RR-Q3-80

THREE MILE ISLAND UNIT 2

RECOVERY QUARTERLY PROGRESS

REPORT FOR THE PERIOD

ENDING SEPTEMBER 30, 1980

THREE MILE ISLAND UNIT 2 RECOVERY REPORT

MetEd / GPU

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APPROVED BY: G.K. Hovey

G.K. Hovey
Director
TMI Unit 2

Prepared for the U.S. Nuclear Regulatory Commission, Director Region 1 Office, King of Prussia, Penna., in accordance with paragraphs 6.9.1.6 and 6.9.1.10 of TMI Unit 2 Technical Specifications.

Submitted to USNRC Region 1, October 15, 1980

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LIST OF ACRONYMS

ADER ..... Alternate Decay Heat Removal System
AGNS ..... Allied-General Nuclear Services
ALARA ..... As Low As Reasonably Achievable
ANI ..... American Nuclear Insurers
ANSI ..... American National Standards Institute, Inc.

BAMT ..... Boric Acid Mix Tank
BOP ..... Balance Of Plant
B&R ..... Burns & Roe
B&W ..... Babcock & Wilcox

Ci ..... Curie
μCi/cc ..... Micro Curies per cubic centimeter
Ci/sec ..... Curie per second
μCi/sec ..... Micro Curies per second
CFM ..... Cubic Feet per Minute
CFR ..... Code of Federal Regulations
cm^2 ..... square centimeter
COT ..... Condensate Storage Tank
CPR ..... Cardiopulmonary Resuscitation
CRAM ..... Computerized Radionuclides Analysis by Mini-computer

DF ..... Epicor II 1st Demineralizer
DOE ..... Department of Energy
dpm ..... disintegrations per minute
DS ..... Epicor II 2nd Demineralizer

ECM ..... Engineering Change Memo
ECP ..... Environmental Control Procedures
EPA ..... Environmental Protection Agency
ETS ..... Environmental Technical Specifications

FHB ..... Fuel Handling Building
ft^3 ..... Cubic Foot

Ge(Li) ..... Germanium Lithium

HP ..... Health Physics

I&C ..... Instrumentation & Control
I&E ..... Inspection and Enforcement
IWSF ..... Interim Waste Staging Facility

Kr-85 ..... Krypton 85
Kr-85/wk ..... Krypton 85 per week
KV ..... Kilo Volts
KW ..... Kilo Watts

LER ..... Licensee Event Report
LSA ..... Low Specific Activity

Man-Rem ..... Unit of Dosage
MDHRS ..... Mini-Decay Heat Removal System
Millirads ..... A Thousandth of a Rad
Millirem/hr ..... Millirem per hour
MPC ..... Maximum Permissible Concentration
mrem ..... Millirem
mrem/hr ..... Millirem per hour

NaI ..... Sodium Iodide
NNI ..... Non-Nuclear Instrumentation
NRR ..... Nuclear Reactor Regulation
NUREG ..... Nuclear Regulatory Document
NUS ..... Nuclear Utility Services

ORNL ..... Oak Ridge National Laboratory
OSHA ..... Occupational Safety and Health Association
OTSG ..... Once Through Steam Generator

PaDER ..... Pennsylvania Department Environmental Resources
PCR ..... Procedure Change Request
PEIS ..... Programmatic Environmental Impact Statement
PF's ..... Epicor II Pre-Filters
pH ..... measure of acidity/alkaliinity
P&ID ..... Process & Instrumentation Diagrams
PORC ..... Plant Operations Review Committee
psi ..... Pounds per square inch
psig ..... Pounds per square inch gauge

Rad ..... Radiation absorbed dose
Rad/hr ..... Radiation absorbed dose per month
RB ..... Reactor Building
RCP ..... Radiological Control Procedure
RCS ..... Reactor Coolant System
R&D ..... Research & Development
REMP ..... Radiological Environmental Monitoring Program

SDS ..... Submerged Demineralizer System
SFP ..... Spent Fuel Pool
SG-B ..... Steam Generator "B"
^{90}Sr ..... Strontium 90

TER ..... Technical Evaluation Report
TIG ..... Tungsten Inert Gas
TLD ..... Thermoluminescent Dosimeter
TLL ..... Three Mile Island Licensing Letter Log Prefix
TPO/TMI ..... Thermal Power Organization/Three Mile Island

UC&M ..... Unit Control & Maintenance

^{90}Y ..... Yttrium 90

SECTION 1

INTRODUCTION & INTENT

1.1 INTRODUCTION

This presentation is the Third Quarter Report for calendar year 1980, submitted to the USNRC as required by Technical Specifications 6.9.1.10 and 6.9.1.6.

1.2 INTENT

It is the intent of this document to report the activities of TMI-II's Recovery Efforts that occurred during the months of July, August, and September of 1980. This report is a Status of Current Activities.

1.3 SYNOPSIS OF NOTABLE ACHIEVEMENTS

The major purge of krypton-85 from the Reactor Building was completed on July 11, 1980.

Two (2) manned entries were made into the Reactor Building to gather information on conditions within the building.

The Mini-Decay Heat Removal System installation was completed and the system was pre-operationally tested.

There were no radioactively contaminated liquids discharged to the river.

The Recovery Quality Assurance Plan was issued for review.

Processing of the original Auxiliary Building water through EPICOR II was completed.

SECTION 2

ADMINISTRATION

2.1 PROCEDURES

Presently, Three Mile Island's administrative controls program is functioning under the cumbersome AP1001 procedure. During this reporting period, eight procedures have been issued for review and comment, and when approved, will allow the implementation of an improved administrative controls program. Beginning with these eight generic procedures, administration will begin to channel approximately 2,000 procedures through the restructured system. This represents approximately 75% of the work needed to be done to completely revamp such areas as operations, chemistry, maintenance, plant engineering and document control. An estimated two years will be necessary for the transition from the current system.

2.2 CONTRACTS

Contracts were extended for vendors performing the TMI Environmental Controls' Radiological Environmental Monitoring Program (REMP) sample analysis program.

2.3 PERSONNEL

The TMI Environmental Controls' professional staff was brought to full strength with the acquisition of a radiochemist who assumed his duties on August 1, 1980.

2.4 RELATED CORRESPONDENCE

The following reports, revisions, responses and information were submitted during this reporting period to the USNRC:

1. A report of the review of recovery mode surveillance procedures to assure adequacy and implementation of same - July 10, 1980.
2. A revision of the Fire Protection Program reflecting changes in the organization - July 11, 1980.
3. A response to USNRC letter dated June 13, 1980, concerning financial protection - July 14, 1980.
4. The Quarterly Report for the second quarter of 1980 - July 15, 1980.
5. A revised Organization Plan - August 13, 1980.
6. TMI Units I & II Radioactive Effluent Release Report - September 5, 1980.

During this quarter the USNRC forwarded to TMI Unit II, changes No. 1 and 2 of the Recovery Operation Plan; change No. 1 on July 25, 1980, and change No. 2 on July 31, 1980.

2.5 GPU NUCLEAR GROUP

Effective September 15, 1980, the GPU Nuclear Group was formally established and represents one of the most substantial steps taken to date in the establishment of the GPU Nuclear Corporation organization. The TMI Generation Group established in July of 1979 was the initial step in the organizational development necessary to fulfill GPU's objectives.

The intent of establishing the Nuclear Group is to enable those who will be responsible for the management of GPU Nuclear Corporation to function, consistent with legal requirements, as they will function in the GPU Nuclear Corporation.

The GPU Nuclear Group integrates the technical and management resources of Jersey Central, Met-Ed, and GPUSC being applied to nuclear activities.

The objectives of the GPU Nuclear Corporation are to provide a full-time dedicated management for the single purpose of safe and effective operation of all nuclear facilities; provide uniform policies and operational criteria for the operation of the facilities owned by GPU subsidiaries; provide more and better in-house technical support; elevate the stature of the nuclear operations within the GPU System; provide increased opportunities for career development and thus enhance the ability to attract and maintain key personnel, and enable implementation of personnel policies responsive to the specific needs of nuclear power.

2.6 THREE MILE ISLAND UNIT II BUDGET REDUCTION

In view of the USNRC's Programmatic Environmental Impact Statement (PEIS) and its delayed schedule for completion, and the USNRC's reluctance to provide definitive guidance and criteria that is vital for GPUSC to establish firm cleanup plans for TMI-II, GPUSC has initiated a 50% reduction in TMI-II expenditures/activities at this time. Also a major consideration in this decision was the recent action by the Pennsylvania Public Utility Commission to deny the request of Metropolitan Edison Company for emergency rate relief. These factors hamper Metropolitan Edison Company's ability to maintain the current level of efforts on TMI-UNIT II.

This major cut-back will ensure that GPUSC's remaining insurance resources can be more effectively utilized to increase cleanup efforts once the USNRC requirements are clarified.

(For further detail, see Appendix 4, located at the back of this report. Specifically: Letter dated September 12, 1980, from Mr. H. Dieckamp to Chairman J. F. Ahearne of the USNRC.)

SECTION 3

SUMMARY OF RECOVERY ACTIVITIES

3.1 SECTION 4 - REACTOR BUILDING ATMOSPHERE PURGE

Regulatory approval and permission to proceed with the Reactor Building venting was obtained in early June, 1980.

Venting started June 28, 1980 and continued until the morning of July 11, 1980. The vented activity is estimated to range from 38,302 to 50,254 curies of krypton-85 with a median value of 44,132 curies.

Due to offgassing of Kr-85 from the water in the reactor building sump, and from other surfaces, additional purges were made (with regulatory permission) on August 1st, 8th, 14th-15th, 22nd, and on September 19th and 20th, 1980. Releases from these events were less than 60 curies each, except for the purge on August 14th-15th which was less than 84 curies.

Environmental monitoring of the initial venting was performed with substantial instrumentation, with both fixed and mobile sampling. This data will be reported, later in 1980, as required.

3.2 SECTION 5 - INITIAL AND SUBSEQUENT CONTAINMENT BUILDING ENTRIES

Regulatory approval was obtained for the initial entry plans and procedures on July 22, 1980.

The inner airlock door was opened on July 16, 1980 in preparation for entry into the Reactor Building. Radiation measurements were taken just inside the building.

Two men successfully entered the TMI Unit II Reactor Building on July 23, 1980, for a period of 20 minutes. This initial entry was used to take smear samples, photographs, and radiation measurements in a limited portion of the Reactor Building. Exposure to each individual was approximately 220 millirems (whole body) gamma, with no detected beta skin exposure.

The second entry into the Unit II Reactor Building was made August 15, 1980, by four (4) men, who removed numerous samples for analysis, and extended the previous reconnaissance. Maximum dosage received by each was less than 400 millirems (whole body) gamma, with no detected beta skin exposure.

A third entry, scheduled for September 25, 1980, was postponed pending clarification of the Pennsylvania Public Utility Commission (PUC) Order prohibiting expenditure by Metropolitan Edison Company of operating revenues for cleanup and recovery activities not covered by insurance.

Plans are continuing for future entries.

3.3 SECTION 6 - LIQUID WASTE MANAGEMENT/PROCESSING SYSTEMS/SOLIDIFICATION

A process water recycle plan has been drafted. This plan was presented to involved GPUSC people on August 20, 1980.

This plan includes construction of two 500,000 gallon storage tanks, and the interconnecting piping, pumping, and valve system necessary to allow appropriate use of the system for storage and recycling.

Construction status currently shows that tank erection is complete, with 20% of the stainless steel piping installed in the connecting trench, as of September 15, 1980.

EPICOR I has expended thirteen (13) prefilters and twenty-one (21) demineralizer vessels, while processing about 1.25 million gallons of low level contaminated water to date. This includes some Unit II non-accident water.

EPICOR II had processed approximately 501,000 gallons, completing the processing of the original Auxiliary Building accident water by August 12, 1980. This system remains operational, for processing water from decontamination activities.

Submerged Demineralizer System (SDS) is being installed in the Unit II "B" spent fuel pool. Construction was 49% complete on September 30, 1980. Operator training began in August 1980.

Additional activities include resin solidification method studies, and planning for an Evaporator Solidification Facility.

3.4 SECTION 7 - RADIOACTIVE WASTE MANAGEMENT - STORAGE AND TRANSPORTATION

Facilities for safe interim solid waste storage are being constructed to assist in the recovery cleanup program. Needs for facilities are determined by the rate at which the waste will be generated and at which it can be transported to a permanent disposal facility. Construction is complete on Module 'A' and 'B', with most excavation done on 'C', and the preparatory mud mat completed on 'D'. The Interim Waste Staging Facility (IWSF) design criteria has been established.

Packaging of radioactive waste has been improved by use of steel boxes instead of wood, and by better densification of 55 gallon drum loading. Drum clamp rings are being installed more reliably, by using a pre-set electric impact wrench to tighten the lock nuts to a specified torque range.

Transportation related activities includes the expeditious scheduling of the present waste inventory for shipment, and selection of a shipping cask for intermediate level wastes obtained in processing.

3.5 SECTION 8 - DECAY HEAT COOLING SYSTEMS - MDHRS, ADHR, AND SG-B

The Mini-Decay Heat Removal System (MDHRS) installation is nearly complete (98%), and has been pre-operationally tested. It is located at the south end of the Fuel Handling Building, on the 280'6" elevation. Operators have been trained for this system, and a request for a reduction in the Standby Pressure Control (SPC) System pressure, to be compatible with MDHRS design pressure, was approved on July 25, 1980 by the USNRC.

The Alternate Decay Heat Removal (ADHR) System was originally provided as a backup cooling system to the installed plant system, and though partially installed, has never been used. The ADHR system is not now operational due to the return of components to the utilities from which they were borrowed.

Procedures to verify heat loss to ambient capability for reactor decay heat have been prepared.

The Long Term Cooling System "B" Steam Generator (SG-B) for decay heat removal has been in operational readiness for some time, but has not

been used. The "B" steam generator must be filled to use this mode. Fill procedures have been completed.

3.6 SECTION 9 - RADIOLOGICAL ENVIRONMENTAL MONITORING

Environmental samplings of terrestrial media and aquatic biota were completed this quarter, as required by Tech Spec. No deviation from normal radiation backgroumd levels was noted. New TLD's are being qualified for Environmental Monitoring, in accordance with ANSI and Regulatory Guide requirements. Operational procedures for environmental monitoring were revised and updated this quarter. Groundwater monitoring is in effect, with weekly samples being taken from wells drilled for that purpose. Soil and water samples showing slightly elevated tritium levels are being evaluated to reveal the source, and a report will be made later in 1980. The first of several environmental monitors employing remote sensing devices to relay realtime radiation data from several locations, has been received by the Environmental Controls group. Additional monitoring using infrared photography to identify stress areas in local vegetation was completed during September. The City of Lancaster was assisted in operation of the Company-provided sodium iodide radiation detector on Lancaster's water system. Two members of the Environmental Controls staff received training on aerial photography, mapping, and infrared interpretation.

3.7 SECTION 10 - DECONTAMINATION ACTIVITIES/CORE DISASSEMBLY/REMOVAL

Decontamination of open areas in the Auxiliary and Fuel Handling buildings is 91% complete, cubicles are 78% complete, and 80% of the floor drain covers and inlet bells are complete. Other areas have received periodic attention to minimize contamination in support of containment entry.

Preparation for further decontamination includes planning methods to be used, and evaluation of exposures derived from these methods, in order to minimize both individual and total Man-rem exposures. Where specialized equipment is called for, long lead-time procurement items are being identified.

Facilities required for decontamination of the reactor building have been planned, with general arrangement drawings completed. Soil core samples have been taken to provide information for building foundation design.

Reactor disassembly and core removal special tooling and video equipment necessary for remote inspection have had conceptual design completed, and nondestructive test methods are under development to determine condition of the core.

3.8 SECTION 11 - RADIOLOGICAL CONTROLS - MANAGEMENT PLAN AND EFFLUENT RELEASES

Radiological Control section has supported a wide range of activities, including completion of many operations, administrative, and instrument

calibration procedures, dosimetry, and training of Radiological Control Technicians and Health Physics personnel. Section 11 tables show progress on Radiation Control action items, and close compliance with the TMI-II Radiological Control Program Management Plan.

The effluent releases from TMI Unit II show that no radioactively contaminated liquid was released, and that the total airborne releases of krypton-85 amounted to a median value of 44,132 curies for the initial purge and approximately 250 curies total from subsequent purges.

3.9 SECTION 12 - QUALITY ASSURANCE AND QUALITY CONTROL

The Recovery QA Plan (Rev. 0) was issued for review by recipients on September 26, 1980.

A significant development was the production, review and approval of a Modifications/Operations section procedure, which effectively separates QA/QC activities reporting on a Unit I or Unit II basis.

3.10 SECTION 13 - SAFETY & HEALTH, SECURITY AND FIRE PROTECTION

A hazard abatement program has been instituted to identify potential hazards, and to prevent accidents which may be derived from these conditions. First Aid and Cardiopulmonary Resuscitation (CPR) training was provided for 189 people.

Security staffing is now complete, and separate badging for Unit I and for Unit II has been implemented. Operators are being retrained, including Emergency Plan and Security Training. Control Room key lock engineering

Emergency Plan and Security Training. Control Room key lock engineering has been completed. Two procedures, one of which involved Bomb Threats, were submitted for review and approval.

Fire Protection has received much attention; over 200 operators and maintenance personnel, and 20 Air National Guardsmen received TMI related fire training. Engineering activities assured that fire protection was included in Design Criteria for proposed new facilities on site. An NRC audit response was made.

3.11 SECTION 14 - ADDITIONAL SYSTEMS, TASKS, AND CONSTRUCTION FOR RECOVERY EFFORTS

The number of Unit II Met-Ed Plant maintenance personnel was increased and the number of contractor plant maintenance personnel was decreased during this period. A program to support decon activities was put on hold and will be done on a "spot basis" only as needed.

The Nuclear Service River Water Pumps continue to need the ordered parts, but the "B" Waste Gas Compressor, which had needed parts for several months to repair the suction diaphram valves was repaired during this quarter.

Requested approval from the USNRC to disconnect the BOP Diesel Generators and the 13.2 KV Power Supply was received on August 11, 1980, and accordingly this back-up system was disconnected.

The Makeup System for the Reactor Coolant System (RCS) remained operational throughout this quarter.

The Permanent Sample System, although 25% complete in June, is now a deferred item due to financial constraints, and there was no further activity on this system during this quarter.

Permanent isolation of the Reactor Coolant (RC) Sample lines was completed, and portions were capped and flushed.

An on-line oxygen analyzer in the RCS Sample line was engineered and installed during this quarter. On-site analysis will soon be possible for RCS dissolved gases.

The Gamma Spectrometry Counting facility is presently operational and development and evaluation of new counting instrumentation has occurred.

Modification was made to the Computerized Radionuclide Analysis by Mini-Computer (CRAM) to allow proper analysis of doublets appearing in Ge(Li) spectra.

The technique of analyzing air particulate and evaporated liquid samples for $^{90}Sr(^{90}Y)$ by beta spectrometry was improved.

