

GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057
717 944-7621
TELEX 84-2386
Writer's Direct Dial Number:

April 15, 1983
5211-83-118

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

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
Emergency Response Capabilities
Supplement 1 to NUREG 0737

This letter documents our response to the information requested in Generic Letter 82-33 which is a schedule for implementing the requirements of Supplement 1 to NUREG 0737.

The current licensing status of TMI-1 has dictated the implementation of many of the requirements of the original NUREG 0737 as a condition for restart. GPUN Management has initiated modifications that significantly upgrade the emergency response capability of TMI-1. Since many of the implemented and planned modifications to TMI-1 were initiated prior to Supplement 1, our current endeavors are oriented toward completing these activities. Our schedule for final implementation on page I-3 outlines these activities. We intend to meet the goals of Supplement 1 while concurrently relying on the NRC commitment stated in Generic Letter 82-33 that makes allowances for the work already done in good faith.

Based on restart commitments and our progress demonstrated to date addressing emergency response, we are confident GPU Nuclear can respond quickly and successfully to any emergency situation. We feel this response capability will be further enhanced as our implementation schedule nears completion.

Supplementing the operational and modification program stated above, GPU Nuclear is an active member of the Nuclear Utility Task Action Committee on Emergency Response Capabilities (ERC NUTAC). This group consists of over 40 utilities and is administratively supported by INPO. The NUTAC provides a forum for exchange of ideas and methods to meet the stated goals of Supplement 1.

8304220404 830415
PDR ADOCK 05000289
F PDR

GPU Nuclear Corporation is a subsidiary of the General Public Utilities Corporation

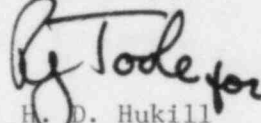
A003

ADD:
W. Paulson

GPU Nuclear is also a member of the B&W Owners Group whose standing committees and task forces are formulating a generic approach for B&W plants on several key phases of emergency response.

The following attachment contains the status, description and proposed schedule of the primary phases identified in Supplement 1.

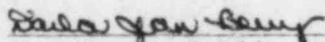
Sincerely,


H. D. Hukill
Director, TMI-1

HDH:PJD:vjf

cc: J. Van Vliet
R. Conte

Sworn and Subscribed
to before me this 15th
day of April, 1983.


Notary Public

DARLA JEAN BERRY, NOTARY PUBLIC
MIDDLETOWN BORO, DAUPHIN COUNTY
MY COMMISSION EXPIRES JUNE 17, 1985
Member, Pennsylvania Association of Notaries

Attachment 1

Status and Schedule for Meeting the Requirements for
Emergency Response Capabilities
- Generic Letter 82-33 -

GPU Nuclear's
Three Mile Island
Unit 1

April 15, 1983

Contents

	<u>Page</u>
I. SPDS	I-1
A. Current Status of SPDS	I-1
B. TMI-1 SPDS Submittal Schedule	I-2
C. Integrated Schedule for Implementation	I-2
II. Detailed Control Room Design Review	II-1
A. Current Status of DCRDR	II-1
B. Submittal of Program Plan and Summary DCRDR Report	II-2
III. Reg. Guide 1.97	III-1
A. Status GPUN Compliance with R.G. 1.97	
B. Schedule for Implementing the Requirements of R.G. 1.97	
C. Meteorological Collection System	III-2
IV. Upgrade of Emergency Operating Procedures	IV-1
A. Status of TMI-1 EOP Upgrade	IV-1
B. Submittal Date for Generic Technical Guidelines	IV-2
C. Submittal Date for Procedure Generation Package	IV-2
D. Date for Implementing EOP's	IV-2
V. Emergency Response Facilities	V-1
A. Projected Completion Date for <u>Fully Functional</u> TSC, and ECF.	V-1
B. TSC Layout Schematic	V-3

I. Safety Parameter Display System (SPDS)

A. Current Status of SPDS

GPUN is designing the SPDS as a subset of the Plant Computer System (PCS). The Unit 1 PCS consists of a state of the art ModComp Classic Minicomputer connected in tandem to the original Plant Bailey 855 Computer System. Aydin color CRT's provide the human communication interface in the control room for the ModComp Classic. Currently, there are about 2500 points in the data base to aid the operator to safely and efficiently operate the power plant. Multi-color video displays and printed reports present this information to the operator with automatic alarming of those plant parameters that exceed preset limits.

