

**Florida  
Power**  
CORPORATION

July 1, 1981  
#3-061-14  
File: 3-0-30

Mr. Darrell G. Eisenhut, Director  
Division of Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555



Subject: Crystal River Unit 3  
Docket No. 50-302  
Operating License No. DPR-72  
NUREG-0737 - Post TMI Requirements  
Item III.A.1.2 - Upgrade Emergency Support Facilities

Dear Mr. Eisenhut:

In response to your February 18, 1981, letter and in accordance with Florida Power Corporation's letters of April 14 and June 1, 1981, we hereby provide as Enclosure 1, the documentation necessary to describe the conceptual design of our proposed Emergency Operation Facility (EOF).

We stated in our earlier correspondence that the site location for the construction of the EOF had not been selected. Since that time, the location has been selected, and its purchase is presently being negotiated. We still anticipate complete construction of the EOF by October 1, 1982.

Should you have any questions concerning the enclosed information, please contact this office.

Very truly yours,

*Jatsy G. Baynard*

Dr. P. Y. Baynard  
Manager  
Nuclear Support Services

Tibbs(EOF)D121-2

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## ENCLOSURE 1

### EMERGENCY OPERATIONS FACILITY

The following information is provided in nine sections numbered 1 through 9 to correspond to sections 4.1 through 4.9 of NUREG 0696 - Functional Criteria for Emergency Response Facilities.

#### 1. FUNCTIONS

The facility described in Section 2 of this enclosure, will be utilized as a training facility during normal operations and as an emergency operations facility (EOF) during simulated or actual emergencies at Crystal River Unit 3. Table 1, "Usage of Emergency Operations Facility" shows the conversion of each classroom and office between normal operations and emergency operations. Normal operations conducted at the EOF will not degrade its activation, operation, nor reliability should any emergency situation occur.

Normal industrial security will be provided at the EOF during normal operations. This will ensure its activation readiness for an emergency by the exclusion of unauthorized persons. In addition, the security will be upgraded after the EOF is activated to restrict access to those personnel assigned to this facility. News media briefings, conducted at the EOF, shall be outside of the controlled access area in the auditorium.

When the EOF is activated, it will be staffed by Florida Power Corporation, Federal, State, County, and other emergency personnel designated by the Emergency Plan. The functions and responsibilities of the EOF staff are described in our implementing procedures as submitted to you by letter dated February 27, 1981. The staffing and activation criteria for the existing EOF is also identified in those procedures and is not expected to change upon completion of the proposed EOF. The procedures also describe the location of the existing EOF.

Instrumentation provided in the EOF for the acquisition, display and evaluation of all radiological, meteorological and plant system data pertinent to determine offsite protective measures, to evaluate the magnitude and effects of actual or potential radioactive releases from the plant, and to determine offsite dose projections are discussed in sections 5, 7 and 8 of this enclosure.

TABLE 1  
USAGE OF EMERGENCY OPERATIONS FACILITY

	<u>For Training During Normal Operations</u>			<u>For Us During Emergency Conditions</u>
Classrooms	3-10 Man -	16 X 24	1152	2-NRC 1-B&W
	1-15 Man -	20 X 32	640	FPC Use - Access to Recall
	2-20 Man -	24 X 32	1536	Conference/Status Room
Offices	4-2 Man -	10 X 16	640	State/Marion/Citrus/Levy
	3-2 Man -	12 X 14	504	DHRS/FEMA/INPO
	3-1 Man -	10 X 12	360	ANI/2 FPC
	1-EOF Dir/Storage	12 X 16	192	Sole Use For EOF Director
	1 Comm/Radio	10 X 16	160	Sole Use For Emer. Comm.
	1 Clerks/records	16 X 36	576	Records needs
	1-1 Man	12 X 16	192	NSAC
	Xerox	12 X 16	192	Duplication Needs - Press
	Library	12 X 32	384	Reference Area - FSAR Etc.
	Storage	10 X 48	480	Storage For Equipment
	Break Area	16 X 48	768	Break Area
	1- Restroom	11 X 28	308	Restroom
	1- Restroom	11 X 25	275	Restroom
	Dose asses.	12 X 16	192	Dose Assesment Use Only
	Recall	10 X 16	160	Recall Needs
	Reception Area	8 X 12	96	Provide Security Access
	Custodial	8 X 16	128	Custodial
	Equip. Room	16 X 24	384	Repair & Maint. of Equip.
	Communication	16 X 20	320	Repair & Maint. of Comm.
	Auditorium	48 X 60	2880	Press Area
	Lobby	20 X 24	480	Lobby
	Supplies	8 X 12	96	Supplies
	Total		13,095	
	Halls 20%		<u>2,619</u>	
	Total		15,714	