During this third quarter of 1980, approximately 6000 samples were analyzed in support of routine operation, and the lay-out drawings were completed and issued for a proposed Hot Chemistry Lab.

The Auxiliary Building exhaust fan 8B, tore away from its mounting, was damaged, partially repaired and is in need of parts that are on order.

Engineering activity has continued on a "time available" basis to update series 2555 and 3475 drawings, and by the end of this reporting period approximately 25% of the changes were incorporated on approximately one hundred baseline drawings.

Various training programs continued this reporting period for Requalification operators, Auxiliary operators and Replacement operators. Programs included Reactor Theory and various systems operations. Nine Control Room operator trainees are continuing their instruction for qualification and USNRC licenses.

3.12 SECTION 15 - MISCELLANEOUS PROGRAMS - RESEARCH AND DEVELOPMENT

The USNRC'S draft Programmatic Environmental Impact Statement which was made available to the public during this reporting period, is under review.

Research and Development programs are ongoing. Presently, TMI staff is working to support a study on Epicor II waste resins.

3.13 SECTION 16 - GRAPHIC PRESENTATION OF ONGOING RECOVERY EFFORTS

This section shows diagrammatically how construction, tasks, and events have progressed from date of accident through September of 1980.

SECTION 4

PURGE

4.1 USNRC APPROVAL

4.1.1 INITIAL PURGE

The reactor building initial purge proposal was approved by the USNRC on June 12, 1980.

4.1.2 SUBSEQUENT PURGES

On July 24, 1980, the USNRC was advised of plans to make routine reactor building purges (< 72 Ci Kr-85/wk). The USNRC approval was given on July 31, 1980. (The purge on August 14th-15th was executed based on a special approval by the director of Nuclear Reactor Regulation [NRR]).

4.2 TRAINING

4.2.1 INITIAL PURGE - PREVIOUSLY REPORTED

Training for the initial purge of the reactor building was reported in the previous report (para. 10.6.3), summarized as 31 Supervisors and Technicians attending a lecture, and 21 Oral examinations administered in preparation for the question.

4.2.2 SUBSEQUENT PURGES - COMPLETED AS OF AUGUST 1, 1980

The Reactor Building Purge System training for subsequent purges was completed as of August 1, 1980.

4.3 PURGE OF THE REACTOR BUILDING ATMOSPHERE

4.3.1 INITIAL PURGE

The purge of the reactor building atmosphere which began on June 28, 1980, was completed at 9:33 A.M., July 11, 1980.

4.3.2 STACK PARTICULATE SAMPLING

The fifteen minute stack particulate sampling continued as the particulate detection method until 11:00 A.M., July 3, 1980. At that time, an on-line NaI crystal/multichannel analyzer, which was tested and evaluated for three days and then approved by the NRC was placed into operation. The stack particulate sampling frequency was reduced to once per day. The NaI detection system operated satisfactorily throughout the remainder of the purge with the exception of one three-hour period in which failure of an analyzer module required a temporary shutdown of the detector. During shutdown of the real-time detection system, fifteen minute particulate sampling was reinstituted.

4.3.3 PURGE PARAMETERS

Maximum flow rate reached using the hydrogen control system was 560 CFM. Maximum flow rate reached using the reactor building purge system was 18,500 CFM. The shift to the reactor building purge system (high flow rate system) was made at 12:24 P.M., July 8, 1980. The total volume purged was about 32,700,000 cubic feet. The actual time spent purging was 246 hours, 22 minutes. The calculated, potential, maximum whole body and skin doses off site, were 0.044 mrem and 4.34 mrem, respectively.

4.3.4 SUBSEQUENT PURGES

Subsequent to completion of the purge, krypton concentration in the reactor building increased due to off-gassing of the water and other surfaces. This residual krypton was initially being vented in several increments on approximately a weekly basis, and now on approximately a monthly basis.

Additional purges were made August 1st, 8th, 14th, 15th, and 22nd, and on September 19th and 20th, 1980. Releases for each event were less than 60 curies KR85, except for August 14th and 15th which were less than 84 curies. The purge on September 20th was only for seven (7) minutes to re-establish a negative pressure in the building.

4.4 ADDITIONAL SAMPLING, MEASUREMENT AND MONITORING

4.4.1 KRYPTON-85 MEASUREMENT

During the course of the purge, the krypton release rate (stack concentration times stack flow rate) was consistently lower than the expected release rate which was based on purge system flow and measured reactor building atmosphere krypton concentration. Numerous grab samples were taken from the stack monitor inlet, stack discharge, and different elevations inside the reactor building to try to determine the cause of the apparent measurement error. A stack flow transverse and a radiation profile were also performed.

Following the Reactor Building Purge, a study was initiated to account for the discrepancy between the estimated initial Reacotr Building krypton-85 activity of 57,000 curies and the total vented

activity of 34,414 curies measured by the continuous monitoring of the plant stack during the purge.

The variables used to calculate the initial Reactor Building krypton-85 activity were:

- initial Reactor Building krypton-85 concentration
- Reactor Building free volume

The variable used to calculate the total vented activity were:

- plant stack gas velocity
- plant stack krypton-85 concentration

The errors associated with these variables were examined to account for the discrepancy.

It was determined that:

- the initial Reactor Building krypton-85 concentration was 0.80 ± 0.02 μCi/cc rather than the assumed 1.0 μCi/cc.
- the Reactor Building free volume is about $1.97 \times 10^6 ft^3$ (essentially equivalent to the assumed volume of two million cubic feet).
- the measured plant stack gas velocity and krypton-85 concentration require multipliers of 1.097 ± 0.035 and 1.169 ± 0.121 respectively to account for systematic errors.

Taking these errors into account, the initial Reactor Building krypton-85 activity is estimated to range from 43,000 to 46,200 curies with a median value of 44,600 curies and the vented activity is estimated to range from 38,302 to 50,254 curies with a median

SECTION 5

ENTRY

5.1 ENTRIES INTO THE REACTOR BUILDING

5.1.1 REQUEST AND APPROVAL

On July 15, 1980, the USNRC was advised of plans and procedures for the initial entry into the reactor building. USNRC approved same on July 22, 1980.

5.1.2 INNER AIRLOCK DOOR

On July 16, 1980, the inner airlock door to the reactor building was successfully opened in preparation for entry into the reactor building. During the door opening, preliminary radiation measurements were taken just inside the building. Gamma radiation levels ranged from 300 mr/hr over the access ramp to 700 mr/hr adjacent to the elevator shaft.

5.1.3 TRAINING

The Reactor Building Re-Entry Team training was completed in July, 1980.

5.1.4 INITIAL ENTRY & FINDINGS

On July 23, 1980, 15 months and 24 days after the March 28, 1979 accident, two (2) men successfully entered the Three Mile Island Unit II reactor building. During the twenty minute stay inside the reactor building the two men were able to take twenty-nine (29) photographs, six (6) one hundred square centimeter smears, perform

a general area beta-gamma survey and remove a five gallon plastic bucket from the reactor building.

A preliminary analysis of the smears taken was performed and the results are included in Table I found immediately following this section. The smear samples, bucket and shoe covers worn by the entry personnel were sent to the Department of Energy in Idaho for analysis.

The general area survey indicated gamma radiation levels of 500 to 700 mr/hr and beta radiation levels of 1 rad/hr.

Each individual received a whole body gamma exposure of approximately 220 mrem with no detected beta skin exposure.

5.1.5 SECOND ENTRY & FINDINGS

A second entry was made into the reactor building on August 15, 1980 by four (4) men.

Two (2) of the men spent twenty-three minutes in the building and the other two (2) men spent thirty-eight minutes in the building. During the stay in the building the entry personnel removed radiation monitor HP-R211, took sixty-seven (67) photographs, twelve (12) one hundred square centimeter surface smears, took two (2) scrape samples of deposits on the grade (305') elevation floor, and removed one (1) twelve inch by sixteen inch painted plate, two pieces of reflective insulation (1C-1B-05 and 1C-2B-02), a carbon steel funnel and a sample of discolored glass from the reactor building.

In addition, two experiments were performed along with the general area survey. The first experiment was performed to determine the amount of loose contamination which could be removed using a cloth swipe and the second experiment measured the beta to gamma ratios at floor level and again at three feet off the floor.

The general area survey on the operating elevation 347' 6" indicated a gamma radiation level of 100 to 200 mr/hr and a beta level of 250 mrad/hr to 1 rad/hr.

The preliminary results of the smear samples are shown on Table II, found immediately following this section. During the entire entry the highest whole body gamma exposure to each entry personnel was less than 400 mrem with no detected beta skin exposure.

5.1.6 THIRD ENTRY POSTPONED

A third entry into the reactor building, scheduled for September 25, 1980, by a five-man entry team was postponed due to the need for clarification of the Pennsylvania Public Utilities Commission (PUC) order. The PUC order prohibited expenditures by Metropolitan Edison Company of operating revenues for cleanup and recovery activities not covered by insurance.

5.2 PLANNING FOR FUTURE ENTRIES

Overall criteria and requirements for future containment entries were developed and documented in the following reports:

1. Summary Plan - Data Acquisition Entries, TPO-/TMI-001
2. Summary Plan - Reactor Building Characterization, TPO/TMI-002

An approved list of tasks was completed covering the acquisition of technical data and recovery of samples from the reactor building. These tasks are to be implemented during future entries made prior to the processing of the sump water and gross decontamination of the reactor building, and involve work to be performed at and above the 305' level. Sampling packages which provide the detailed requirements for surveys and sample collection were completed for the majority of tasks identified in the current task list.

TABLE I
SECTION 5

PRELIMINARY ANALYSIS RESULTS OF SWIPES TAKEN DURING INITIAL REACTOR BUILDING ENTRY OF 23 JULY 1980

ACTIVITY DETECTED (μCi)

Swipe/ Specimen	Sample Number	Swipe Location	Co-60	Nb-95	Sb-125	Cs-134	Cs-137	Ce-144	Gross β γ	Gross α	Remarks
1	46279	Reactor Bldg. Liner next to South Wall of Airlock				3.91E-4	2.25E-3		2.54E-3	<1.75E-7	
2	46280	Painted Portion of North Wall of Elevator				1.51E-3	9.81E-3		6.59E-3	<2.76E-7	
3	46281	Reactor Bldg. Floor at base of the entrance ramp		1.97E-3		5.78E-1	3.48E+0				
4	46282	D-Ring wall opposite entrance ramp		1.56E-5		8.33E-4	4.70E-3		4.78E-3	<1.75E-7	
5	46283	Reactor Bldg. floor between equipment hatch & stairwell				1.98E+0	1.20E+1				Swipe may have been cross-contaminated in airlock
6	46284	D-Ring adjacent to open stairwell	1.92E-5		3.29E-4	2.31E-3	1.60E-2	1.81E-4	1.43E-2	<2.76E-7	Swipe may have been cross-contaminated in airlock
10	46288	Sample recovered from 16 July 1980 inner door opening									Unknown location and area

Note: All activity total. All wipes approximately 100 cm^2 except #10.

TABLE II (Page 1 of 2)
SECTION 5

TMI-2 REACTOR BUILDING PRELIMINARY BETA GAMMA SCAN WIPE/SPECIMENS 15 AUGUST 1980

Swipe/ Specimen	Sample Number	Sample location	Gross α μCi	Gross β μCi	Cs-134 μCi	Cs-137 μCi	Sr-90 μCi	Co-60 μCi	Nb-95 μCi	Cs137/Sr90 Ratio
Floor Scrape A	47846	305' el. floor crud at open stairwell	-	-	8.80-1	5.25				-
Floor Scrape B	47845	305' el. floor crud at hatch cover	-	-	2.654	16.05				-
DF #1	47862	305' el. floor decon test initial wipe	-	-	1.13	6.95	5.3-1			8.85
DF#2	47861	305' el. floor decon test final wipe	-	-	1.18-1	7.15-1	6.98-2			9.37
Wipe #1	47847	305' el. floor under HPR-211	-	-	6.61	40.7	2.63			12.4
Wipe #2	47848	305' el. floor in front of air cooler	-	-	3.75-2	2.22-1	2.94-2		9.26-4	5.78
Wipe #3	47849	Elevator stairwell floor, top landing	-	-	8.16-1	5.10	2.4-1		2.19-3	19.0
Wipe #4	47850	347' el. floor behind elevaror shaft	-	-	8.60-1	5.40	1.6-1		2.44-3	23.8
Wipe #5	47851	Fuel handling bridge	-	-	6.80-1	4.25	4.76-1	9.70-4	2.62-3	8.89
Wipe #6	47852	347' el. liner southwall	$<$4.88-7	1.30-2	2.46-3	1.52-2	2.3-3			5.22
Wipe #7	47853	347' el. liner southwall	$<$4.88-7	9.22-3	2.87-3	1.91-2	1.15-3			7.83
Wipe #8	47854	347; el. floor head stand area	-	-	9.41-1	5.80	1.97-1			29.4
Wipe #9	47855	Cable tray by NE corner of canal	-	-	3.95-2/	2.57-1	5.55-2			4.11
Wipe #10	47856	Not Used								
Wipe #11	47857	Not Used								
Wipe #12	47858	347' el. tool cheat	-	-	2.54-1	1.58	9.00-2			16.7
Wipe #13	47859	347' el. liner - EMT wall	$<$ 5.0-7	5.10-3	1.03-3	9.86-3	6.99-4			5.65
Wipe #14	47860	347' el. [illegible] "D" Ring wall	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]			[illegible]

TABLE II (Page 2 of 2)
SECTION 5

TMI-2 REACTION BUILDING PRELIMINARY BETA GAMMA SCAN WIPE/SPECIMENS 15 AUGUST 1980

Swipe/ Specimen	Sample Number	Sample Location	Gross α μCi	Gross β μCi	Cs-134 μCi	Cs-137 μCi	Sr-90 μCi	Co-60 μCi	Nb-95 μCi	Cs137/Sr90 Ratio
Glass Sample	47870	305' el. floor near equip. hatch			1.73	10.7				-
HPR-211	47910	305' el. elevator shaft wall	3.60-6	1.26-1	1.99-2	1.55-1	3.1-3			52.9
12"x16" steel plate	47911	305' el. east "D" Ring wall	3.06-6	2.27-1	3.64-2	2.19-1	3.98-2			6.28
1C-18-05 Cover	47912	347' el. floor near east "D" Ring	9.01-7	7.65-2	1.06-2	6.40-2/	1.6-2			3.10
1C-28-02	47913	347' el. floor near east "D" Ring	2.00-6	-	3.30-1	1.97	6.1-2			33.8
Funnel	47915	305' el. near floor hatch to 282 el.	<4.66-7	2.34-2	5.09-3	2.92-2	1.6-3			20.4

*Cr51 = 1.08-2; Ce144 = 1.41-2

Note: All activities total. All wipes approximately 100 cm^2.

SECTION 6

LIQUID WASTE MANAGEMENT/PROCESSING SYSTEMS/SOLIDIFICATION

6.1 LIQUID WASTE MANAGEMENT

6.1.1 PROCESS WATER RECYCLE PLAN

A process water recycle plan has been drafted. This plan addresses storage capacity requirements, chemical and radiochemical requirements, and identifies open items for which resolutions are required. A presentation of this alternate plan was presented to involved GPUSC personnel on August 20, 1980.

6.1.1.1 PROCESSED WATER STORAGE TANK (PWST) SYSTEM

The processed water storage tank system includes two (2) 500,000 gallon carbon steel tanks and interconnecting piping between each tank and between the tanks and the waste processing systems (EPICOR II, Submerged Demineralizer System and Evaporator/Solidification System).

The detailed design for the system has continued throughout the quarter.

6.1.1.2 STORAGE & RECYCLE PLAN

This system has been split into two (2) phases for engineering and construction.

PHASE I: This represents the tanks and tie-in from SDS and EPICOR II Systems with associated piping, valves, and instrumentation for transporting processed water to storage tanks PW-T1 and T2.

PHASE II: This represents the pumping/distribution system with associated pumps, piping, valves, and instrumentation for transporting the processed water from the storage tanks to other plant systems such as waste processing (deborating), to be used in the decontamination/recovery program. The Engineering development has continued through this reporting period.

A temporary system for transferring the contents of the processed water storage tanks has been developed to allow the contents of the tanks to be used when Phase I is completed. The engineering package for this system is being prepared.

6.1.1.3 CONSTRUCTION UPDATE

The tank construction was started March 13, 1980, with foundations completed on May 19, 1980, and completion of the tanks on August 13, 1980. The pumphouse slab is complete. Excavation of the trench is complete and stainless steel piping was 20% complete by September 15, 1980.

6.1.2 EPICOR

6.1.2.1 EPICOR PROCESSED WATER DATA

EPICOR I has successfully processed to date approximately 1.25 million gallons of low level contaminated water, including Unit II non-accident water. All water processed at EPICOR I is being released to the environment via the Unit I Waste Evaporator Condensate Storage Tanks. This system has expended thirteen (13) pre-filter assemblies and

twenty-one (21) demineralizer vessels. The control and management of this system is in the process of being transferred to Unit I.

EPICOR II has completed processing the original Auxiliary Building accident water. Total water processed as of August 12, 1980, was approximately 501,000 gallons. The water existing on October 22, 1979, was 377,000 gallons, the additional 124,000 gallons was due to leakage and flushes into the Auxiliary Building sump from various sources. The sources are broken down by volume on Table I, found immediately following this subsection.

System performance for the entire accident water processing is given in the following table:

EPICOR II DATA*

AS OF 8/12/80, APPROXIMATELY 501,000 GALLONS PROCESSED

TOTAL CURIES REMOVED	55,000
TOTAL MAN-REM EXPOSURE	14.938
MAN-mrem/GALLON PROCESSED	0.03
MAN-mrem/CURIE REMOVED	0.27
AVERAGE PROCESSING RATE	1.18 gpm**
(EXCLUDING RECIRC & OUTAGE TIME)	1.66
PRE-FILTERS EXPENDED	49
1st DEMINERALIZERS EXPENDED	14
2nd DEMINERALIZERS EXPENDED	6

* Additional process data is shown in Tables II through IX, found immediately following this subsection.

** This figure is determined by $\frac{\text{Total gals. processed}}{\text{Total time system installed}}$

The rate while the system was processing was approximately 10 gpm.

The EPICOR II system is operational and is used for processing the water from system and tank flushes and other decontamination activities.

A feasibility study has been completed on processing the Reactor Coolant System water through EPICOR II. This study is now undergoing internal review. No action related to RCS processing will be taken without NRC specific concurrence.

6.1.2.2 EPICOR I RELOCATION PLANS

The low level waste processing system included plans for moving EPICOR I from its present location on the Unit I side of the separation fence to a location on the Unit II side into a 30' x 48' building. The detailed engineering for the facility and system was being performed but has currently been placed on hold. Relocation of EPICOR I system, reported as "in planning" in last quarter's report has now been cancelled.

6.1.2.3 TRAINING

During this reporting period, six (6) Auxiliary Operators have been trained on EPICOR II.