One SPDS display currently exists at TMI-1 in the form of a pressure-temperature plot used to evaluate core cooling and heat removal following a reactor trip. This display supports the use of symptom-oriented emergency procedures developed from the ATOG program. Operators and Shift Technical Advisors are taught how to interpret this display by a computer aided instruction course.

Although the Modcomp is powered from ESF electrical buses, a loss of offsite power will result in the interruption of data until the diesel generators assume the load. Planned improvements in redundancy and reliability include:

- ' The replacement of the Bailey with a new ModComp thereby providing two fully compatible and redundant computer systems.
- ' The installation of an uninterruptable power supply for the Modcomp to assure a high degree of reliability on power switching.

Currently GPUN will develop, integrate and implement the SPDS into the PCS as well as into the other initiatives i.e. EOPS, CRDR, RC. 1-97 and ERF.

SPDS safety functions and parameters necessary for full implementation will be defined and a safety evaluation performed at the beginning of the program. An SPDS incorporating the existing data base and computer hardware will be operational at the end of the first refueling outage following restart. Upgrades will be made later to incorporate any additional data points which may be identified during the performance of the safety analysis and to provide improvements in computer hardware redundancy and reliability.

GPUN is currently developing the details and refining the schedules for achieving these major milestones.

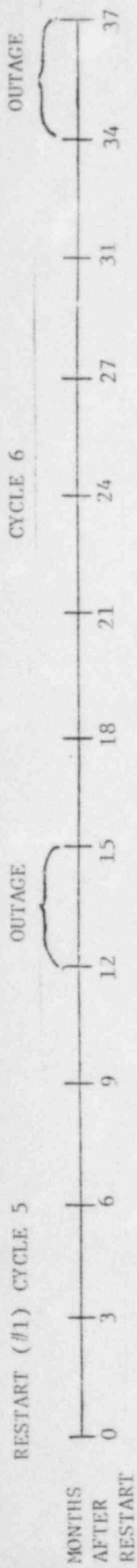
B. TMI-1 SPDS Schedule

- Date for submittal of Safety Analysis to NRC: 4 months after restart
- Date for submittal of SPDS Implementation Plan to NRC: 2 months after acceptance of Safety Analyses by NRC.
- Date when initial SPDS incorporating existing data base and hardware will be operational: Beginning of Cycle 6

Since GPUN has made significant progress in the planning and engineering of the TMI-1 SPDS, we do not request a pre-implementation review by the NRC Staff. However, we do request from the NRC, timely responses to the TMI-1 SPDS Safety Analysis in order to proceed with any final upgrading following initial installation.

C. Integrated Schedule for Implementation

See following diagram (I-3)



Upgrades to basic SPDS installed and operational by end of next refueling outage

Basic SPDS operational with existing data points

IMPLEMENTATION PLAN

SAFETY ANALYSIS

PLANT-SPECIFIC GUIDE-LINES

VERIFICATION/VALIDATION PROGRAM

PROCEDURE GENERATION PKG PROGRAM

EOP'S

PROCEDURE DEVELOPMENT

TRAINING

EOP'S

IMPLEMENTATION

SUMMARY CRDR REPORT

FINAL CRDR REPORT

CRDR

DEFINE TYPE A VARIABLES

RG 1.97 REPORT

IMPLEMENTATION SCHEDULE

DEFINE TYPE B-E VARIABLES

FINAL REPORT

RG 1.97

ERF'S

EOF

TSC

OPERATIONAL

OPERATIONAL

NOTES: ● MILESTONE

TMI-1 Integrated Implementation Schedule

II. Detailed Control Room Design Review (DCRDR)

A. Current Status of DCRDR

In March 1980, GPUN conducted a detailed Control Room Design review of the TMI-1 control room and issued a report in December 1980. GPUN then corrected the identified deficiencies by implementing changes to the control room during 1981 and 1982. In addition to this detailed study, GPUN has integrated human factors review into the GPUN design process. In the future this approach will insure:

- ' The maintenance of present high standards for all future modifications to the control room.

