



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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APR 02 1985

MEMORANDUM FOR:

'85 APR 23 11:19

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Division of Waste Management

John T. Greeves, Acting Chief
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Leo B. Higginbotham, Chief
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Recovery Projects Branch
Division of Waste Management

FROM:

Hubert J. Miller, Chief
Repository Projects Branch
Division of Waste Management

SUBJECT:

TRANSFER OF CODES TO NRC UNDER CORSTAR
BENCHMARKING CONTRACT (FIN B6985)

WM-RES
WM Record File
B6985
CorStar Hvw

WM Project 10, 11, 16
Docket No. _____

PDR ✓
LPDR ✓ (B,N,S)

Distribution:

Brooks
mFliegel
(Return to WM, 623-SS)

John-dickett
for mFliegel
af

Enclosed is a list of the computer codes in the siting, radiological assessment and repository design area that are being tested against repository benchmark problems. As part of the work under the subject contract, CorSTAR is preparing to transfer selected codes to the NRC and it would be helpful to know which codes are of particular interest to your staff.

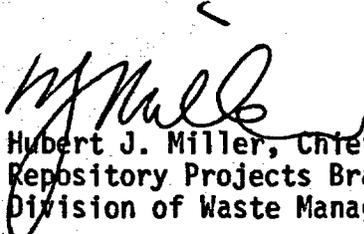
The following information is provided so that your staff may know at which facilities the codes may be accessed after the transfer. The siting codes are on a CDC (Cybernet) and no major problems are foreseen in transferring them to the Brookhaven computer. PATH 1 is at Brookhaven, the version of ORIGEN used is at Oak Ridge and the remainder of the radiological assessment codes were run at NIH.

The repository design codes are being run at Brookhaven with the exception of HEATING 6, which may be accessed through a time-sharing link at Oak Ridge and STEALTH which can be accessed at INEL.

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Please advise us by April 15 as to which of the codes your staff would like to have available for their use.


Hubert J. Miller, Chief
Repository Projects Branch
Division of Waste Management

cc: Tim McCartin

Enclosure:

1. Repository Design
2. Radiological Assessment Codes
3. Siting Codes

Repository Design

ADINA	3-dimensional finite element mechanical analysis
ADINAT	3-dimensional finite element thermal analysis
DOT	2-dimensional finite element thermal analysis
HEATING6	3-dimensional finite difference thermal analysis
MATLOC	2-dimensional finite element mechanical analysis
VISCOT	2-dimensional finite element mechanical analysis
COYOTE	2-dimensional finite element thermal analysis
SALT4	2-dimensional boundary element coupled thermal mechanical analysis of salt repositories
STEALTH	3-dimensional finite difference thermal mechanical - Lagrangian mechanics, implicitly dynamic

Radiological Assessment Codes

ORIGEN/S	Radionuclide buildup and decay at a point in a reactor. Radionuclide inventories and decay heat.
NITAWL/S	Nordheim Integral Treatment - resonance self-shielding
XSDRNPM/S	1-dimensional neutron transport spectrum averaged cross-section generation
COUPLE/S	Cross-section processing and updating converts XSDRNPM output to ORIGEN input
PATH1	Environmental transport of radionuclides developed for repository analyses
DOSHEM	Dose-to-man
BIODOSE	Environmental transport of radionuclides developed for repository analyses
LADTAP	Environmental transport and dose-to-man developed for nuclear power plant analyses
PABLM	Environmental transport and dose-to-man used by DOE for BWIP analyses

Siting Codes

USGS3D	3-dimensional finite difference groundwater flow in saturated media
PORFLO	2-dimensional finite difference coupled groundwater flow, heat, and solute transport in saturated media
SWIFT	3-dimensional finite difference coupled groundwater flow, heat transfer, brine transport, and solute transport in saturated media
NUTRAN	flow path network code for analyses of the repository system
NWFT/DVM	flow path network code for analyses of the repository system
CCC	3-dimensional integrated finite difference coupled groundwater flow, heat and solute transport in saturated media
FEMWATER	2-dimensional finite element flow in partially saturated media
FEMWASTE	2-dimensional finite element solute transport in partially saturated media