6.1.2.4 RELATED CORRESPONDENCE

On July 2, 1980, information was provided to the USNRC related to the condition of EPICOR II spent resin liners. On July 3, 1980, revised plans for Processed Water Management for 1980 and 1981 were submitted to the USNRC.

6.1.3 SUBMERGED DEMINERALIZER SYSTEM (SDS)

The Submerged Demineralizer System (SDS) is being installed in the Unit II "B" Spent Fuel Pool. The system is designed to operate under water, which will provide radiation shielding. The system is composed of two parallel processing trains, a chemistry lab, and a Ge(Li) detector and counting facilities. Construction was 49% complete on September 30, 1980.

6.1.3.1 MISCELLANEOUS ACTIVITIES FOR SDS

1. The final report on the ORNL flow sheet studies was received and is in the review cycle.

2. The results of the AGNS dewatering test were reviewed and a dewatering system design was approved and is now in manufacturing with delivery expected later in 1980.

3. Draft operating and emergency procedures have been submitted to a Met-Ed PORC Sub-Committee for review and comment.

4. The balance of the system installation procedures have been completed and ECM's were written for the installation of all major pieces of hardware.

5. Draft chemistry procedures have been written for all unique SDS chemistry operations and have been submitted to Met-Ed Chemistry personnel for review and comment.

6. An independent third party review of the SDS has been performed by Wachter Associates and the draft report has been received and is being reviewed.

6.1.3.2 TRAINING

An operator training program was developed for the SDS system and has been reviewed and approved by Met-Ed. Initial training sessions began in August 1980.

Fifteen (15) Unit II personnel in the Operator Requalification and Auxiliary Operators training programs received instruction on the SDS.

6.1.3.3 RELATED CORRESPONDENCE

The GPU response to the NRC Round 1 comments on the SDS TER was finalized and forwarded to the NRC.

Additional information on the SDS was forwarded to the USNRC on July 9, 1980, and on August 1, 1980. On July 16, 1980, data on resin irradiation was forwarded to the USNRC. The ORNL Evaluation of the SDS was forwarded to the USNRC on August 22, 1980.

6.1.3.4 SDS CONSTRUCTION STATUS

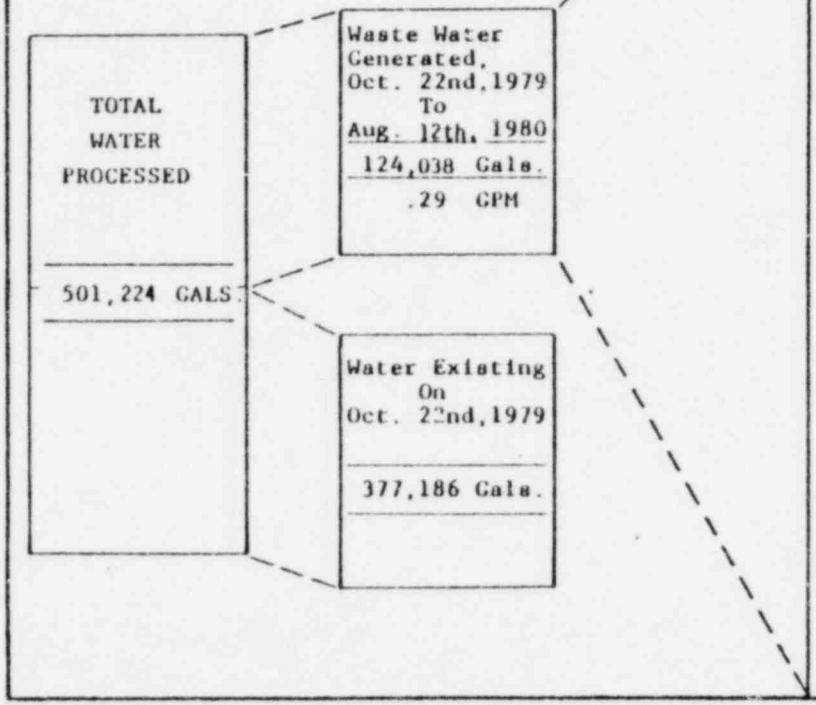
	PERCENT (%) COMPLETE
ELECTRICAL	41%
INSTRUMENTATION	
a. Installation and Power	25%
b. Calibration	10%
MODULE/COMPONENT INSTALLATION	65%
PIPE FITTING AND WELDING	31%
LEAD SHIELDING	70%
HYDROTESTING	5%
OVERALL SYSTEM - As of September 30	49%

EPICOR II RADWASTE SYSTEM

SOURCE OF WATER PROCESSED

October 22nd, 1979 to August 12th, 1980

TABLE I
Section 6



569	Water transferred from R. B. Spray Pump and Decay Heat Sumps
785	Leakage from Make-up System, Make-up Pump "B" Instr. line failure on Feb. 12, 1980
780	Maintenance, drainage of Nuclear Service System on July 25, 1980
1,313	Water transferred from U-2 Make-up Water Tank on May 5, 1980
1,489	Draining of U-2 Cask Pit to Auxiliary Building Sump
2,738	Water transferred from U-2 Contaminated Drain Tanks
3,357	Waste Gas Compressor Seal Water leak
5,243	Mini Decay Heat Removal System, Pump Seal water leak
7,602	Condensed steam, from Tank Farm Steam Educator operation
9,314	CCB Sump, processed water from CCB miscellaneous drains
17,139	Processed water, recycled after use as decontamination medium
34,267	Processed water, used in flushing tanks (Tank Farm, RCBT, "A", "B" & "C")
39,442	Inleakage into Auxiliary Building Sump (Misc. sources, Net .09 GPM)