- ' The correct integration of important changes to the control room such as the new process computer interfaces.

- ' The correct integration of functions such as the SPDS.

In parallel with the above activities, the NRC Human Factors Branch conducted a human factors review of the TMI-1 control room in July 1980. As a result of this review, the NRC issued NUREG 0752 in December 1980 describing the review and listing the deficiencies identified by the review teams. GPUN corrected most of the NRC noted deficiencies during its control room modification program as noted above during 1981-82. GPUN will resolve the remaining deficiencies and document these resolutions in the Summary Report of Detailed Control Room Design Review.

The remaining items include:

(Items in parentheses refer to section of NUREG 0752)

- ' Evaluation of alarm system deficiencies (1.0.a)
- ' Standardization of color codes on CRT displays (2.0.a)
- ' Non-locking set point knobs on Bailey Controllers (3.0.b)
- ' Interchangeability of legend switch covers (3.0.d)
- ' Display lamp status for burned out bulbs (3.0.e).
- ' Color standard for labels and mimics (5.0.a)
- ' Labelling and demarcation of remaining HVAC controls (10.0.b&c)

NRC Inspection Report 50-289/82-17 documented the final resolution of the items listed in NUREG 0752.

GPUN also presented the CRDR report as testimony in the ASLE hearing for restart in January 1981. In its review of the hearing record, the ASLE noted that the review and proposed modifications were adequate for restart of TMI-1.

B. Submittal of Program Plan and Summary DCRDR Report

Since GPUN essentially completed the Control Room Design Review in December 1980, the following remaining items need to be addressed:

- ' Resolution of outstanding items identified by NRC review.
- ' Coordination of symptom oriented Emergency Procedure Guidelines with validation and verification in the Control Room.
- ' Comparison of CRDR as completed to NRC requirements and identification of additional work items.
- ' Submittal of a summary DCRDR report that describes the review performed, and the changes scheduled and implemented as a result of the review.

GPUN will submit 2 months after restart a summary Control Room Design Review Report for all completed items required in Generic Letter 82-33. With this submittal, GPUN will include a detailed program plan addressing the remaining incomplete items.

The Final Detailed Control Room Design Review Report on all remaining items identified in Program Plan Submittal will be submitted prior to the end of the first outage after restart.

III. Reg. Guide 1.97

A. Status of GPUN Compliance with R. G. 1.97

GPUN has conducted preliminary studies on instrumentation relative to R. G. 1.97 using the suggested format presented during the NRC ERC Regional Meetings. As a result of this first review and discussion with other B&W Owners, it became evident that an Owner's Group task force to address R. G. 1.97 would be appropriate. Several of the B&W Owners met March 10 and 11 during the ERC NUTAC meeting in Atlanta and formulated a charter and R. G. 1.97 program. The Task Force became official at the March 22 B&W OG Steering Committee meeting and its first working meeting was held on April 4 and 5.

The Task Force members recognize the one element in developing a comprehensive R. G. 1.97 program is the use of Emergency Operating Procedures (EOPs). Because ATOG (The B&W Symptomatic approach to emergency procedures) is a primary Owners Group activity, a generic effort would insure the complete integration of the goals of R. G. 1.97 with the final upgrade of EOP's.

B. Schedule for Implementing the Requirements of Reg. Guide 1.97

The B&W Owner's Group R. G. 1.97 Task Force has adopted a four phase program to address the requirements of R. G. 1.97. They are:

1. Define a set of Class A variables using input from the ATOG and each plant.

Schedule - complete prior to restart.

