

109.9/DG/83/11/28/2

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DEC 2 1983

DISTRIBUTION

WM s/f (3109.9)
WMGT r/f
NMSS r/f
CF
REBROWNING
MBELL
JTGREEVES
HJMILLER
LIGGINBOTHAM
JBUNTING

PJUSTUS
DGOODE & r/f
PDR
BCOOKE
PORNSTEIN

MEMORANDUM FOR: Malcolm R. Knapp, Acting Chief
Geotechnical Branch
Division of Waste Management

FROM: Dan Goode
Geotechnical Branch
Division of Waste Management

SUBJECT: HYDROLOGY SECTION COMPUTER GRAPHIC EQUIPMENT

Many of the activities which the Hydrology Section performs, or will be performing, require the interpretation, review, and evaluation of large amounts of hydrologic and geologic data. Computer graphic terminals, with associated accessories, are the most cost effective tools for rapid data display, and are currently being used by the staff. None of the equipment used by the staff is dedicated to the Geotechnical Branch, hence use is often inconvenient, and occasionally the terminals are not available. In addition, new graphic terminals offer increased resolution, flexibility, computational power, and have capabilities which will be required during site characterization and EA review.

The general capabilities of computer graphic equipment related to our work are outlined below and grouped under "necessary" and "desirable" to develop our capabilities. Tektronix models with these capabilities are listed. In addition, current NRC equipment and accessibility is outlined.

From consideration of the Branch's activities, I believe we need a Tektronix 4114 terminal or comparable system to compliment our access to other plotting and digitizing tools.

"ORIGINAL SIGNED BY"

Dan Goode
Geotechnical Branch
Division of Waste Management

Attachment:
As stated
cc: Hydrology Section
Derek Widmayer

WM Record File
109.9

WM Project 1
Docket No. _____
PDR
LPDR

				Distribution:	
OFC	WMGT	WMGT	WMGT		
NAME	DGoode:dm	BCooke	Pornstein	(Return to WM, 623-SS)	ce
DATE	12/1/83	12/1/83	12/1/83		

GENERAL CAPABILITIES

Necessary

- | | Tektronix Model |
|--|--|
| - high resolution storage tube at least 4k x 4k, B&W | 4014, 4114, 4116 |
| - B&W copies, non-photo electrostatic process permanent copy on white paper (see attached example) | available for all Teks, none at NRC now! |
| - local graphic processing, storage, zoom pan, graphic cursor input (see attached example) | 4100 series
4114, 4113, 4116 |
| - data transfer, use floppy disk to move model output from BNL to MV8000, etc. for pre- & post-processing, graphics etc. | 4100 series |

Desirable

- | | |
|--|--------------------|
| - local programmability
CPM86 micro FORTRAN based for pre + post-processing and, primarily, graphics. Uses firmware plotting subroutines for ultra high speed. Allows program development on local dedicated system. <u>Designed</u> to work with <u>host</u> environment to transfer data etc. | 4100 series option |
| - color plotter (not terminal) | HP7220 or Tek |
| - digitizer
spatial data input, model grids, parameters, observed values, maps, etc. | |

CURRENT NRC EQUIPMENTWillste

Model	User	Capabilities	Access
Tek 4014	Idegaarden NMSS SS-314 Fuel Cycle	Storage tube 4k x 4k "dumb" terminal w/photo copier	we can use, but its often busy
Tek 4014	Research 12th flr.	"	also available on first come basis
Tek 4054	Quinn, NMSS Reactor? 746	Raster Tube 4k x 4k resolution micro- computer w/photo copier	no access
Tek 4054	Jones, NMSS Reactor? 771	" w/large digitizer	no access heavily used

Philips

Tek 4114	ADP	Storage tube 4k x 4k + resolution "smart" terminal w/photo copier local storage (500k) and picture manipulation zoom, PAN, graphic input w/cursors etc. 2 floppy disk drives - store pictures, transfer data from system to system, Local graphics	remote but not used heavily
Tek 4114	NRR?	"	no access
Tek 4113	ADP	Raster tube COLOR, other capabilities of 4114 only B&W copies, also has 8 pen plotter attached	remote access