TABLE II
Section 6

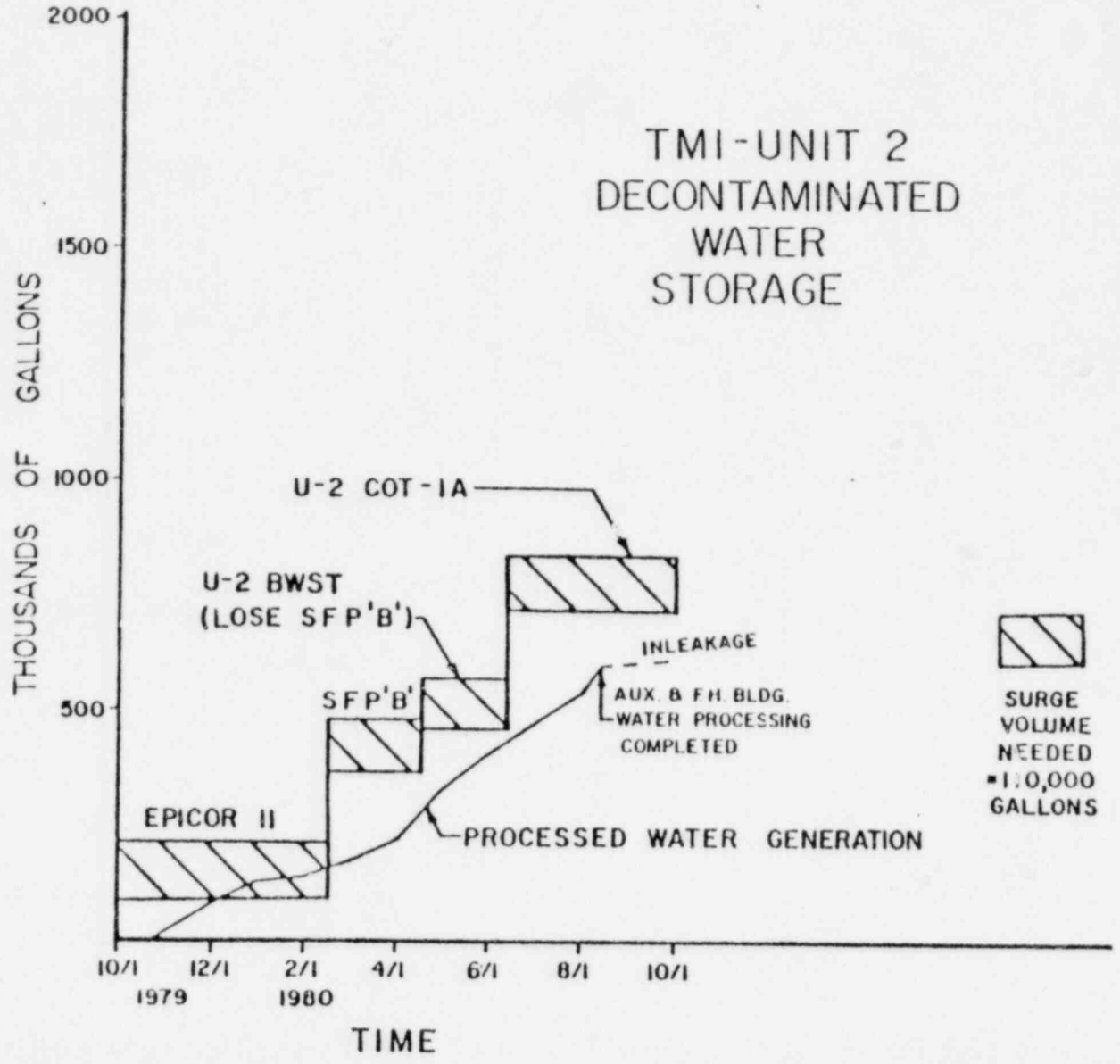


TABLE III
SECTION 6

EPICOR II RADWASTE SYSTEM
GALLONS THROUGH LINERS

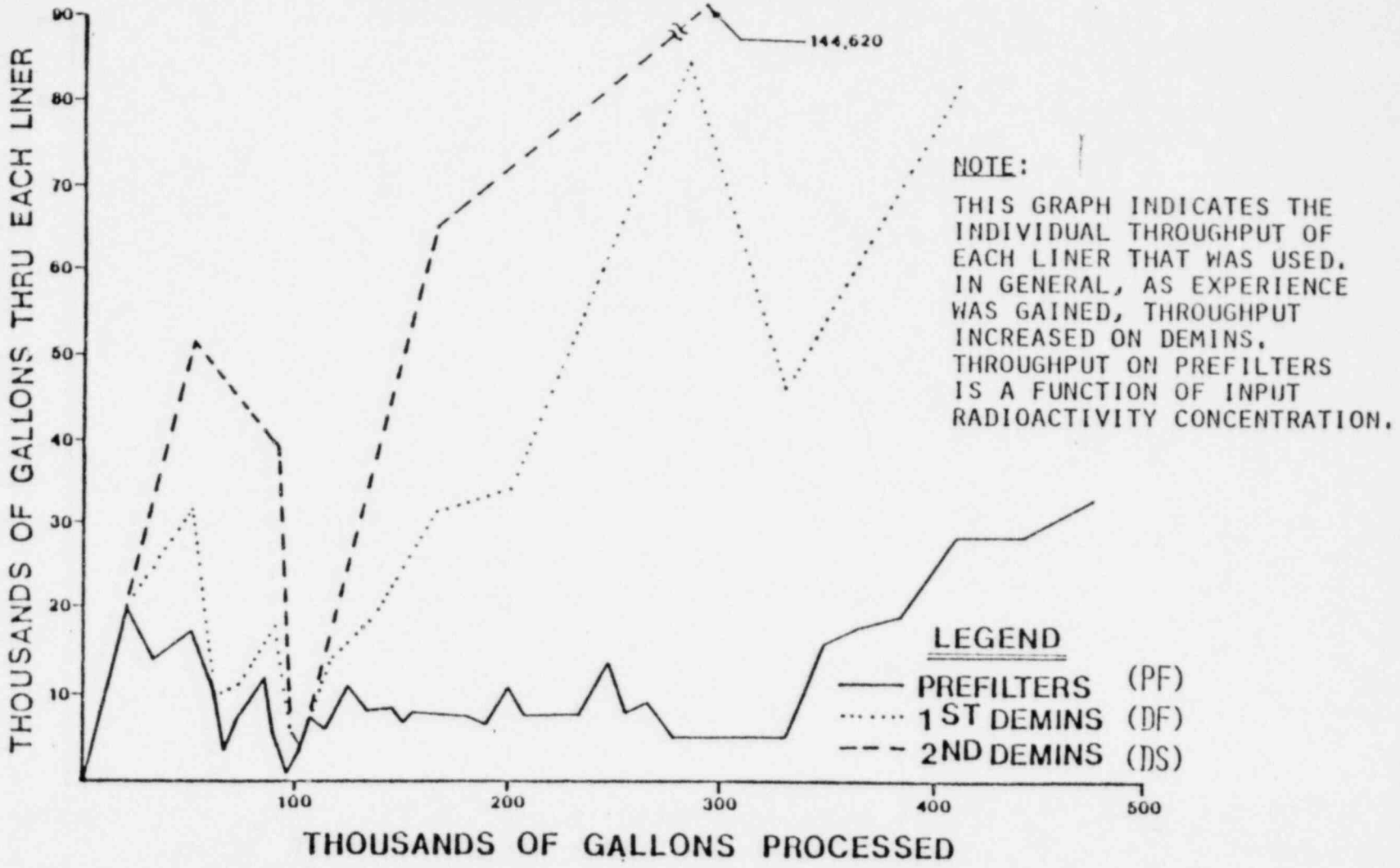


TABLE IV
SECTION 6

EPICOR II
PERSONNEL EXPOSURE

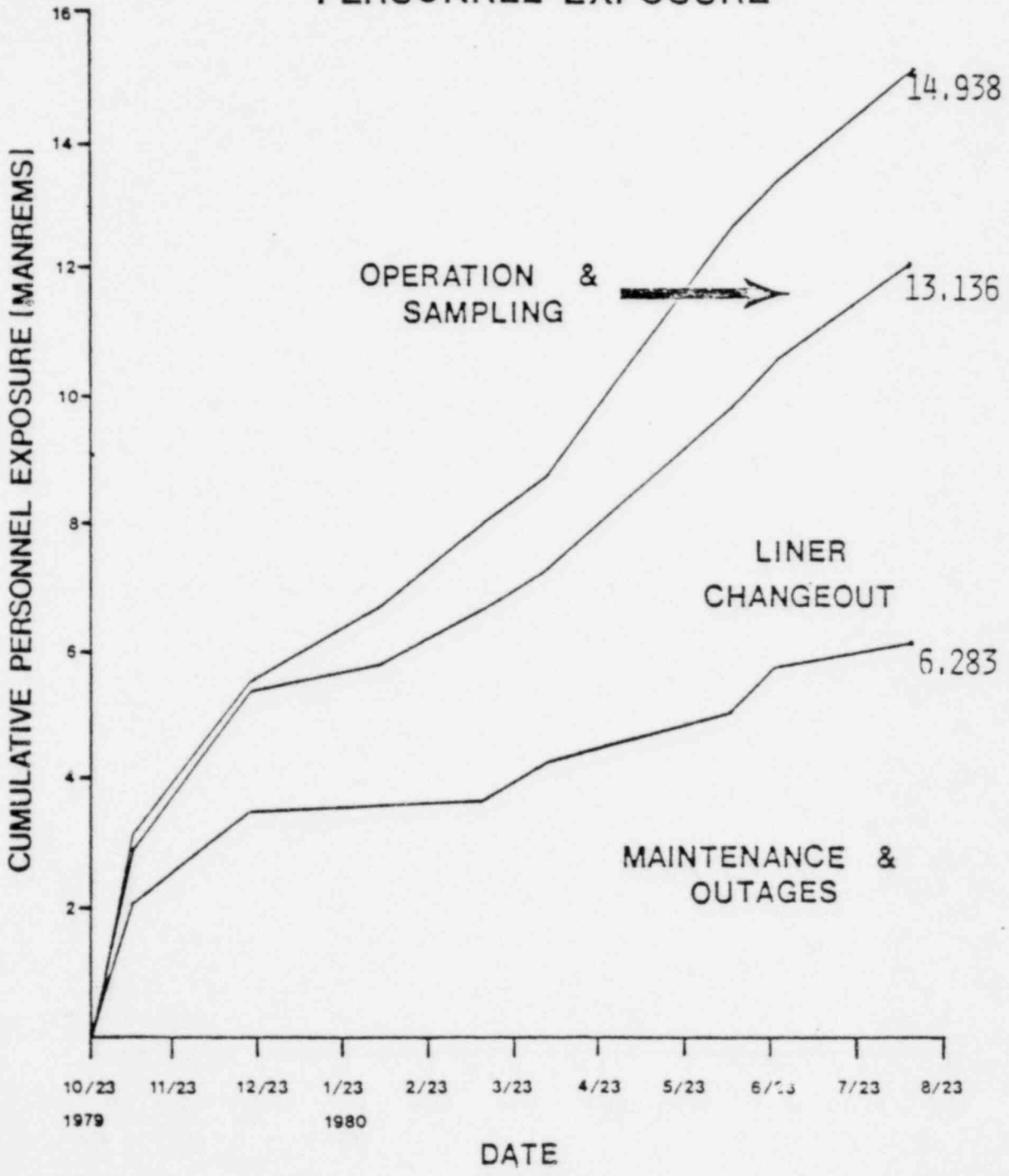


TABLE V
SECTION 6

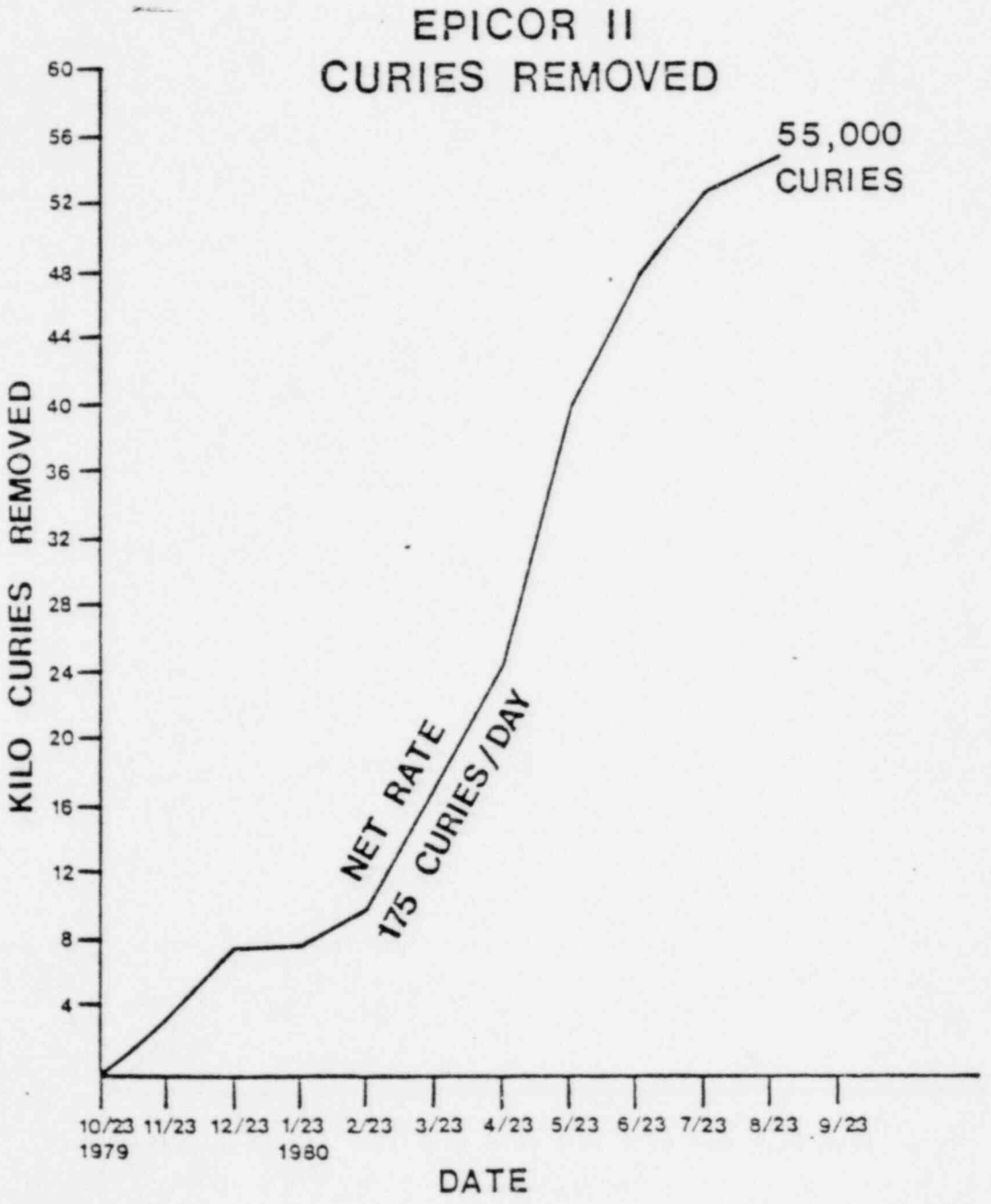


TABLE VI
SECTION 6

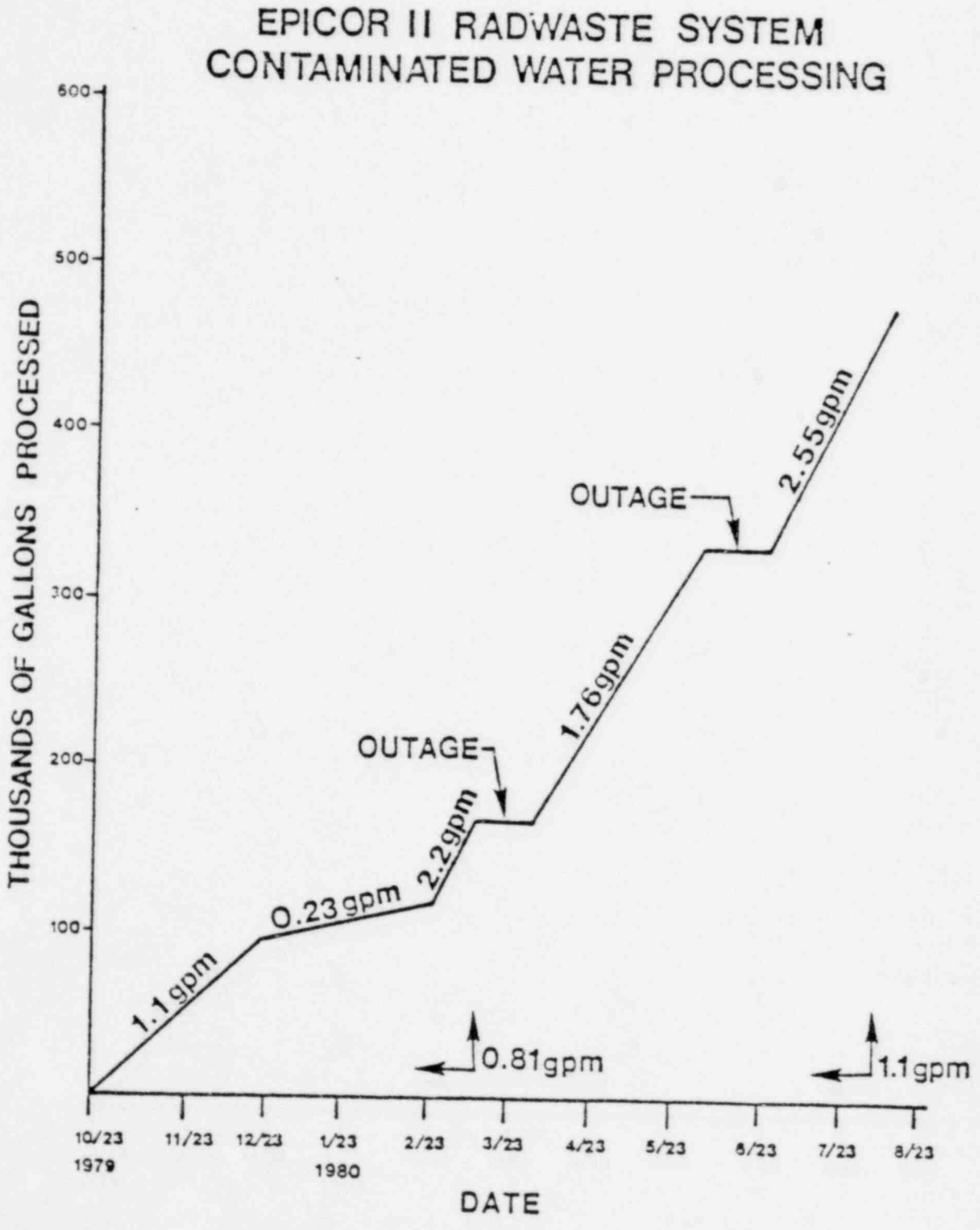


TABLE VII
SECTION 6

SUMMARY OF 69 EPICOR II LINERS

GROSS CURIE LOADING

TO 8 - 11 - 80

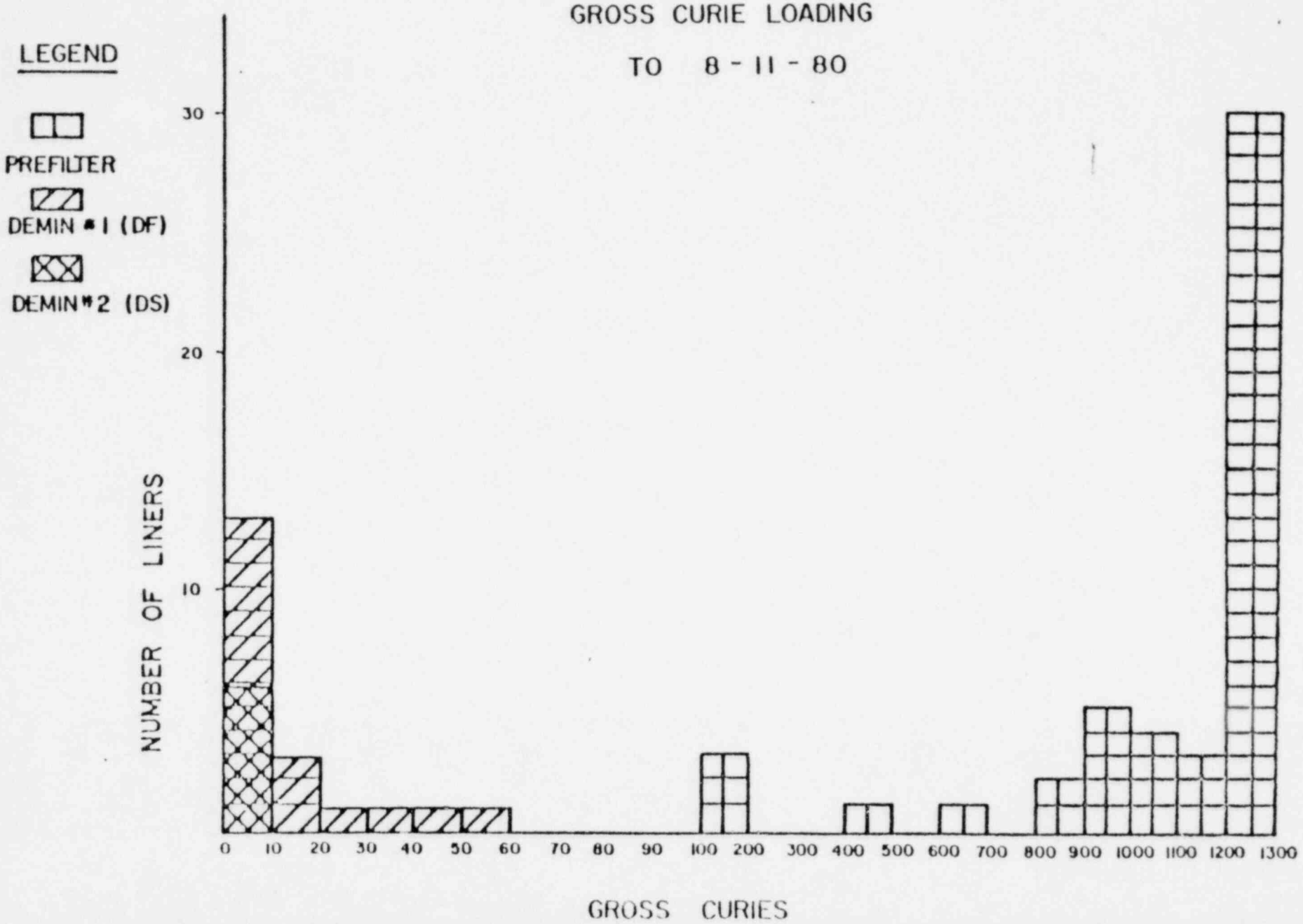


TABLE VIII
Section 6

TMI UNIT 2

CONTAMINATED WATER STORAGE
AUXILIARY & FUEL HANDLING BUILDING

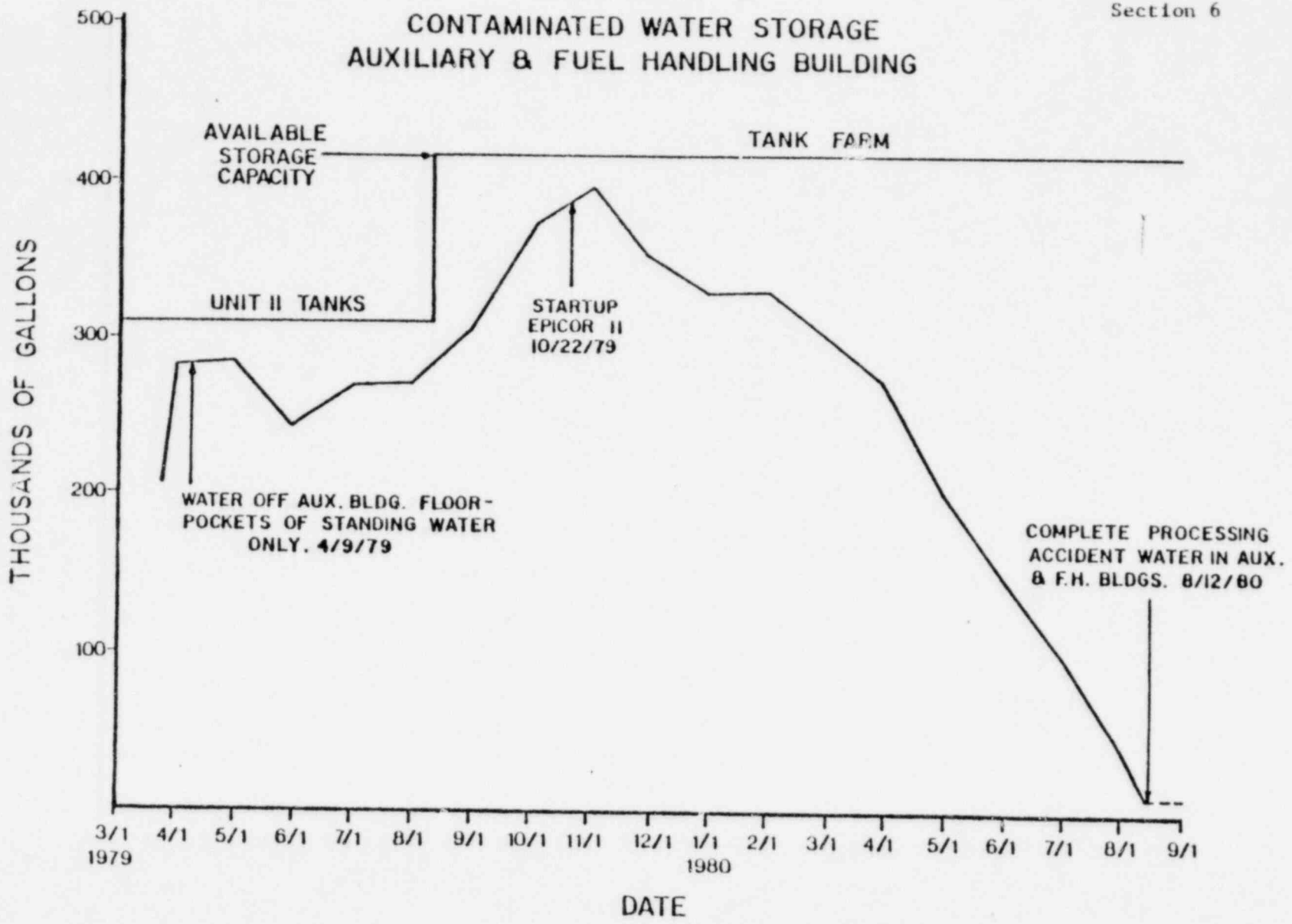
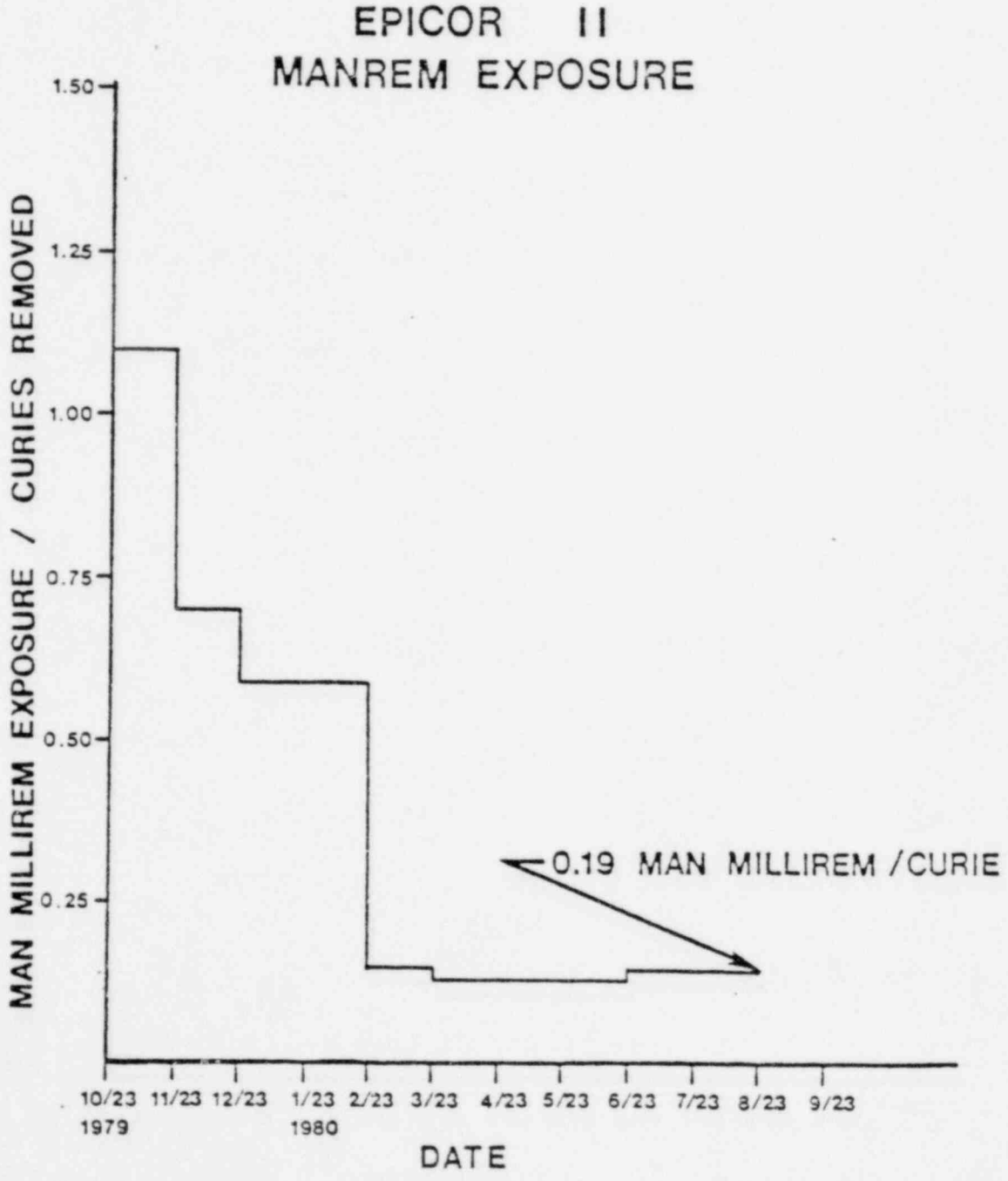


TABLE IX
SECTION 6



6.2 SOLIDIFICATION

6.2.1 EPICOR II RESIN SOLIDIFICATION

During this quarter, TMI personnel initiated assessment and review activity to prepare a specification and scope of work for solidification and shipping of EPICOR II resins. This planning activity is directed toward resins with less than 4 Ci/ft^3 and portland cement based solidification agents.

6.2.2 EVAPORATOR SOLIDIFICATION FACILITY

Some of the activities on this facility during this reporting period were:

1. Final draft of the TER for this facility was completed.

2. Engineering efforts continued and were primarily directed towards completion of engineering packages (flow diagrams, specifications, etc.), to a point where the project could be placed on hold.

6.2.3 SOLIDIFICATION OF ION EXCHANGE MEDIA

A decision logic diagram was prepared during this quarter which shows the interface and sequence of the multiple options necessary for the disposal of ion exchange media.

6.2.4 HITTMAN CHEMISTRY TEST PROGRAM

Relating to solidification of EPICOR II resins, the following progress was made during this quarter:

1. Primary tests for the samples have been completed. Approximately 288 samples selected from the screening tests were subjected to compressive tests to determine structural adequacy of the final product.

2. Flow and pressure drop tests on the modified 4′ x 4′ liner filled with EPICOR II resins were completed.

SECTION 7

RADIOACTIVE WASTE MANAGEMENT

7.1 SOLID WASTE STORAGE

7.1.1 FACILITIES

The interim solid waste staging facility is to be provided for the near term temporary storage of drummed and packaged low specific activity (LSA) radioactive waste produced from Unit I and II that cannot be immediately shipped. The facility will consist of a concrete pad, 80' x 120', free standing masonry walls and a pre-fabricated metal building without siding. The general arrangement drawing, design criteria and shielding design for the facility has been completed and the detailed design continues.