2. Once the Task Force has established a definition of Type A variables from Phase 1, initiate a plant specific inventory and categorization of instrumentation of Type B through E variables. The Task Force will develop the criteria and format for the categorization during Phase 1.

Schedule - complete during first part of Cycle 5.

3. With the information derived during Phases 1 and 2, prepare a generic R. G. 1.97 Report. This document will contain a plant by plant listing of instrumentation, categorization and areas of non compliance. The key element of this report will provide justification of non-compliance as well as alternatives to compliance for each utility. GPUN will include a proposed schedule for implementation of instrumentation where alternatives or justification of non-compliance are not appropriate.

Schedule - complete prior to end of Cycle 5.

4. Review and resolve comments with the NRC on the completed R. G. 1.97 report and firmly establish a plant-specific schedule of implementation of recommended instrumentation.

Schedule - prior to Cycle 6 startup.

C. Meteorological Collection System

The existing on-site meteorological data collection system has historically provided reliable indication of meteorological parameters necessary for estimating atmospheric transport and diffusion of plant releases. During 1982, the meteorological data availability rate from the on-site meteorological station was greater than 95%.

An agreement with the National Weather Service to provide backup meteorological information from several locations in the vicinity of TMNS further increases the availability of meteorological data and provides a source of regional information.

GPU Nuclear also subscribes to a Weather Information Service which can be accessed via computer terminal and can provide meteorological data instantaneously from local and regional sources.

GPU Nuclear has recently detected a faulty wiring connector at the on-site meteorological station which resulted in two station failures during December of 1982. In order that the facility may continue to operate reliably, the facility's wiring will be renovated during 1983. The wiring renovation will include the replacement of the faulty connector and provide independent source of monitored parameters to each units' control room. We anticipate that these modifications will further enhance system availability rate.

IV. Upgrade of Emergency Operating Procedures (EOP's)

A. Status of TMI-1 EOP's Upgrade

Following the issuance of NUREG -0578 on July 18, 1979, the TMI-2 Subcommittee of the B&W Owners Group met with the NRC and described the Abnormal Transient Operating Guidelines (ATOG) program. A draft set of ATOG guidelines were delivered to the NRC on August 21, 1980. On April 3, 1981, Duke Power docketed the Oconee draft ATOG guidelines. GPUN and other utilities submitted letters indicating that these guidelines should become the base document for NRC review (Generic Guidelines). GPUN first used TMI-1 draft guidelines on the Lynchburg simulator in June, 1981. Training department and operations personnel participated in the evaluation.

As documented in NUREG 0680, 4/17/81, Supplement 3, Table B-1, GPUN is in compliance with the short term Emergency procedure requirements of NUREG 0737 item 1.C.1.1. Concerning the long term Emergency procedure requirements, the NRC has determined in NUREG 0680 that "reasonable progress" is being made on the ICC/transient & analysis (0737 items 1.C.1.2.a & 1.C.3.a), and that the resulting procedures changes (0737 items 1.C.1.2.b & 1.C.1.3.b) will be implemented during the first refueling after 1/1/82. Again, in late 1982 the NRC reviewed our ATOG implementation progress and in this 10/26/82 letter, confirmed that "reasonable progress" was being made.

GPUN also initiated an ATOG Implementation Subcommittee to review ATOG and issued comments on the draft TMI ATOG guidelines. Comment resolution was reached by January 5, 1983, and the TMI-1 plant specific guidelines will be completed in April, 1983.

Various technical improvements identified in ATOG have already been incorporated into the plant procedures. These include:

- ' HPI initiation and throttling based upon subcooling margin and loss of heat sink,
- ' RC pump restart criteria,
- ' OTSG level control at 95% when subcooling is lost,
- ' Improved feedwater control to prevent overcooling,
- ' RCS pressure/temperature limits,
- ' OTSG steaming and isolation requirements during tube rupture events,
- ' Inadequate Core Cooling Criteria.