Abbreviations: State - State of Florida, Bureau of Disaster Preparedness  
 DHRS - State of Florida, Dept. of Health & Rehabilitative Services  
 Marion - Marion County  
 Citrus - Citrus County  
 Levy - Levy County  
 NSAC - Nuclear Safety Analysis Center  
 INPO - Institute of Nuclear Power Operations  
 FEMA - Federal Emergency Management Agency  
 B&W - Babcock & Wilcox

2. LOCATION, STRUCTURE & HABITABILITY

The proposed location of the EOF is greater than 10 miles and less than 20 miles from the Crystal River Unit 3 Nuclear Power Plant. The site is located in a southeasterly direction from the plant and is readily accessible to the main highway (U.S. 19) and the Crystal River Airport.

The structure will be designed in accordance with local building codes and will meet or exceed the 100 year flood requirements and 100 year wind forces.

3. STAFFING AND TRAINING

The EOF will be staffed, as previously identified in our emergency plan and implementing procedures, to provide the overall management of license resources for the continuous evaluation and coordination of licensee activities during and recovery from an incident.

The minimum staffing requirements and response time for the EOF were provided in EM-100 Table 6.1. Upon activation of the EOF, the EOF Director will be in charge of the Company's activities at this facility.

The EOF staff personnel will take part in a formal training program to assure adequate preparedness to assist in an emergency situation at CR-3. The training programs, as discussed in EM-100 Section 19.0, provides for the indoctrination of FPC employees and offsite organizations to familiarize each individual/organization with their responsibility during an emergency situation. The Nuclear Operations Training Manager is responsible for maintaining appropriate records for emergency preparedness training.

As identified in EM-100 Section 18.0, scheduled drills and exercises as committed to in our FSAR will be held to maintain the proficiency of the EOF staff personnel. These drills and exercises shall be conducted, simulating as closely as possible, actual emergency conditions.

4. SIZE

The conceptual size of the EOF is approximately 16,000 sq. ft. Portions of the EOF will be part of a new training facility for Florida Power Corporation. These areas will be converted to EOF usage when an emergency situation occurs. Rooms are designated for all parties required at the EOF (See Figure 1).

5. RADIOLOGICAL MONITORING

The radiological protection of the EOF personnel will consist of installed monitors or dedicated, portable monitoring equipment in

the EOF. The systems to be utilized at the EOF will ensure adequate radiological protection of EOF personnel.

Since the exact system to be used has not been selected, its functional parameter cannot be provided at this time.

#### 6. COMMUNICATIONS

The EOF will have reliable means for both primary and backup voice communications facilities to the TSC, plant control room, NRC, and State and County emergency operations centers. The following modes of voice communication ensure continued availability of such communications at the EOF.

- . An emergency notification system (red phone) and a health physics network (orange phone) along with three dial telephone lines will be provided in the NRC office space.
- . Commercial Telephone, FPC Microwave System, Local Government Radio (LGR or SSB radio), and an automatic ringdown phone to ensure FPC management communication with the TSC will be provided.
- . Commercial Telephone and FPC Microwave System will ensure FPC management communication with the Control Room.
- . Commercial Telephone, FPC Microwave system and Local Government Radio (LGR or SSB radio) will ensure FPC management communications with State and County operations centers, facilities outside the EOF used to provide supplemental support for EOF evaluations, and can be used to communicate with monitoring teams.