7.1.2 ADDITIONAL MODULES

The need for additional liner storage modules has been readdressed. A study was performed to identify the generation rate of liners and to identify the point in time when further storage modules are needed. Options for increased storage efficiency are being examined.

7.1.3 CONSTRUCTION STATUS

The following module construction is for the interim liner staging facility:

Module 'A' was 100% operational as of June 13, 1980, and is currently in use.

Module 'B' was 100% operational on July 18, 1980, and is available for use when required.

Module 'C' previously reported as excavated and mud mat placed, is actually 70% excavated, with no further construction complete.

Module 'D' has been excavated, and mud mat placed.

7.2 WASTE HANDLING & GENERATION RATE

7.2.1 INVENTORY - FILTER ASSEMBLIES AND DEMINERALIZER BEDS

Spent filter assemblies and demineralizer beds are currently stored in staging facilities on site. There are eleven (11) Epicor I pre-filters and four (4) Epicor I Demineralizers stored in staging facilities awaiting shipment. In addition there are forty-nine (49) Epicor II pre-filters (PF's), fourteen (14) Epicor II 1st stage Demineralizers (DF's) and six (6) Epicor II 2nd stage Demineralizers (DS's) stored in staging facilities pending evaluation of ultimate disposal techniques. There is one (1) 4' x 4' resin liner, and one (1) 6' x 6' used precoat liner stored awaiting shipment. The Epicor I liners and the two (2) miscellaneous liners are being shipped to burial sites on a priority basis.

7.2.2 EVALUATION OF CONTAINERS

In order to more effectively control the handling of LSA waste on the site, an extensive evaluation program was performed. This program involved testing and evaluation of LSA boxes, compacted LSA drums and packaging of small shipments (specifically, s to be

shipped off-site for analysis). Based on the results of this testing, changes were made to existing procedures. In addition, some equipment was upgraded or replaced.

Non-compactable LSA waste is now being packed in metal LSA boxes instead of wooden boxes as was previously done. This changeover to metal boxes was done to provide additional assurance of container integrity as well as reducing the excess bulk inherent in wooden boxes.

7.2.3 LOADING & HANDLING

The procedure for loading and handling LSA drums has been upgraded. New procedure requirements included a lock-nut on the drum clamp ring which is installed using a recently acquired electric impact wrench which is set to a specific torque range. Additionally, more detailed inspection and complete documentation is required for packaging. The average weight of compacted 55 gallon drums has increased to approximately 315 lbs./drum, up from 285 lbs./drum.

7.2.4 GENERATION RATE - LSA

LSA boxes are being generated at a rate of fourteen (14) boxes per month, and are temporarily stored at the TMI southeast staging area prior to shipment.

The 55 gallon drums are being generated at a rate of forty (40) per month and are also temporarily being stored in the southeast staging area.

7.3 WASTE MANAGEMENT TRAINING

The Requalification Operators training program included use of the Temporary Nuclear Sampling System and Solid Waste Staging Systems.

7.4 WASTE TRANSPORTATION

A schedule has been generated which will be used for shipments of all waste except EPICOR II liners from the site. The intent is to remove all EPICOR I resin liners from the temporary storage facilities and to expeditiously ship all LSA waste currently stored in the southeast staging area.

7.5 RELATED CORRESPONDENCE

A request for permission was submitted to the USNRC on July 25, 1980, to dispose of pre-accident spent resins; the USNRC approved this request for disposal on August 6, 1980. On August 7, 1980, design radiation dose limits for the IWSF (0.3 mrem/hr at the fence nearest the site boundary, 0.3 mrem/hr to employees outside fence surrounding IWSF) were given to the USNRC. The Design Criteria package for the IWSF was transmitted to the USNRC on August 12, 1980. On September 4, 1980, a request was made for USNRC approval to ship as many as six (6) Epicor II liners to DOE for DOE's use in their related Research & Development (R&D) program.

SECTION 8

DECAY HEAT COOLING SYSTEMS

8.1 MINI-DECAY HEAT REMOVAL SYSTEM (MDHRS)

This system is located at the south end of the Fuel Handling Building at the 280'6" elevation.

8.1.1 CURRENT ACTIVITIES MDHRS

Progress was made during this reporting period in the final construction of the Mini-Decay Heat Removal System. This system has been pre-operationally tested and is nearly ready for use. Major activities for the quarter included final testing of the system, turning over the system, working off outstanding action items for engineering, and completing fabrication and installation of the Mini-Decay Heat Removal System Filter. On August 15, 1980 the first filter assembly was successfully hydrostatically tested.

Functional testing of the Mini-Decay Heat Removal System and associated ventilation and cooling water systems is nearing completion. I&C calibration, hydrotesting and electrical checks were completed. Normal operating procedures for MDHRS were also completed.

This system is approximately 98% complete.

8.1.2 RELATED CORRESPONDENCE

On July 15, 1980, Met-Ed requested approval from the USNRC to reduce the pressure on the Standby Pressure Control System from 1500-2400 psig to 225-400 psig to avoid the possibility of over-

pressurizing the low pressure piping that would be exposed to a possible source of overpressurization upon opening DH-V-1 and/or DH-V-171. Approval was received from the USNRC on July 25, 1980. On July 31, 1980, a change to the Technical Specification was requested to include the MDHRS. On August 15, 1980, a Recovery Operations Plan Change Request covering operation of the MDHRS was submitted.

8.1.3 TRAINING

Twenty-Five (25) Requalification Operators were trained on the MDHRS.

8.2 MISCELLANEOUS SYSTEMS AND ACTIVITIES

8.2.1 WESTINGHOUSE ALTERNATE DECAY HEAT REMOVAL (ADHR) SYSTEM

Erection of piping supports for the decay heat piping outside the west wall of the Unit-II Fuel Handling Building has been completed.

The ADHR system has never been used, and was provided as a backup for other decay heat removal methods. The system is not now operational, due to the return of components to the utilities from which they were borrowed. This system has no projected function in the life of the Recovery program.

8.2.2 OTHER ACTIVITIES

Procedures to test the capability of the heat loss to ambient mode to remove reactor decay heat were prepared.

8.3 LONG TERM COOLING SYSTEM "B" STEAM GENERATOR (SG-B)

The equipment associated with long term "B", decay heat cooling mod- has been in an operation-ready status for some time. However, the "B" generator must be filled to be able to use this mode. Engineering work leading to "B" generator fill procedures has been completed so that the fill can be performed. Besides bringing the Long Term Cooling "B" system to full standby pressure readiness, this fill will enhance Reactor Coolant System (RCS) natural circulation characteristics by increasing heat loss of the RCS to the "B" generator and subsequent loss to the containment atmosphere.

SECTION 9

RADIOLOGICAL ENVIRONMENTAL MONITORING

9.1 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (REMP) SAMPLING

Technical Specification sampling of environmental media was conducted during this quarter with no deviations from normal background levels of radiation noted. The semiannual sampling of aquatic biota including fish, sediments and vegetation was conducted during July 1st through the 10th.

All data will be presented in the annual REMP report per the Unit II technical specifications.

9.2 ENVIRONMENTAL DOSIMETRY PROGRAM

Work has commenced on the environmental qualification of the new Panasonic environmental TLDs. Tests to demonstrate compliance with ANSI Guidelines and USNRC Regulatory Guideline 4.13 were initiated September 15, 1980.

A contractual agreement was reached with the University of Michigan to assist in these qualification tests.

9.3 RADIOLOGICAL AND NON-RADIOLOGICAL PROCEDURES

Operational procedures for the purpose of carrying out the REMP and non-radiological technical specifications were revised and updated during this quarter and completed on September 30, 1980. (See Appendix 2, at the end of this report, for the list of procedures.)

9.4 ENVIRONMENTAL MONITORING

9.4.1 GROUNDWATER MONITORING

The gathering of samples on a weekly basis has continued throughout this reporting period. A report, due later in 1980, will show conclusions drawn from analyzing the data to date, and may show a need to alter the schedule of sample taking.

Results of the radioisotopic analyses performed on the eight (8) monitoring wells and seven (7) observation wells revealed that two of the fifteen wells (No's 2 and 3) have shown a slight increase in tritium levels when compared to the previous reporting period. The remaining wells demonstrated tritium values consistent with previous values.

Soil sample results from the observation wells have revealed tritium levels, in certain core sections, above background. Gamma isotopic scans on all samples for the current reporting period revealed no other significant radioisotopes to be present.

Data from the samples is presented in Tables I through VII, immediately following this section.

During this quarter, the pump tests for the groundwater monitoring wells were completed.

9.4.2 INSTRUMENTATION

9.4.2.1 REUTER-STOKES

The first detector of the Reuter-Stokes Sentri System was delivered and field tested during the month of September. When completed, the Sentri System will provide real-time direct radiation readout from several remote locations back to the Environmental Controls headquarters.

9.4.2.2 CITY OF LANCASTER

Members of the Environmental Controls staff continued to assist the City of Lancaster with the operation of their sodium iodide detector to monitor Lancaster's water supply. Environmental Controls staff members completed a calibration check on the system on September 2, 1980.

9.4.2.3 PROCEDURES

Operational procedures were formalized and written for all instrumentation used by the TMI Environmental Controls Group.

9.4.3 LAND USE CENSUS

The annual land use census was conducted by the Environmental Controls Group during August and September and was completed by the end of September. The purpose is to note any shifts in the use of agricultural land around Three Mile Island. Information provided by this census ensures the adequacy of certain environmental sample locations (i.e., milk, vegetables, etc.).

9.4.4 AERIAL REMOTE SENSING

Aerial infrared and true color photographs were taken on July 26, 1980. The photographs are currently being analyzed by NUS for vegetation stress. Any stress sites discovered on the photographs are noted on to field reconnaissance maps. Ground truthing, using these maps as guides, was conducted on September 10th and 11th, 1980 and is now complete.

The purpose of the aerial photography is to monitor drift effects of airborne salts and other minerals that may be released from the cooling tower operation at TMI. These procedures are defined in the operational Environmental Technical Specifications of Unit II and are reported in the Annual Vegetation Summary.

9.5 TRAINING

Two members of the Environmental Controls staff received training on techniques involved with aerial photography, mapping and infrared interpretation.

TABLE I (Sheet 1 of 4)
TRITIUM
MONITORING WELL RESULTS
(pCi/Liter)

DATE	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
1/25				170 ± 70		
2/20			290 ± 90			
2/25		1530 ± 150 (a)				
2/29						280 ± 90
3/5				250 ± 90		
3/11	200 ± 90					
3/26				200 ± 80		
3/27			370±80/660±110(c)		380 ± 80	
3/28		2500 ± 180				990±100/560±100(f)
4/1	990 ± 100					
4/2		1550±100/1770±140(b)	300±80/240±90(d)			430±80/310±80(g)
4/3						
4/9	150 ± 90	1530 ± 160	770 ± 110	170	80 ± 70	330 ± 80
4/11	210 ± 90	1010 ± 110	700 ± 80	320 ± 80	120 ± 70	320 ± 80
4/12	250 ± 80	920 ± 110	720 ± 100	350 ± 80	260 ± 70	440 ± 80
4/13	150 ± 70	980 ± 110	690 ± 90	350 ± 80	330 ± 100	530 ± 80
4/14	170 ± 70	1010 ± 100	590 ± 90	270 ± 80	230 ± 70	430 ± 80
4/15	290 ± 70	610 ± 80	1040 ± 100	290 ± 80	210 ± 70	370 ± 80
4/16	100 ± 90	670 ± 90	580 ± 80	230 ± 80	130 ± 80	200 ± 70
4/17	170 ± 70	730 ± 110	1080 ± 90	290 ± 110	240 ± 150	430 ± 90
4/18	160 ± 80	890 ± 100	860 ± 100	160 ± 80	130 ± 60	300 ± 80
4/19	210 ± 90	720 ± 100	550 ± 90	300 ± 80	120 ± 80	380 ± 80
5/2	130 ± 70	490 ± 80	1090 ± 90	360 ± 70	350 ± 70	910 ± 80
5/8	260 ± 80	910 ± 100	860 ± 90	380 ± 80	260 ± 80	920 ± 90
5/16	100 ± 60	670 ± 90	980 ± 100	310 ± 90	130 ± 80	790 ± 100

(a) recheck = 1600 ± 120
(b) samples for 8:00 & 8:40 a.m.
(c) samples for 9:00 & 9:45 a.m.
(d) samples for 8:19 & 8:2[illegible] a.m.
(e) samples for 11:25 a.m. & 12:30 p.m.
(f) samples for 10:30 a.m. & 11:30 a.m.
(g) samples for 8:55 & 9:00 a.m.

TABLE I (Sheet 2 of 4)
TRITIUM
MONITORING WELL RESULTS
pCi/Liter)

DATE	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6
5/23	170 ± 80	880 ± 80	1270 ± 130	520 ± 130	200 ± 80	750 ± 110
5/30	140 ± 80	950 ± 100	920 ± 80	820 ± 100	250 ± 90	730 ± 110
6/6	200 ± 90	950 ± 100	1260 ± 130	670 ± 120	270 ± 90	870 ± 80
6/13	220 ± 60	710 ± 80	1200 ± 100	580 ± 80	370 ± 100	580 ± 110
6/20	190 ± 80	NOT ANALYZED	1430 ± 140	470 ± 120	230 ± 90	640 ± 120
6/27	230 ± 110	1480 ± 110	1370 ± 120	490 ± 80	320 ± 80	
7/7	240 ± 120	1310 ± 100	1400 ± 90	450 ± 70	120 ± 60	420 ± 90
7/18	160 ± 80	1900 ± 190	1250 ± 130	510 ± 130	250 ± 90	360 ± 110
7/25	180 ± 80	2130 ± 210	1350 ± 140	560 ± 130	290 ± 90	410 ± 120
7/30	190 ± 80	1930 ± 190	1570 ± 160	390 ± 110	260 ± 90	320 ± 110

TABLE I (Sheet 3 of 4)
TRITIUM
MONITORING WELL RESULTS
(pCi/Liter)

DATE	MW-7	MW-8	POND			
3/7		160 ± 80				
3/26	300 ± 80					
4/2		870 ± 90				
4/9	260 ± 90	640 ± 110				
4/11	240 ± 80	1060 ± 100	190 ± 70			
4/12	270 ± 80	1020 ± 100	<100			
4/13	380 ± 80	790 ± 100	100 ± 80			
4/14	480 ± 80	860 ± 100	90 ± 80			
4/15	300 ± 60	570 ± 90	110 ± 80			
4/16	320 ± 90	410 ± 70	< 100			
4/17	490 ± 90	830 ± 80	< 100			
4/18	270 ± 70					
4/19	420 ± 90	870 ± 100	< 130			
4/25						
5/2	310 ± 80	170 ± 100				
5/8	280 ± 80	630 ± 90				
5/16	270 ± 100	570 ± 70				
5/23	300 ± 110	790 ± 110				
5/30	290 ± 90	540 ± 130				
6/6	380 ± 110	680 ± 120				
6/13	660 ± 110	500 ± 70				
6/20	280 ± 90	550 ± 130				
6/27	320 ± 80	410 ± 80				
7/7	440 ± 90	630 ± 90				
7/18	370 ± 110	800 ± 80				

TABLE I (Sheet 4 of 4)
TRITIUM
MONITORING WELL RESULTS
(pCi/Liter)

DATE	MW-7	MW-8	POND			
7/25	310 ± 110	480 ± 120				
7/30	330 ± 110	490 ± 120				

TABLE II (Sheet 1 of 2)
TRITIUM RESULTS
OBSERVATION WELL GROUNDWATER
(pCi/Liter)

DATE	OW-9	OW-10	OW-13B	OW-14	OW-15	OW-16
4/25	2610 ± 160	1480 ± 100				
5/2	350 ± 90	170 ± 90				1090 ± 110
5/8	320 ± 70	430 ± 90		1320 ± 120	200 ± 90	1030 ± 110
5/16	440 ± 80	350 ± 70	440 ± 70	1280 ± 110	<140	1120 ± 110
5/23	290 ± 100	360 ± 110	360 ± 110	1230 ± 120	150 ± 80	950 ± 80
5/30	360 ± 110	430 ± 120	400 ± 120	1270 ± 130	130 ± 80	770 ± 110
6/6	370 ± 110	390 ± 110	350 ± 110	830 ± 80	190 ± 80	770 ± 110
6/14	270 ± 100	460 ± 80	300 ± 90	730 ± 90	220 ± 90	590 ± 100
6/20	320 ± 110	380 ± 110	350 ± 110	610 ± 120	100 ± 80	820 ± 80
6/27	490 ± 80	310 ± 90	390 ± 90	640 ± 100	NOT SAMPLED	760 ± 100
7/7	560 ± 110	910 ± 90	410 ± 80	540 ± 100	210 ± 80	580 ± 90
7/18	500 ± 130	680 ± 120	370 ± 110	670 ± 120	150 ± 80	680 ± 120
7/25	490 ± 120	340 ± 110	290 ± 90	510 ± 130	140 ± 80	720 ± 110
7/30	550 ± 130	880 ± 80	350 ± 110	530 ± 130		

(a) recheck = 1600 ± 120
(b) samples for 8:00 & 8:40 a.m.
(c) samples for 9:00 & 9:45 a.m.
(d) samples for 8:19 & 8:23 a.m.
(e) samples for 11:25 a.m. & 12:35 p.m.
(f) samples for 10:30 a.m. & 11:30 a.m.
(g) samples for 8:55 & 9:00 a.m.