In addition, the following ATOG recommendations are presently in the process of being implemented:

- ' RC pump trip on loss of subcooling margin,
- ' A symptom-oriented reactor trip procedure and
- ' Additional tube rupture procedure improvements.

Introductory classroom training on the technical guidelines has already been given to the operators. Simulator training on the TMI-1 plant specific guidelines and on tube rupture procedures will be provided in

June, 1983. Additional classroom and simulator training will be provided when plant procedures are developed from the technical guidelines.

B. Submittal Date for Generic Technical Guidelines

Submitted on April 3, 1981 under the Oconee docket. NRC endorsement of symptom oriented approach used in ATOG was given on March 3, 1982.

C. Submittal Date for Procedures Generation Package

The TMI-1 Procedures Generation Package will be submitted to the NRC six months after restart of TMI-1.

D. Date for Implementing EOP's

The EOP's will be implemented at TMI-1 prior to Cycle 6 startup.

V. Emergency Response Facilities

A. Projected completion dates for fully functional Technical Support Center (TSC), Environmental Assessment Control Center (EACC), and Emergency Operations Facility (EOF).

TSC - The existing TSC facility will be modified as indicated below and on the diagram on page V-3. The following will need to be modified:

- Remove the existing TSC enclosure, halon system, and the lighting conduits.
- Provide a new TSC structure
- Make the east wall and the ceiling of the new office space, located on the north side of the existing TSC, removable.
- Provide fluorescent lighting in both rooms.
- Provide louvers and air fan for adequate ventilation.
- Delete the halon system.
- Anchor down the existing five file cabinets to the concrete floor near the west metalclad fire wall.
- Relocate the emergency lighting to its new location, shown in plan.
- Relocate the key box for cooldown keys, shown in plan.
- Relocate the radiation monitor pump to the next room, as shown in plan.
- Provide power for the radiation monitor pump and core the wall for air sampling hoses.

The above modifications shall be seismically designed to satisfy the requirements in Regulatory Guide 1.29. The completion date for the fully operational and permanent TSC will be 6 months after restart.

EOF - Since the existing TMI-1 EOF's do not strictly comply with Option I of Supplement 1, GPU management has decided to pursue an EOF in strict compliance with Option 2. The existing near-site EOF is located in the Training Building approximately 1/2 mile from the site. However, the near site EOF needs significant physical upgrading such as shielding and habitability modifications to meet the requirements of Supplement 1.

Likewise, the far site EOF, located in Reading, is 42 miles from the site. Therefore, an EOF will be established within a 10-20 mile radius of TMI and will serve as the primary offsite facility. Options being considered are to lease, purchase or build a facility. The primary considerations are that (1) the facility should be located at a distance greater than 10 miles from the plant but as close to the 10 mile radius as possible and (2) should be readily accessible to a major thoroughfare.

Once the facility is operational, the existing EOF operations will be shifted to the new location. This structure will fully comply with the requirements of Supplement 1. The construction schedule