#### 7. INSTRUMENTATION, DATA SYSTEM EQUIPMENT, AND POWER SUPPLIES

The EOF instrumentation described here and in Section 8 has not been purchased. However, it is scheduled to be purchased and installed by October 1, 1982.

This system named "RECALL" consists of commercial quality components and utilizes a distributed processing approach to optimize system flexibility, expandability, and reliability to acquire, store, process, and display plant parameters necessary for personnel to perform their functions during normal and transient operating conditions. The system incorporates a processor to acquire and digitize data once per second and distributes this data to other processors for display in various formats.



The system includes an independent RECALL (flight recorder) function to provide a highly reliable method for analysis of plant conditions preceding an event and for a post-event transient assessment.

The system configuration is shown in Figure 2 (attached). This configuration provides a Data Acquisition Computer which distributes signals to the Data Display Systems in the Control Room, the TSC and the EOF.

The EOF will be able to display data comparable in accuracy and reliability to the corresponding data displayed in the Control Room and the Technical Support Center (TSC). The EOF will be able to display necessary data independently from actions in the Control Room and the TSC, and without degrading and/or interfering with the Control Room, TSC and plant functions.

The RECALL system operates independently from the plant data processor (plant process computer). Therefore, no data is provided to the RECALL system from the plant process computer.

The total EOF data system, including instrumentation and power supplies, is designed to achieve a functional unavailability goal of less than 1% per year. A preliminary analysis by the vendor indicates that a 0.01 unavailability design goal can be met but may require specifying certain surveillance and maintenance procedures in conjunction with optimum replacement parts availability.

The EOF instrumentation and power supplies are designed such that circuit transients or power supply failures and fluctuations shall not cause a loss of any data vital to the EOF function. The EOF electrical equipment load will not degrade the capability of any safety-related power source.

The RECALL information display equipment used in the EOF is not seismically qualified. However, this equipment will meet the EOF data system equipment reliability and performance criteria. This equipment is similar to that located in the TSC and Control Room, and its design will incorporate human-factors engineering with consideration for both operating and maintenance personnel.

The normal power feed to the EOF is from the local distribution system. This feed is connected to a transfer switch at the EOF which is also connected to an Emergency Diesel Generator. Upon loss of normal power sources, the Diesel Generator will start and "pick-up" all EOF loads in approximately 15-20 seconds. This time delay will not effect the EOF Display computer since it has an uninterruptible power supply (UPS) at its input with a 20 minute, battery-backed, "ride through" capability.

## 8. TECHNICAL DATA AND DATA SYSTEM

A ChemRad process computer (HP-1000), located in the TSC, will have the capability to receive, store, process and display information sufficient to perform assessments of the actual and potential on-site and offsite environmental consequences of an emergency condition. A data link will provide this information to the EOF.

A RECALL system data link providing information on the general condition of the plant will also be available for display in the EOF for Florida Power Corporation's management.

The Data Acquisition computer is designed for high speed data acquisition. Input signals, encompassing a full range of voltage, current, and thermocouple inputs, are processed via multiplexers, programmable gain amplifier and A/D converters. Digitalized data is then routed via five RS-232-C compatible ports, hard-wired independently to the TSC data display system and Control Room display systems and via modem to the EOF.

The RECALL (flight recorder) obtains its inputs independently from the plant sensor interface; not the data acquisition computer servicing the balance of the system. The RECALL Recorder System continuously acquires and records plant data and monitors for a defined event once per second. An event is defined as a change in contact state, an analog value passing through a limit value, or a combination of digital or analog values defined by the user. Once an event is recognized, the system will not record over data that has been recorded one hour before the event but will continue to record data after the event until manually stopped or the storage medium is unavailable.

The data is stored on two dual-drive digital cartridge tape recorders. The total storage capacity is approximately 12 hours of plant data (based on 160 analog and 64 digital inputs at one second updates). If no fresh tapes are inserted, the system will automatically protect data for one hour before the event and eleven hours afterwards. By periodic insertion of new tapes, data can be stored continuously. Once an event has occurred, the tapes will sequentially and automatically eject and a Label Printer will eject appropriate labels with tape encoding. The system has an auto restart capability upon loss of power and uses a battery-backed Real Time Clock. Alarm contacts provided include "EVENT DETECTED", "TAPES NEED ATTENTION", "ONE HOUR OF TAPE REMAINING", AND "RECALL STOPPED."