TABLE II (Sheet 2 of 2)

TRITIUM RESULTS
OBSERVATION WELL GROUNDWATER
(pCi/Liter)

DATE	OW-17					
4/25						
5/2	3210 ± 200					
5/8	3220 ± 200					
5/16	3560 ± 220					
5/23	3620 ± 360					
5/30	3500 ± 350					
6/6	3710 ± 370					
6/14	3830 ± 240					
6/20	3620 ± 360					
6/27	3910 ± 260					
7/7	4180 ± 330					
7/18	3620 ± 360					
7/25	4630 ± 460					
7/30	3830 ± 380					

TABLE III
DATA SHEET

SUBJECT: ^{3}H LEVELS (pCi/l) IN OBSERVATION WELL CORE SAMPLES

LOCATION: OW-10 (4/24/80)

ENGINEER: OW-SS1 (4/29/80)

CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l	CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l
0-1	sand & gravel	390±90	0-1	sand, gravel, & stone	540±80
1-2	fill, chips, & sand	560±90	1-2	sand, gravel, & stone	1030±100
2-3	sand & chips	240±80	2-3	sand & gravel	1300±110
3-4	sand, clay & chips	240±70	3-4	sand & gravel	580±90
4-5	sand, clay & chips	350±80	4-5	sand & gravel	1180±90***
5-7	sand & gravel	160±70	5-7	sand & gravel	950±120
7-9	sand & gravel	260±70	7-9	sand & gravel	1350±120
9-11	sand & gravel	200±80	9-10.5	sand & gravel	1220±90
11-13	sand, clay & gravel	330±80	10.5-12	sand & gravel	1180±100
13-15A	sand, shale & quartz	<120			
13-15B	sand, shale & quartz	160±80			
15-17	sand, shale, grave, quartz, & clay	320±80			
17-19	sand, shale, grave, quartz, & clay	100±80			
19-21	shale, sand, clay & gravel	140±70			
21-23	sand & gravel	110±80			
23-25	sand & gravel	1700±140			
25-27	sand, gravel & bedrock	1630±150			

*Cs-137 Detected
Value .101±.041 pCi/gm

**Sample reanalyzed
Cs-137 < .05 pCi/gm

TABLE IV
DATA SHEET

SUBJECT: ^{3}H LEVELS (pCi/l) IN OBSERVATION WELL CORE SAMPLES

LOCATION: OW-11 (4/25/80)

ENGINEER:

CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l	CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l
0-1	sand & gravel	2010±140			
1-2	gravel	1450±120			
2-3	sand, gravel, bedrock, & quartz	1211±110			
3-4	sand, gravel, & bedrock	1950±150			
4-5	gravel & sand	1020±90			
5-5.8	gravel & clay	1460±110			

TABLE V
DATA SHEET

SUBJECT: ^{3}H LEVELS (pCi/ℓ) IN OBSERVATION WELL CORE SAMPLES

LOCATION: OW-13B (5/7/80)

ENGINEER:

CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l	CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l
0-1	sand & gravel	630±90			
1-2	sand, gravel, & cobble	780±90			
2-3	sand & gravel	1240±100			
3-4	sand & gravel	1030±100			
4-5	sand & gravel	560±110			
5-7	sand & gravel	1150±110			
7-9	sand, gravel & clay	200±80			
9-11	sand & gravel	250±80			
11-13	sand & gravel	490±80			
13-15	sand, gravel & clay	420±90			
15-17	sand & gravel	420±90			
17-19	sand & gravel	640±110			
19-21	sand & gravel	1020±100			
21-12	sand & gravel	440±80			
23-24.1	sand, gravel & bedrock	530±80			
24.1-25	sand & bedrock	590±80			

TABLE VI
DATA SHEET

SUBJECT: ^{3}H LEVELS IN OBSERVATION WELL CORE SAMPLES

LOCATION: OW-14 (4/30, 5/1)

ENGINEER:

CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l	CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l
0-1	sand, cobbles, & gravel	1820±110	23.5-25.5	sand & gravel	550±80
1-2	sand, cobbles, gravel & clay	1240±100	25.5-27.5	sand & gravel	2210±140
2-3	clay, sand, & gravel	780±100	27.5-29.5	sand & gravel	2270±150
3-4	sand & gravel	910±90	29.5-30.7	sand & gravel	1450±120
4-5	sand, gravel & quartz	1050±100			
5'-7'	sand, gravel & quartz	550±90			
7'-9'	sand & gravel	690±100			
9'-11'	sandstone, sand, gravel & quartz	650±90			
11'-13'	sand & gravel	670±80			
13'-15'	sand, gravel & clay	590±80			
15'-17'	sand, gravel & clay	1610±160			
17'-19'	bedrock, sand, silt & gravel	430±160			
19'-21'	gravel & sand	800±80			
21'-23'	quartz, sand & cobbles	700±80			

TABLE VII
DATA SHEET

SUBJECT: ^{3}H LEVELS (pCi/l) IN OBSERVATION WELL CORE SAMPLES

LOCATION: OW-15 (5/06/80)

ENGINEER:

CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l	CORE DEPTH FEET	CORE DESCRIPTION	H_3 pCi/l
0-1	loam/silt fine sandy, clay silt	350±100			
1-2	same as 0-1' level	<130			
2-4	clay, silt	160±80			
4-5	clay, silt	520±90			
5-7	silt, sand & clay	<130			
7-9	trace clay, sand, gravel, mica & quartz	170±80			
9-11	Clay/sand	330±90			

SECTION 10

DECONTAMINATION/CORE REMOVAL/RECONSTRUCTION

10.1 DECONTAMINATION

10.1.1 DECONTAMINATION ACTIVITIES

1. Decontamination of open areas (corridors, stairwells, etc.), is 91% complete. Contamination levels on the 328' and 305' elevations have been reduced to less than 500 DPM/100 cm^2 and general radiation levels are less than 1 mr/hr.

2. Decontamination of cubicles continued with the following cubicles decontaminated to less than 50,000 DPM/100 cm^2:

   A. Fuel Handling cask pit and surge tank

   B. Concentrated Waste Pump Room

   C. Hot Instrument Shop

   D. Spent Fuel Cooler Area

   E. Makeup and purification mezzanine area

   F. Neutralization Tank entrance way

   G. Tendon Galley

   H. Auxiliary Sump Filter Room

   I. Model Room

   Cubicle decontamination is 78% complete.

3. An additional thirty percent (30%) of the floor drain covers and drain bells were removed and the drain inlets decontaminated. This makes eighty percent (80%) decontaminated to date.

4. The seal injection valve room was hot flushed to reduce radiation/contamination levels caused by leaks in the cubicle.

5. The liquid waste solidification batch tank was decontaminated and moved out of the Model Room in preparation for SDS tank installation.

6. Containment Building personnel airlock and anteroom was decontaminated in support of the containment entries.

10.1.2 AUXILIARY SUMP FILTERS

Auxiliary sump filters 3A & 3B were removed and will be replaced when mechanical problems are resolved.

10.1.3 PLANNING AND EVALUATION

Current activities in preparation for further decontamination of the containment building include the following:

1. Evaluation of activities required prior to processing water in the sump/basement.

2. Detailed assessment of specific techniques to be used for gross decontamination.

3. Evaluation of specialized and long lead-time equipment which may be required.

4. Preliminary conceptual engineering for support systems design (such as breathing air, water supply, etc.).

5. Assessment of variation of man-rems of exposure for various techniques.

10.1.4 DECONTAMINATION DEMONSTRATION FACILITY

The planned Decontamination Demonstation Facility is a 40′ x 95′ single story prefabricated building. The general arrangement drawing for the facility was completed.

During this reporting period, progress was made on all of the following activities:

1. Detailed engineering necessary to procure decontamination and waste processing equipment.

2. Development of radioactive waste processing components by Battelle which includes cement solidification experiments.

3. Development of overall facility baseline engineering including design criteria, general arrangement, and flow diagrams.

10.1.5 CONTAINMENT RECOVERY SERVICE FACILITY

The planned Containment Recovery Service Building is an open structure 180′ x 166′, that will have a concrete slab and be set on caissons with walls, the lower ten feet of which will be concrete and the upper 30 feet metal siding on a structural steel frame. The general arrangement drawings for the proposed facility were completed and

issued. Work is continuing on the finalization of the design criteria and the Process & Instrumentation Diagram (P&ID) for the facility systems.

Soil core sample drilling was done to provide information for building foundation design.

10.1.6 PERSONNEL ACCESS FACILITY

The planned Personnel Access Facility is a three story structure, 102' x 74'. The ground floor will accommodate processing of radiation work permits, change rooms, monitoring for contamination, health physics offices, and showers. The second floor will house conference room and communication facilities and the third floor will accommodate equipment. The general arrangement drawings were completed for the facility. Work is continuing on the development of the facility design criteria.

Soil core sample drilling was done to provide information for building foundation design.

10.2 REACTOR DISASSEMBLY AND CORE REMOVAL

Several major tasks associated with Phase II, reactor disassembly and core removal, have been initiated. During this quarter, conceptual design was completed on special tooling and video equipment necessary to perform a remote inspection of the reactor vessel and internals prior to head removal. Work has also initiated on development of instruments for non-destructive examination of the TMI-II core through the fuel assembly instrumentation tubes. These tests will use mechanical probing, eddy current measurements, gamma scans, neutron attenuation measurements, and mechanical strength tests to assess the condition of the core.

SECTION 11

RADIOLOGICAL CONTROLS

11.1 CURRENT ACTIVITIES - RADIOLOGICAL CONTROLS

The major activities performed in the area of Radiological Controls during this reporting period were associated with support of plant operations and cleanup, and accomplishing the objectives set forth in the management plan for TMI Unit II Radiological Control Program presented to the USNRC in February 1980. The specific activities associated with this task are herein presented in the Quarterly progress report on the Management Plan (See 11.2).

11.1.1 PROCEDURE REVISION

Substantial progress was realized during this reporting period in the development of Radiological Control Program procedures. All procedures associated with the current Dosimetry program and Respiratory Protection programs were developed, approved, and issued. Seventy-five percent of the planned Instrument Calibration procedures have been issued, and eleven (11) Radiological Controls Operations and Administrative procedures were issued during this quarter. (See Appendix 3 for a list of the procedures.)

11.1.2 DOSIMETRY PROGRAM

The major accomplishment associated with the Dosimetry Program during this reporting period was the formalization and standardization of the program in procedural format.

11.1.3 TRAINING PROGRAM

Qualification training sessions for newly hired Radiological Control Technicians continued during this reporting period. Health Physics Technician training has been conducted during this quarter as necessary for incumbent personnel.

11.1.4 RELATED CORRESPONDENCE

A request was made on July 8, 1980 for a change in Auxiliary Building and Fuel Handing Building Ventilation Systems surveillance requirements to reflect the return of the system to operating condition (supplementary system removed). This was approved by the USNRC on July 31, 1980. Revision 2 of the Unit II Radiation Protection Plan was forwarded to the USNRC on July 25, 1980.

11.2 MANAGEMENT PLAN FOR TMI-II RADIOLOGICAL CONTROL PROGRAM

Table I and II of this section present the progress made in completing the Action Items identified in the Management Plan for TMI-II Radiological Controls Program submitted to the NRC in February 1980. Table I, consisting of nine (9) pages, addresses the status on specific Action Items. Table II, consisting of one (1) page, presents a summary of the Management Plan progress.

TABLE - 1 MANAGEMENT PLAN PROGRESS

	Finding		Corrective Action	Due Date	Status
1.	Management commitment in support of Radiation Safety Program. (morale/attitude problem, operations influence).	a.	The senior vice president, Met-Ed, held policy statement session with all TMI managerial, supervisory and radiological control personnel.	NA	Action completed
		b.	Restructure the Radiological Control Department under a manager reporting directly to the senior vice president.	NA	Action completed
		c.	Create an independent Radiological Assessment Group to monitor the Radiological Control Program.	NA	Action completed
		d.	Implement a Radiation Protection Plan which outlines the philosophy, basic objectives, and policies relating to the Radiological Control Program.	2 weeks after NRC action	Submitted to NRC in January 1980. Resolution of comments in progres
		e.	Assign technician foremen exclusively to on-the-job supervisory duties to provide additional support and direction to technicians.	NA	Action complete

TABLE - 1 MANAGEMENT PLAN PROGRESS

	Finding		Corrective Action	Due Date	Status
1.	(Cont.)	f.	Establish supervisory and management development training programs.	12/80	Action not initiated at this time.
2.	Organizational Structure (Responsibility, function, assignment, and line of authority uncertainties.)	a.	Radiological Control Department re-organization.	NA	Action complete.
		b.	Prepare a procedure defining the Radiological Control Department organization, and responsibilities.	02/80	Action complete -- issued.
		c.	Utilize only Radiological Control technicians and foremen trained in accordance with the revised training program to provide Radiological Control coverage for work at TMI Unit II.	07/31/80	Action complete -- all technicians and foremen employed at TMI-II at the time of publication have been trained in accordance with the revised training program.

TABLE - 1 MANAGEMENT PLAN PROGRESS

	Finding		Corrective Action	Due Date	Status
3.	Technical depth of Radiation Safety Program	a.	Initiate a recruiting program to reinforce the technical/supervisory expertise within the Radiological Control Department.	08/80	Continuing task, current status indicated on TABLE - 3 -- Radiological Controls organization chart.
4.	Training (Training for Radiation Safety & Operations Personnel was inadequate)	a.	Establish training program for all current technicians and foremen.	07/31/80	Training status presented in 2-c, page 2.
		b.	Establish a Radiological training program for all workers at TMI-II.	05/01/80	Program implemented and in progress. Procedure defining program is currently in the approval cycle. Action complete.
		c.	Establish Criteria for special training on "high risk tasks".	07/01/80	Action not started.

TABLE - 1 MANAGEMENT PLAN PROGRESS

Finding		Corrective Action	Due Date	Status
5. Resolution of audit findings.	a.	Establish an audit response procedure.	03/15/80	Action complete.
	b.	Assign responsibility for stating and completing corrective actions on previous NRC and the latest QA audit findings.	02/15/80	Action complete.
	c.	Re-evaluate all previous audit findings for applicability. Re-issue applicable open items.	03/01/80	Action complete.
	d.	Establish an in-house deficiency reporting program.	04/15/80	Action complete.

TABLE - 1 MANAGEMENT PLAN PROGRESS

Finding	Corrective Action	Due Date	Status
6. Preparation and implementation of procedures.	a. Revise all Radiological Procedures compatible with verbatim compliance objectives.		
	1) Five (5) initial procedure revisions applicable to current activities.	04/01/80	Two (2) of the initial procedures was issued (Investigative Report Procedure and Administrative exposure guidelines); the remaining procedures have been developed and are currently in the approval cycle.
	2) Complete a Radiological Control Procedure Manual.	12/01/80	Continuing effort based on priority list issued 01/22/80.
	b. Criteria for action sign off steps in work procedures.	08/01/80	Draft procedure is being prepared.
	c. Change tech specs to expedite review.	open	Awaiting NRC resolution.
7. External Dosimetry	a. Evaluate dosimetry for R. B. re-entry.	02/15/80	Action complete.
	b. Evaluate TLD system and implement modifications.	12/01/80	Evaluation initiated, action not complete.

TABLE - 1 MANAGEMENT PLAN PROGRESS

Finding		Corrective Action	Due Date	Status
7. (Cont.)	c.	Coordinate and direct contracted technical expertise in assessment of external exposures.	02/80	The technical expertise for assessment of external exposures is currently being coordinated and directed by the Manager of Radiological Technical Support. The organization and responsibility procedure defining the current organization was issued in May 1980. The committed action for this finding is considered complete.
	d.	QA program for TLD system	04/30/80	Action Complete.
	e.	Computerized exposure tracking by work group and major task.	04/01/80	Action complete. (system capability)
	f.	Computerized exposure tracking by specific tasks.	12/31/80	Action in progress to meet committed date.

TABLE - 1 MANAGEMENT PLAN PROGRESS

	Finding		Corrective Action	Due Date	Status
8.	Internal Dosimetry Program	a.	Coordinate available technical expertise in evaluation of internal exposures.	NA	Action complete.
		b.	Revise the Bioassay Program.	04/01/80	Procedure defining program has been developed and has been issued. Action complete.
9.	Instrument Program	a.	R.B. re-entry instrument evaluation.	03/01/80	Action complete.
		b.	Coordinate instrument selection, calibration, and maintenance activities.	NA	Action complete.
		c.	Develop a QA program for Instrument calibration.	07/01/80	Action complete.
		d.	Upgrade the TMI Instrument calibration facility.	12/31/80	Action complete.
		e.	Make recommendations for Health Physics counting Lab improvements.	02/15/80	Submitted and being evaluated. Action complete.
		f.	Implement improvements to counting lab.	06/01/80	Action not complete.

TABLE - 1 MANAGEMENT PLAN PROGRESS

Finding		Corrective Action	Due Date	Status
9. (Cont.)	g.	Improve air sampling capabilities.	NA	Action complete
	h.	Improve air sampling practices.	NA	Action complete.
	i.	Improve Radio-Iodine sampling capabilities.	NA	Action complete.
	j.	Implement an improved survey frequency schedule in procedural format.	02/01/80	Schedule has been developed and is incorporated into procedure, currently in approval cycle.
10. Radioactive Material shipping and labeling	a.	Revise all procedures addressing the packaging, handling, shipping, and receipt of Radioactive material.	NA	Action complete.
	b.	Develop guidelines for curie estimations.	04/01/80	PCR to existing procedure submitted and approved. Action complete.
11. Improve decontamination procedures for equipment and tools.	a.	Improve decontamination practices from pre-accident conditions.	NA	Action complete.

TABLE - 1 MANAGEMENT PLAN PROGRESS

	Finding		Corrective Action	Due Date	Status
12.	Implement a program which emphasizes the reduction of personnel exposures to ALARA.	a.	Implement a Radiation protection plan which stresses TMI-II's commitment to a strong radiological control program within the Concept of ALARA.	NA	Program in effect, Radiation Protection Plan awaiting NRC resolution.
		b.	Implement a program for exposure tracking.	09/01/80	Action not complete. Program is being integrated into revised work tracking program being developed at corporate level.
		c.	Issue reports on exposure returns to supervision as an aid in tracking exposure for their personnel.	NA	Continuing effort upon implementation of exposure tracking program identified above. Exposure Reports for EPICOR II operations have been issued periodically, with a final Report issued during this period summarized in this report.
13.	Hold personnel accountable for the actions they take. Establish an understanding of responsibilities and expectations associated with achieving a sound Radiological Control Program.	a.	delegate responsibility for resolving audit findings to supervisory personnel responsible for the area in which the finding occurs.	NA	Continuing action, initiated in February 1980.
		b.	Insert action sign off steps in operational work procedures to ensure proper attention is given to radiological considerations.	08/01/80	A draft of this procedure for accomplishing this is being prepared.
		c.	Prepare guidelines for conductance of critiques for unusual radiological occurrences.	12/01/80	Incorporated in RCPM 4005 "Radiological Investigative Reports". Action Complete.

TABLE - II

MANAGEMENT PLAN PROGRESS

SUMMARY AS OF 09-30-80

COMMITTED ACTIONS

TOTAL	COMPLETED		IN PROGRESS		*DELINQUENT		NOT INITIATED	
NO.	NO.	% TOTAL	NO.	% TOTAL	NO.	% TOTAL	NO.	% TOTAL
48	31	65.0	17	35.0	*5	*10.0	1	2.0

*Delinquent is included in in-progress.

11.3 EFFLUENT RELEASES FROM TMI

No radioactively contaminated liquid was discharged from Unit II. Airborne releases consisted essentially only of krypton-85 and amounted to the following amounts:

1. INITIAL PURGE - vented activity is estimated to range from 38,302 to 50,254 curies with a median value of 44,132 curies.

2. SUBSEQUENT PURGES - vented activity totaled approximately 250 curies.

SECTION 12

QUALITY ASSURANCE/QUALITY CONTROL

12.1 CURRENT ACTIVITIES - QA/QC

12.1.1 RECOVERY QUALITY ASSURANCE PLAN

The Recovery Quality Assurance Plan, Revision 0, was issued on September 26, 1980.

The transmittal of the Plan requires recipients to review it and identify any specific areas where full compliance cannot be attained by December 26, 1980. These identified areas will be evaluated for acceptability and monitored to assure timely implementation of program requirements by all affected parties.

12.1.2 REPORTING PROCEDURE

A Quality Assurance Modifications/Operations Section Procedure, numbered 7-2-MO-001 was written and approved during this reporting period. QA/QC developed this procedure to allow the reporting of audits, corrective actions, inspections and other information based on a Unit I or Unit II basis in conjunction with TMI's present administrative effort to completely separate these Units. The first reporting of QA/QC activities using this procedure was submitted during the last week of September.