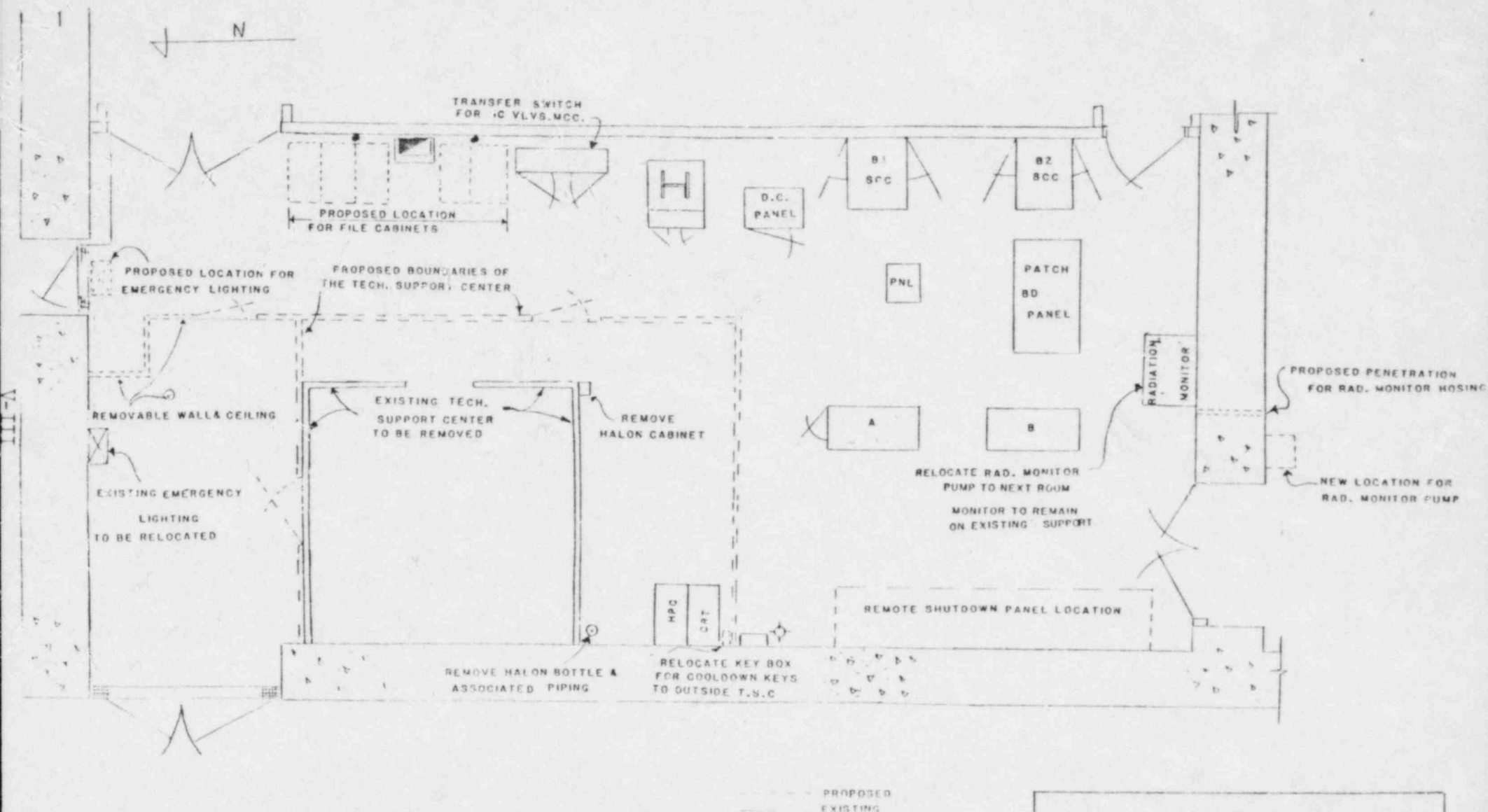
for the new EOF will be provided as soon as it is available (approximately 30 days). However, we expect the facility to be operational in the third quarter of 1983.

It should be noted that via the computer terminals the SPDS R. G. 1.97 information will be available in the TSC and EOF as identified in the integrated implementation schedule.

EACC - The EACC function currently located at the Harrisburg International Airport will relocate to the new EOF facility.

OSC - The OSC will remain in its current location. The OSC satisfies supplement 1 requirements.

Staffing for the above facilities will meet the requirements of Table 2 of the supplement.



TMI-1
 CONTROL BUILDING EL. 322-0
 TECH. SUPPORT CENTER

GPU Nuclear

GPU Nuclear Corporation
P.O. Box 480
Middletown, Pennsylvania 17057

OFFICE OF NUCLEAR REACTOR REGULATION
ATTN: DARRELL G. EISENHUT, DIRECTOR
DIVISION OF LICENSING
U. S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