Both the system real-time data acquisition computer and RECALL Recorder System are in a NEMA cabinet which is located next to the plant sensor input termination cabinet.

The EOF Data Display System provides the capability for real-time display and delogging of Recall Recorder System tapes for off-line historical analysis.

The Data Display System includes a computer, software, a recorder, and up to four RS-232C compatible computer peripherals. A "Work Station" concept has been developed such that data is displayed using integrated peripheral devices suitable for detailed diagnostics and includes an alpha-numeric CRT, graphic plotting CRT with hard-copy output and a line printer. The devices can be utilized to display in either real-time or the delogging mode. A typical alpha-numeric CRT display printout is shown in Figure 3, and a typical graphic CRT display is shown in Figure 4.

The CRT displays will provide the ability to:

1. Display or print a parameter's current value in engineering units.
2. Trend a parameter's current value on the CRT or printer.
3. Change the assignment of any parameter to a group of parameters.
4. Display or print the current values of a group of parameters.
5. Display or print pre-defined and formatted displays of parameter data.

#### 9. RECORDS AVAILABILITY AND MANAGEMENT

A hard copy or microfiche of the following plant documents will be maintained at the EOF by the records management system as described in Document Control Procedure DC-101, 102, 103 and 104.

- . CR-3 Standard Technical Specifications
- . Plant Operating Quality Assurance Manual (includes all compliance, surveillance, maintenance, testing, emergency, etc. procedures)
- . Effluent and Waste Disposal Semiannual Report.
- . Florida Power Corporation radiation exposure histories.
- . Manufacturer's Instrumentation Manuals.



- . Blue-line systems flow diagrams.

- . Aerial maps and meteorological concentration overlays.

These documents will be stored at the EOF in a manner to ensure ease of access under emergency conditions.



