427-4544
DINESH GUPTA	WMEG FTS-427-4742
Seth Coplan	WMRP 427-4728
Atef Elzeftawy	WMRP FTS 427-4675
Steve Smykowski	WMEG FTS 427-4100
Avi Bender	WMRP 427-4483
John Randall	HPES/WMUMB 427-4653
Pauline Brooke	WMRP 427-4780
Doug Vogt	CorSTAR Research, Inc. 415-568-4100

BENCHMARKING OF COMPUTER CODES
AND LICENSING ASSISTANCE

TECHNOLOGY TRANSFER

TECHNOLOGY TRANSFER

- COMPUTER CODES

- BENCHMARK PROCEDURES AND SOLUTIONS

- THE NEED FOR SOFTWARE QA AND BENCHMARKING

CorSTAR

COMPUTER CODES

- **CODE ON MAGNETIC TAPE**

- **ANNOTATED USER'S MANUAL**

- **FACILITY-SPECIFIC INSTRUCTIONS**

COMPUTER CODES TO BE TRANSFERRED

- **CODES, DOCUMENTATION, INSTRUCTIONAL MATERIAL**

  - USGS3D
  - FEMWATER
  - FEMWASTE
  - ORIGEN/S
  - PATH 1
  - HEATING
  - STEALTH
  - ADINA
  - ADINAT

- **CODES - MAGNETIC TAPE ONLY**

  - DOT
  - MATLOC
  - VISCOT
  - COYOTE
  - SALT4
  - PORFLO
  - SWIFT
  - NWFT/DVM

COMPUTER CODES - TRIAL CODE RECOMMENDATION

- TRIAL CODE SELECTION

    - BENCHMARKING SHOULD BE COMPLETE
    - NO MOVE TO NEW COMPUTER

- RECOMMEND ORIGEN

COMPUTER CODES – ORDER OF REMAINING CODES

- BENCHMARKING COMPLETE – MOVE TO NEW COMPUTER REQUIRED

    - USGS3D
    - FEMWATER
    - FEMWASTE
    - PATH1

- RECOMMENDATION – TRANSFER 1 CODE PER MONTH IN ORDER DETERMINED BY NRC

- TRANSFER FIRST CODE JANUARY 1986

COMPUTER CODES - ORDER OF REMAINING CODES

- BENCHMARKING NOT COMPLETE

  - HEATING
  - STEALTH
  - ADINA
  - ADINAT

- RECOMMENDATION - TRANSFER 1 CODE PER MONTH IN ORDER DETERMINED BY NRC

- TRANSFER FIRST CODE MAY 1986

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TECHNOLOGY TRANSFER - BENCHMARK PROCEDURES AND SOLUTIONS

- TRANSFER 20 SOLUTION METHODS TO NRC

    - IBM-PC FLOPPY DISK WITH FORTRAN, BASIC OR LOTUS PROGRAM
    - INSTRUCTIONS FOR USE

- TRANSFER QA PROCEDURES TO NRC

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BENCHMARKING AND SOFTWARE QA

- REPORT DESCRIBING LESSONS LEARNED FROM BENCHMARKING

- REVIEW OF BENCHMARKING AND SOFTWARE QA PROGRAMS BY OTHER FEDERAL AGENCIES AND PRIVATE INDUSTRY

- REVIEW OF CAUSE AND IMPACT OF SELECTED SOFTWARE ERRORS