SECTION 13

SAFETY/SECURITY/FIRE PROTECTION

13.1 INDUSTRIAL SAFETY AND HEALTH

13.1.1 ORGANIZATION AND EMPHASIS

During this reporting period, the reporting responsibility of the TMI Unit II Industrial Safety and Health Department was transferred from the TMI-II Manager of Administration and Services to the Safety Manager of the GPU Service Corporation. This transfer is in preparation for the formation of the GPU Nuclear Corporation, and is in accordance with the planned reporting responsibilities of the safety and health personnel. The specific activities performed by the TMI Unit II Industrial Safety and Health Department during this reporting period are presented herein and were directed to ensure compliance of all work with OSHA regulations and to protect the health and safety of all individual workers in the performance of their duties.

13.1.2 HAZARD ABATEMENT ACTIONS

The Unit II Industrial Safety and Health has an established hazard abatement program by which workplace health and safety hazards are identified, analyzed and corrected. Entering the subject period, a total of twenty-six hazards were identified, analyzed, and still pending resolution. During the subject period, nineteen more hazards were identified and

analyzed. At the time of this report, twelve of the forty-five pending hazards have been resolved and thirty-three remain to be acted upon.

13.1.3 PROCEDURES DEVELOPMENT

Several Met-Ed and GPU safe work practices and procedures documents are being consolidated into a single set of procedures applicable to TMI Unit I and Unit II. Documents completed this reporting period were; Hard Hat and Safety Glasses Regulations, Basic safety Rules and Regulations, and Work Duration Times for Employees Exposed to High Temperatures.

13.1.4 TRAINING

During this reporting period one hundred eighty-nine (189) maintenance personnel received First Aid and Cardiopulmonary Resuscitation (CPR) training.

13.2 TMI-UNIT II SECURITY

13.2.1 BADGING SYSTEM

The new and separate badging system for Unit II for all company employees is now complete and fully implemented.

13.2.2 SECURITY STAFF

The increase in security staff is now complete and Met-Ed Site Protection Officers control all access to vital/protected areas of Unit II.

13.2.3 TRAINING

Requalification operators were instructed on the Emergency Plan and Security Training.

13.2.4 CONTROL ROOM ACCESS

Engineering was completed to provide key locks on the inside of the main control room access doors.

13.2.5 RELATED CORRESPONDENCE

Revision 2 to the TMI-II Physical Security Plan addendum was submitted on August 12, 1980.

13.2.6 SAFETY PROCEDURES

During this reporting period, two (2) procedures were written and submitted and are now in the review and approval cycle. The procedures are:

1. # 1530.10 - Bomb Threats
2. # 1500.5 - Security Reports/Forms

13.3 PLANT FIRE PROTECTION

13.3.1 TMI FIRE BRIGADE TRAINING

Annual fire brigade training began on July 17, 1980, and continued for six weeks. The program included classroom and "hands-on" practical training. Permission was requested from and granted by Pennsylvania Department of Environmental Resources to burn flammable substances in connection with this training. Fifteen (15) Auxiliary "A" operators, twenty-two (22) requalification operators and one hundred eighty-nine (189) maintenance personnel received Fire Brigade Training.

13.3.2 AIR NATIONAL GUARDSMEN

Approximately twenty (20) members of the Pennsylvania Air National Guard assigned to Harrisburg International Airport took part in A TMI-related fire training at the airport on July 27, 1980, in cooperation with TMI fire safety personnel. The guardsmen were briefed on plant physical layout and locations of fire hazards. The guardsmen would be back-up for Londonderry Township Fire Co., (TMI's primary response fire company) if conditions would warrant their assistance.

13.3.3 ENGINEERING ACTIVITIES

Design criteria for the following recovery projects were reviewed for fire protection requirements: Containment Recovery Service Building, Demonstration Decon Facility, TLD Building Expansion, and Hot Chem Lab.

13.3.4 AUDIT RESPONSE

Technical and administrative corrective measures were taken in response to NRC inspection 80-09, cutting and welding infraction.

SECTION 14

ADDITIONAL SYSTEMS/TASKS/CONSTRUCTION
NEEDED TO SUPPORT RECOVERY

14.1 PLANT MAINTENANCE

14.1.1 WORK FORCE

The Unit II Met-Ed Maintenance Force experienced a step change in the number of personnel assigned to the Unit on September 15, 1980. A total of twenty-seven (27) shift maintenance personnel previously working in Unit I were reassigned to Unit II as part of the continuing effort to separate the Units. This also provided a small amount of backshift coverage to handle any immediate priorities which may arise. Counteracting this increase in Met-Ed personnel is a reduction in contractor personnel which is presently in progress.

14.1.2 DECONTAMINATION SUPPORT

A program was begun to concentrate some of the department's activities on a cubicle by cubicle basis. The object was to follow the decontamination group into a cubicle to perform necessary corrective and preventive maintenance on an area basis in an attempt to stop any sources of contamination from re-contaminating the cubicle. Weekly meetings were held to update and report progress on this work. This effort was put on "Hold" at the end of this quarter due to financial constraints. Preventative Maintenance will continue to do this work on a "spot basis" only as needed to support scheduled recovery efforts.

14.1.3 NUCLEAR SERVICE RIVER WATER PUMPS

The latest delivery information for needed material to repair these pumps indicate that parts will not be available until early Fall of 1981. This item will be dropped from periodic status reports until parts arrive. Use of these pumps to provide cooling water to the ADHR System is no longer required.

14.1.4 "B" WASTE GAS COMPRESSOR

Although repairs to the "B" Waste Gas Compressor have been completed for several months, repairs to the suction diaphragm valves were stalled due to a lack of parts. Material was received, and repairs to the valves was completed before September 30, 1980.

14.1.5 BOP DIESEL GENERATORS

On August 11, 1980, the USNRC approved the request to disconnect the BOP Diesel Generators and the 13.2 KV power supply, and the need for this emergency backup system was deleted from the Tech Specs. This system was then disconnected.

14.2 REACTOR COOLANT SYSTEM (RCS)

14.2.1 MAKEUP SYSTEM FOR RCS

The makeup is provided to the Reactor Coolant System (RCS) through the Standby Pressure Control System (SPC). This system was completed on May 23, 1980, and remains operational.

14.2.2 PERMANENT SAMPLE SYSTEM

The previous quarterly report showed that this system installation was 25% complete on June 30, 1980. There has been no further activity on the construction of the Unit II Permanent Sample System during this reporting period. This is now a deferred item. Samples continued to be taken using the Temporary Sample System throughout this quarter.

14.2.3 RC SAMPLE LINES

Permanent isolation of the reactor coolant sample lines originally routed to Unit I was completed. Portions within Unit I were flushed and capped.

14.2.4 RCS CHEMISTRY/SAMPLING

In order to demonstrate adequate control of oxygen concentration in the RCS, an analytical study was performed by B&W that demonstrated that excess hydrogen in the RCS maintains oxygen below acceptable levels by radiolytic recombination.

Control was further verified by design and installation by Plant Engineering of an on-line oxygen analyzer in the RCS sample line. Results were consistent with the result of the analytical study.

An apparatus for on-site analysis of RCS dissolved gases was delivered and will be installed by Plant Engineering in the new Unit II Temporary Sample Sink.

14.3 CHEMISTRY/RADIOCHEMISTRY

The gamma spectrometry counting facility is located in the Unit II Turbine Building and is presently operational.

14.3.1 COUNTING INSTRUMENTATION

Radiochemistry personnel have been involved in the development and evaluation of new counting instrumentation including a laundry monitor and liquid scintillation counter.

14.3.2 COMPUTERIZED PROGRAM

The Computerized Radionuclide Analysis by Mini-Computer (CRAM) program to analyze gamma spectra taken with the HP 9830 computerized multichannel analyzer has been modified to properly analyze doublets appearing in Ge(Li) spectra. Other software revisions include improved background and error algorithms.

14.3.3 RADIOCHEMISTRY PROCEDURE

A routine QC program has been developed for all radiochemistry counting systems with a formal procedure submitted to PORC. Procedures for handling primary standard liquid sources have also been written.

14.3.4 BETA SPECTROMETRY

The technique of analyzing air particulate and evaporated liquid samples for ^{90}Sr (^{90}Y) by beta spectrometry was improved. These analyses are now routinely performed on site.

14.3.5 QUANTITY OF SAMPLES

During the third quarter of 1980, nearly 9000 analyses on approximately 6000 radioactive samples were performed in support of routine operation, decon and recovery of Unit II.

14.3.6 NEW CONSTRUCTION

The planned hot chemistry lab will include about 4300 sq. ft. on the ground floor with a penthouse to house mechanical equipment. The lay-out drawings for the facility were completed and issued during this quarter. Construction is now deferred pending completion of licensing activities.

14.4 AUXILIARY BUILDING VENTILATION SYSTEM

After several months of relatively uneventful operation, the Auxiliary Building ventilation system is again causing problems. In early August, Building Exhaust Fan 8B tore away from its mounting, ruining bearings, bending its shaft, damaging fan blading and destroying its vortex dampers. Repairs have progressed as far as possible and are now on hold awaiting parts. Plant Engineering is working on a way to provide sturdier mounting supports for the fans and also studying what should be accomplished to prevent further fan failures.

14.5 ENGINEERING ACTIVITIES

14.5.1 DRAWING UPDATE PROGRAM

A drawing update program to reflect the pre and post-accident modifications made at TMI II has been initiated. Present estimates of progress on the 2555 series and 3475 series drawings indicate that approximately 25% of the changes are incorporated on approximately one hundred (100) baseline drawings (i.e., One Line Diagrams, Flow Diagrams, and General Arrangement Drawings).

Work is progressing on a "time available" basis.

14.5.2 ENGINEERING PROCEDURES

Review of all post-accident engineering procedures for incorporation into or deletion from normal plant procedures, is partially completed.

Drafts were completed of the following engineering administrative procedures:

1. Startup and Test Administration
2. System Turnover
3. Work Authorization
4. Purchase Requisition Preparation

14.5.3 SEWAGE SYSTEM

The design criteria for sewage collection and treatment system were completed.

14.6 ADDITIONAL TRAINING PROGRAMS

14.6.1 AUXILIARY OPERATORS

Fifteen (15) Auxiliary Operators received training on the primary, secondary and temporary systems.

Fifteen (15) Auxiliary "A" Operators received Advanced Health Physics training.

14.6.2 REQUALIFICATION OPERATORS

Requalification Operators refer to Reactor Opeators (RO), Senior Reactor Operators (SRO) and Control Room Operators (CRO) who were previously licensed by the USNRC and are now required to participate in an annual requalification program.

Twenty-five (25) Requalification operators received Reactor Theory and information on the Diesel Generator and its associated auxiliaries, and with Emergency Feedwater System.

Four (4) Requalification Operators received advanced HP training.

The Requalification Operators attended lectures on Lessons Learned and on the Crystal River loss of NNI Power Supply.

Twenty-five (25) Requalification Operators have received instruction on the Condensate Polishing System.

14.6.3 REPLACEMENT OPERATORS

Replacement Operators refer to those individuals who have not been previously licensed at this facility (TMI) and who are preparing for the USNRC Licensing Examination.

There are currently three (3) Replacement Operators preparing for the USNRC Licensing Examination which is expected to be conducted in November 1980.

14.6.4 OTHERS

A total of nine (9) operators are continuing their instruction for USNRC licenses.

Eighteen (18) personnel from the Mechanical Department received Valve and Pump Operation training. Eighteen (18) Mechanical technicians have received instruction on the Condensate Polishing System.

Thirty-three (33) members of the Utility group were involved in Basic Electrical and Mechanical Fundamentals training.

Maintenance training classes were conducted for Unit Control and Maintenance (UC&M) on Substation Electrical, BOP Electrical and Mechanical systems.

14.6.5 RELATED CORRESPONDENCE

On August 8, 1980, Met-Ed submitted the Licensed Operator Qualification and Requalification Training Programs to the USNRC.

SECTION 15

MISCELLANEOUS PROGRAMS/RESEARCH & DEVELOPMENT

15.1 PROGRAMMATIC ENVIRONMENTAL IMPACT STATEMENT

The USNRC's draft Programmatic Environmental Impact Statement (PEIS) for Unit II Recovery, which was released for public comment during this quarter, is being reviewed by Company personnel.

15.2 RESEARCH AND DEVELOPMENT

15.2.1 TECHNICAL WORKING GROUP

Engineering personnel participated in a Technical Working Group meeting at Idaho Falls, Idaho, to review two (2) reports which discuss Radioactive Waste Handling and Decontamination and Dose Reduction.

15.2.2 DEWATERED RESIN STUDY

Planning was done to support a study to characterize EPICOR II waste resins. The project will require the shipment of two (2) dewatered resin liners for study at an offsite laboratory. Procedures and transfer equipment needed to enable this shipment are being considered.

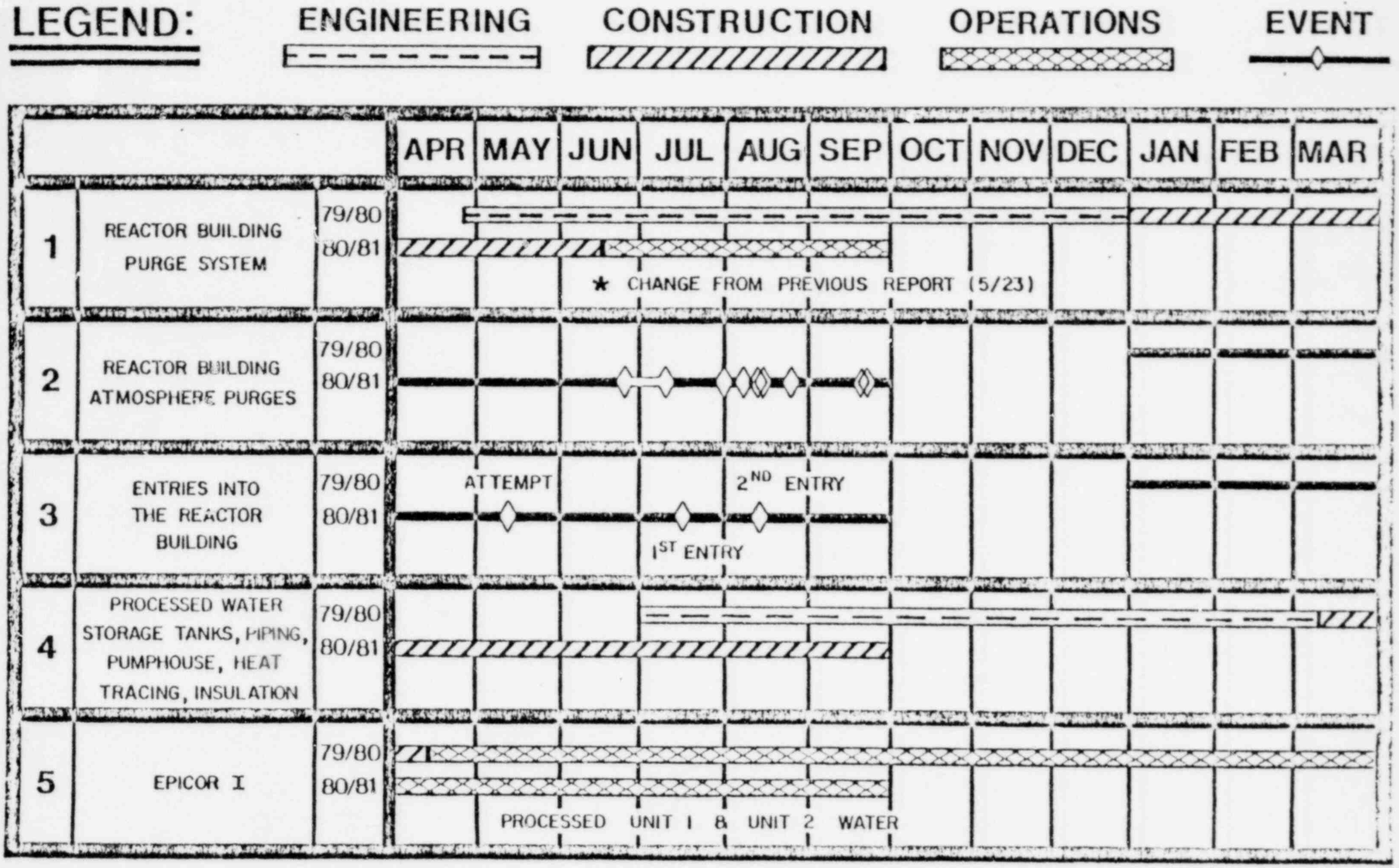
SECTION 16

GRAPHICS

16.1 CURRENT STATUS OF RECOVERY ACTIVITIES

Herein is presented a status of current recovery activities diagrammatically to provide assistance in reviewing TMI's recovery activities. This is meant to augment the text, and details for the following can be found throughout this quarterly report.