# Data Acquisition and Display System

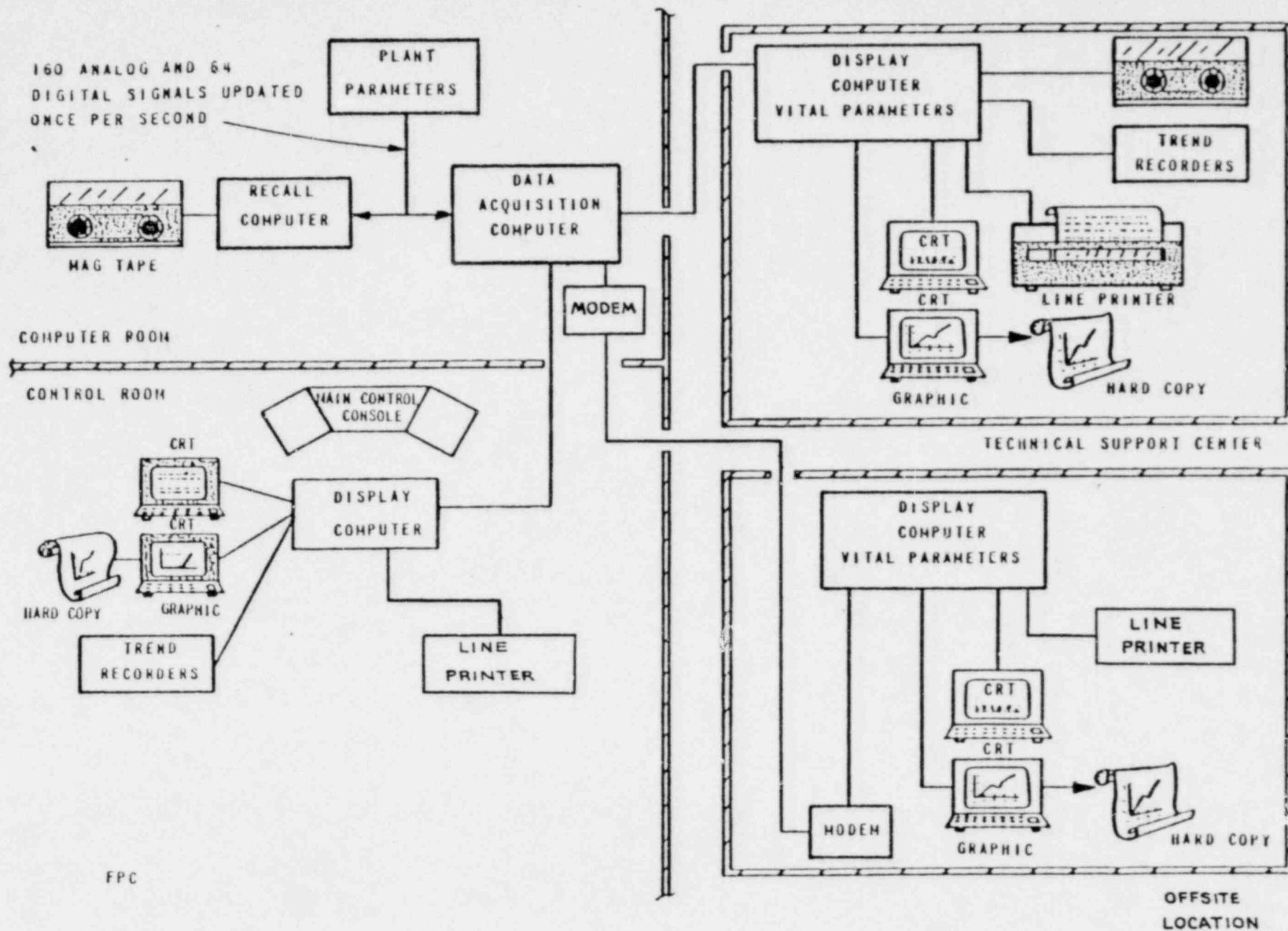


FIGURE -2

DATE 02/04/81

PR BLOCK 1	= GROUP 3	UNIT 1
OTSG B Pr	(PSIG)	456.4
SG B OPR	LVL (IN)	185.8
SG B SU	LVL (IN)	169.4
Tave NR-B	(F)	520.0
Tc NK-B	(F)	520.0
Tc WR-B	(F)	469.4
Th WR-B	(F)	462.4
DMP VLV B	(Z)	.0
RX Power	(Z)	.0

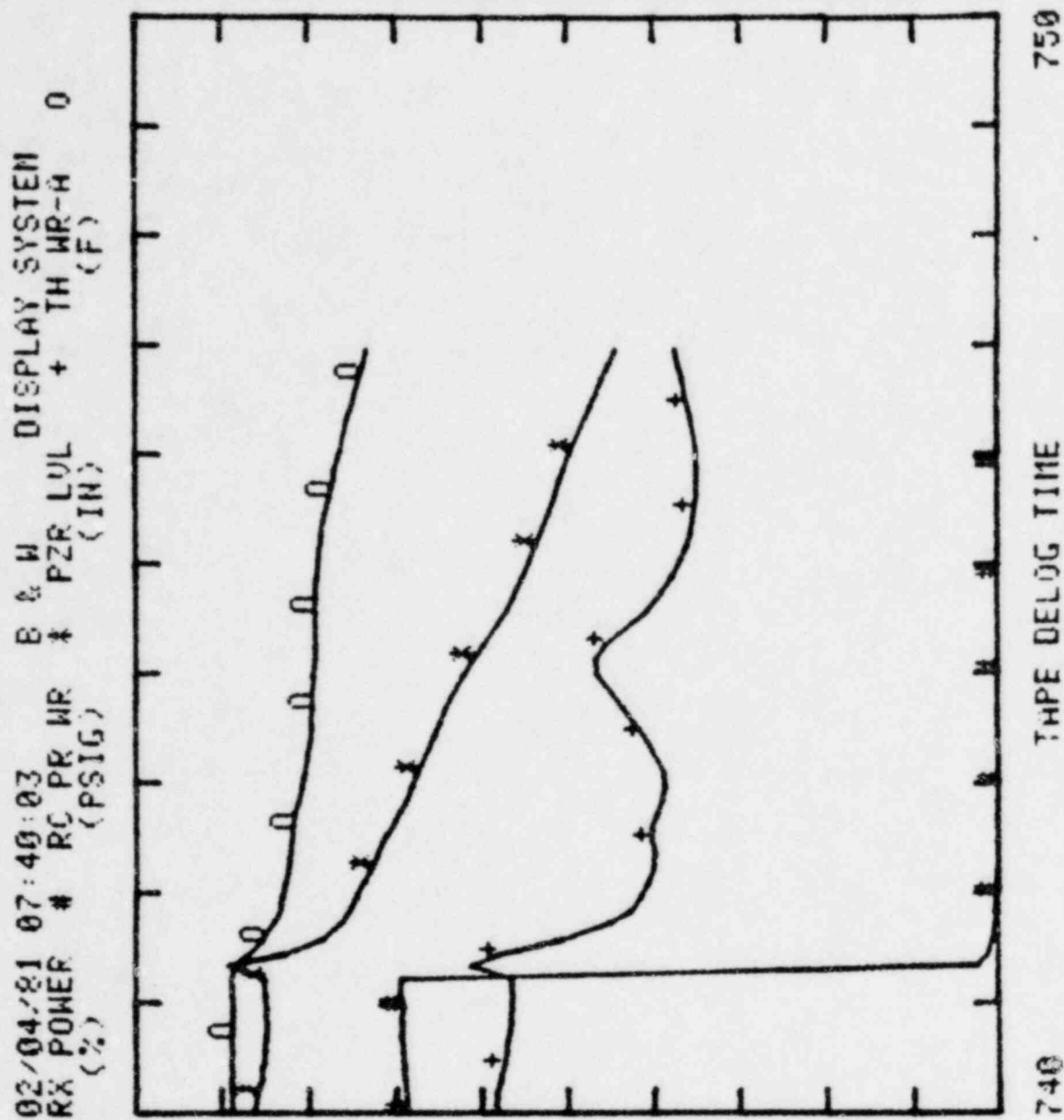
MDM BLOCK 2	= GROUP 5	UNIT 1
RC Pr WR	(PSIG)	1989.1
Pzr Lvl	(IN)	399.0
LTDN Flow	(GPM)	.0
MU Flow	(GPM)	.0
MU TANK	LVL (IN)	61.9
MU TANK	Pr (PSIG)	8.9
HPI Flow	A1 (GPM)	335.3
HPI Flow	A2 (GPM)	289.7
HPI Flow	A3 (GPM)	.0
HPI Flow	A4 (GPM)	.0

TIME 08:03:08

GRPH BLOCK 3	= GROUP 4	UNIT 1
RX Power	(Z)	.0
RC Pr WR	(PSIG)	1989.1
Pzr Lvl	(IN)	399.0
Th WR-A	(F)	462.0
Tc WR-A	(F)	461.6
RC Pr NR	(PSIG)	1991.7
Gen MWe		.0
RC Flow	A&B (Z)	45.2
CTMT PR	(PSIG)	3.6
Tave A&B	(F)	520.0

D/A BLOCK 4	= GROUP 6	UNIT 1
Main FW A	(M <sup>3</sup> /HR)	.04443
Main FW B	(M <sup>3</sup> /HR)	.0
Tfw A&B	(F)	80.6
OTSG A Pr	(PSIG)	454.9
SG A OPR	LVL (IN)	182.0
SG A SU	LVL (IN)	166.2
OTSG B Pr	(PSIG)	456.4
SG B OPR	LVL (IN)	185.8
SG B SU	LVL (IN)	169.4
RX Power	(Z)	.0



# = 125  
 \* = 2500  
 + = 400  
 0 = 650

# = 0  
 \* = 0  
 + = 0  
 0 = 200

FIGURE - 4