CURRENT STATUS
OF RECOVERY ACTIVITIES
FROM DATE OF ACCIDENT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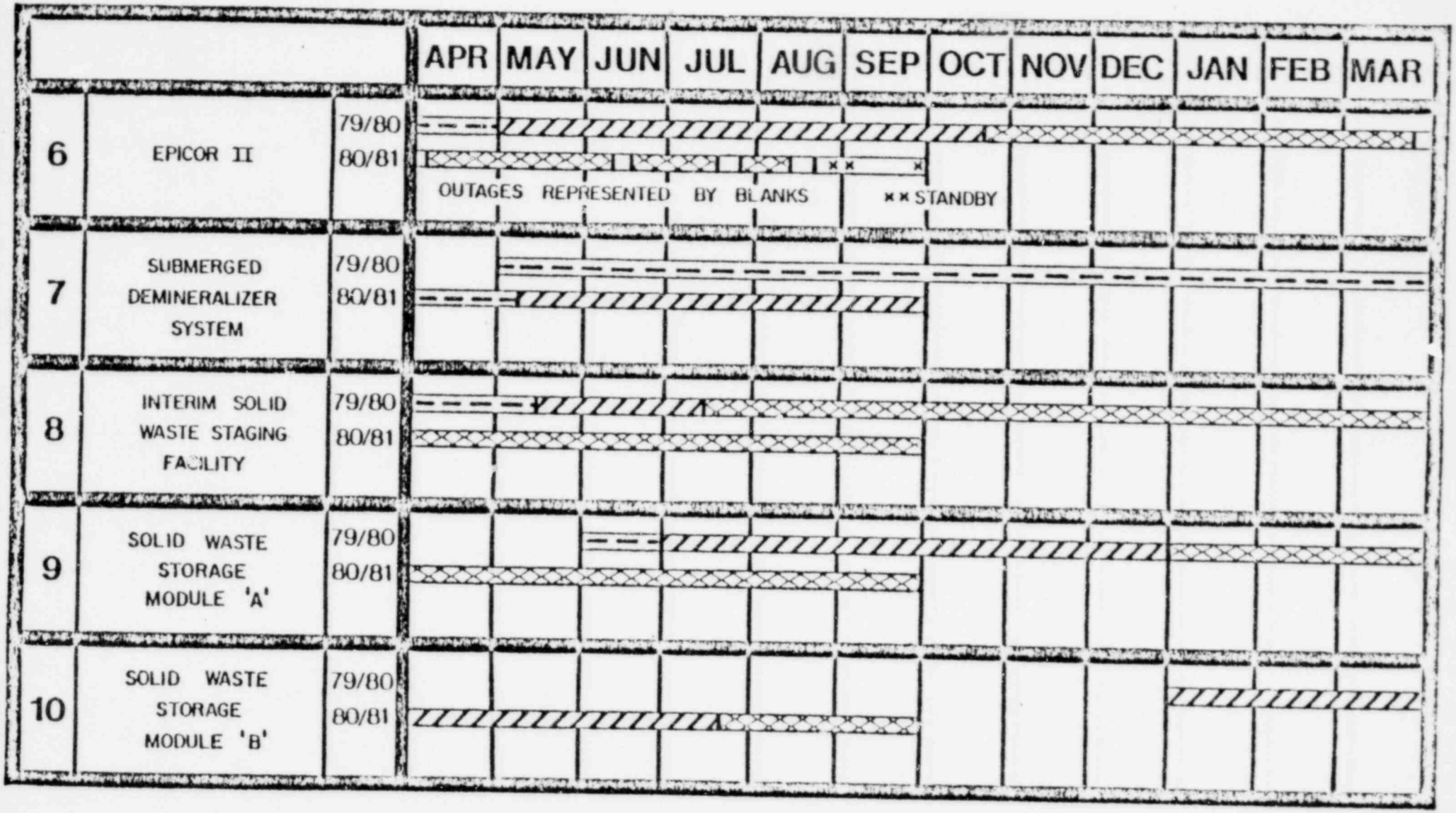
1
REACTOR BUILDING PURGE SYSTEM
79/80
80/81
★ CHANGE FROM PREVIOUS REPORT (5/23)
2
REACTOR BUILDING ATMOSPHERE PURGES
79/80
80/81
3
ENTRIES INTO THE REACTOR BUILDING
79/80
80/81
ATTEMPT
2ND ENTRY
1ST ENTRY
4
PROCESSED WATER STORAGE TANKS, PIPING, PUMPHOUSE, HEAT TRACING, INSULATION
79/80
80/81
5
EPICOR I
79/80
80/81
PROCESSED UNIT 1 & UNIT 2 WATER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EPICOR II
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80/81
OUTAGES REPRESENTED BY BLANKS
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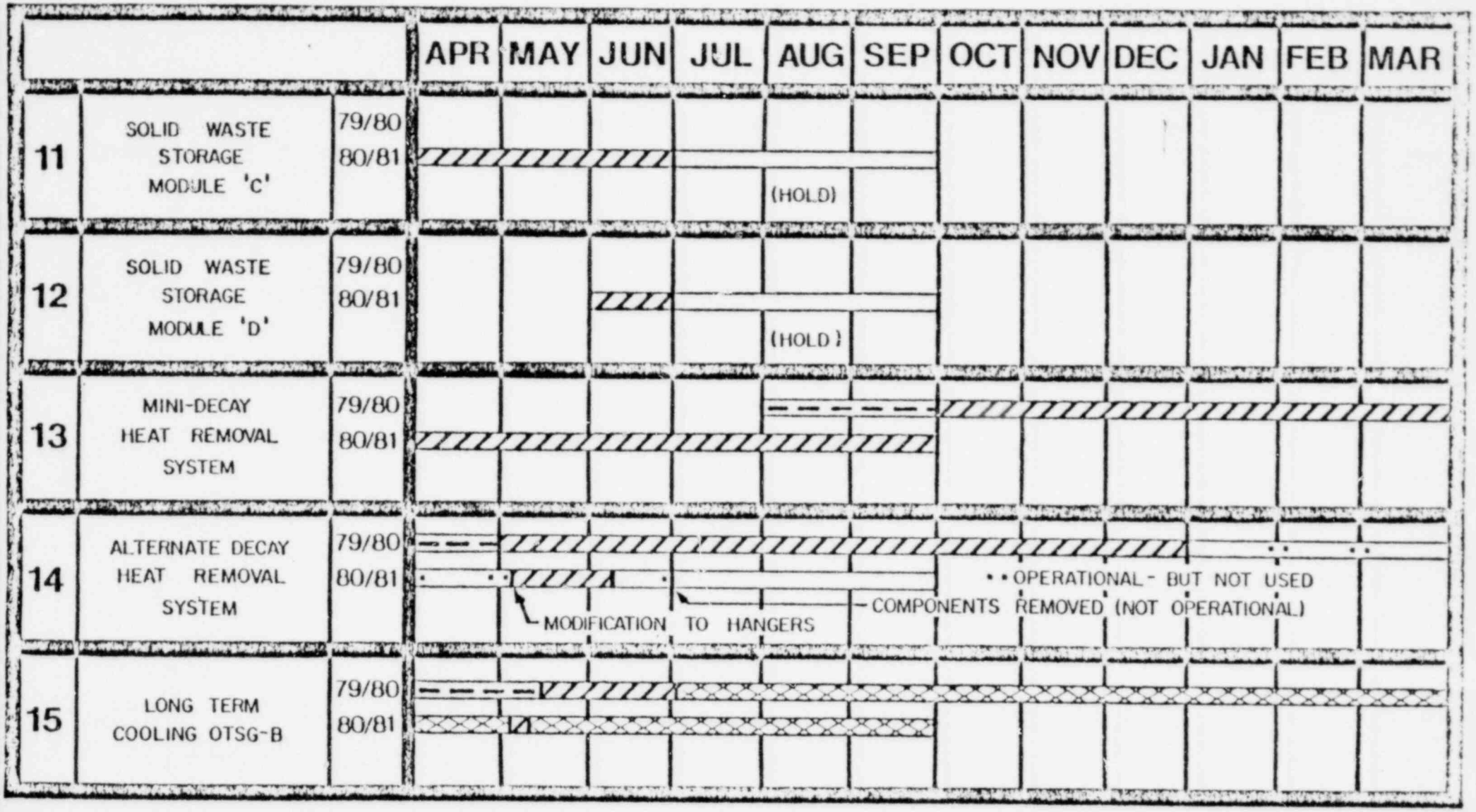
SUBMERGED DEMINERALIZER SYSTEM
79/80
80/81
8
INTERIM SOLID WASTE STAGING FACILITY
79/80
80/81
9
SOLID WASTE STORAGE MODULE 'A'
79/80
80/81
10
SOLID WASTE STORAGE MODULE 'B'
79/80
80/81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11
SOLID WASTE STORAGE MODULE 'C'
79/80
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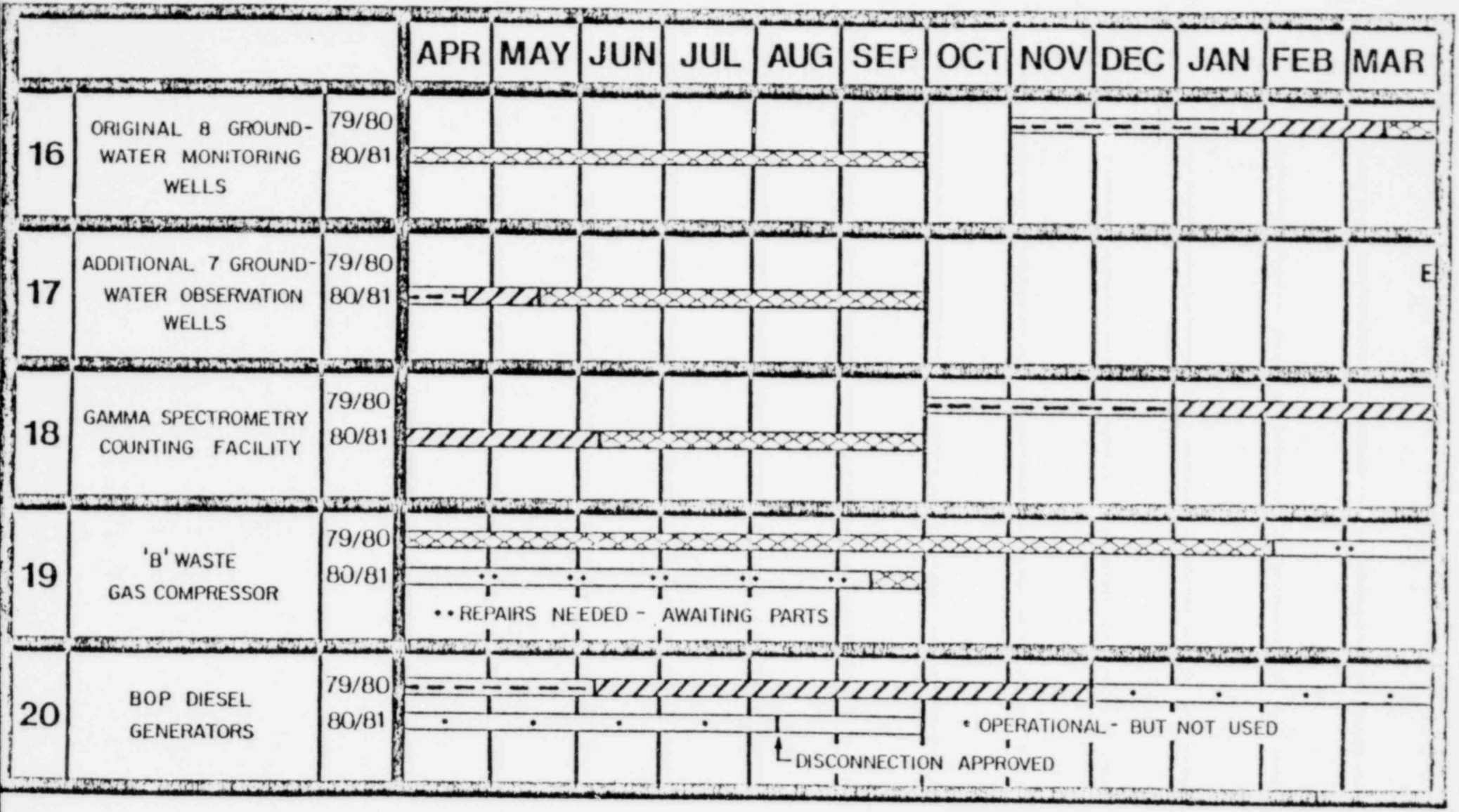
(HOLD)
12
SOLID WASTE STORAGE MODULE 'D'
79/80
80/81
(HOLD)
13
MINI-DECAY HEAT REMOVAL SYSTEM
79/80
80/81
14
ALTERNATE DECAY HEAT REMOVAL SYSTEM
79/80
80/81
MODIFICATION TO HANGERS
COMPONENTS REMOVED (NOT OPERATIONAL)
• • OPERATIONAL - BUT NOT USED
15
LONG TERM COOLING OTSG-B
79/80
80/81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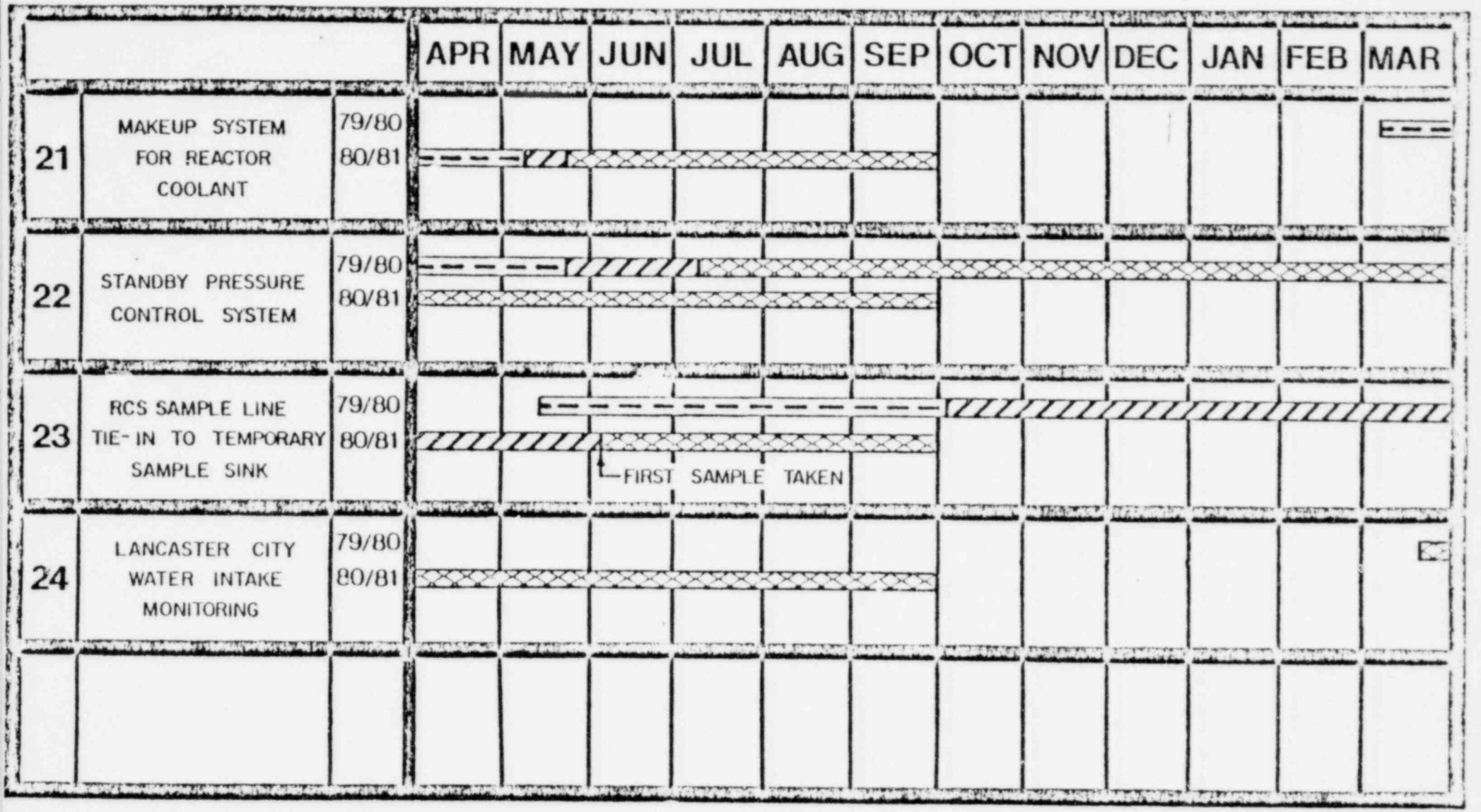
16
ORIGINAL 8 GROUND-WATER MONITORING WELLS
79/80
80/81
17
ADDITIONAL 7 GROUND-WATER OBSERVATION WELLS
79/80
80/81
E
18
GAMMA SPECTROMETRY COUNTING FACILITY
79/80
80/81
19
'B' WASTE GAS COMPRESSOR
79/80
80/81
•• REPAIRS NEEDED - AWAITING PARTS
20
BOP DIESEL GENERATORS
79/80
80/81
• OPERATIONAL - BUT NOT USED
DISCONNECTION APPROVED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21
MAKEUP SYSTEM FOR REACTOR COOLANT
79/80
80/81
22
STANDBY PRESSURE CONTROL SYSTEM
79/80
80/81
23
RCS SAMPLE LINE TIE-IN TO TEMPORARY SAMPLE SINK
79/80
80/81
FIRST SAMPLE TAKEN
24
LANCASTER CITY WATER INTAKE MONITORING
79/80
80/81

APPENDIX 1

MET-ED TMI-II LICENSING CORRESPONDENCE TO USNRC

DATE	TLL NO.	SUBJECT
7/2/80	293	Response to IE Bulletin 80-06
7/2/80	305	Copy of letter to PaDER requesting approval to test two new tanks
7/2/80	308	Response to combine inspection report 50-289/80-02, 50-320/80-02
7/2/80	313	LER 80-004/01-T-1 related to potential for exceeding allowable stress in MDHRS, valves
7/2/80	314	Supplementary report on TMI-II Water Processing and Processed Water Disposition Plan for 1980 (REV. 2) and 1981 (REV. 1)
7/2/80	316	Evaluation of Epicor II wastes
7/2/80	321	Forward check for inspection fees.
7/3/80	315	Response to IE Bulletin 80-12
7/7/80	323	Request for meetings related to PEIS
7/8/80	320	Recovery Operations Plan Change Request No. 2 (Ventilation System Surveillance requirements)
7/8/80	333	LER 80-27/1P concerning filter fire protection
7/9/80	283	Supplemental information on SDS supplied
7/9/80	324	LER 80-024/03L-0 related to apparent high boron concentration in BAMT
7/9/80	301	Request for exemption from the requirements of 10CFR Part 50, App. H
7/9/80	326	Request for formal resolution of difference in interpretation of code requirements

DATE	TLL NO.	SUBJECT
7/9/80	327	Comments on NUREG 0577
7/9/80	328	LER 80-025/03L-0 related to Reactor Coolant Inlet Temperature Meter Failure
7/9/80	335	Schedule for response to IE Bulletin
7/10/80	331	Review of Recovery Mode Surveillance Procedures
7/11/80	299	Response to letter concerning cracks in Westinghouse turbines
7/11/80	310	Copy of Permit for open burning
7/11/80	318	Information Oxygen control of RCS water
7/11/80	322	Revision of Fire Protection Program reflecting reorganization within the company
7/11/80	329	LER 80-011/03L-0 related to failure to timely perform compressed air test
7/11/80	336	Registration of shipping package
7/14/80	332	Financial Protection Requirements
7/15/80	342	Recovery Operations Plan Change No. 4 (reduction of pressure in the Standby Pressure Control System)
7/15/80	343	Procedures for reactor building entry
7/15/80	344	Forwarded Quarterly Report for Second Quarter, 1980
7/16/80	349	Epicor II Resin Irradiation Data
7/17/80	352	Evacuation Time Estimates
7/17/80	355	LER 80-30/1P concerning airlock door seal
7/18/80	358	LER-026/03L-0 reporting less than minimum number of firepumps
7/24/80	360	Inform NRC of intent to make routine reactor building purges (<72 ci/wk)

DATE	TLL NO.	SUBJECT
7/25/80	356	Radiation Protection Plan, Rev. 2, submitted
7/25/80	363	LER 80-03/03L-0 concerning diesel generator trip
7/25/80	365	Pre-Accident Spent Resin Disposal
7/29/80	370	Response to IE Bulletin 80-16
7/31/80	372	Requests Change No. 24 to Technical Specifications (MDHRS)
7/31/80	375	LER 80-33/1P regarding automatic timers
8/1/80	374	Additional information related to SDS
8/4/80	377	Organization (Company Identity)
8/5/80	382	Technical Specification Change Request No. 24 correcting attachment to TLL 372 (7/31/80)
8/5/80	383	LER-80-028/03L-0 concerning diesel trip
8/7/80	362	Radiation dose limits criteria for IWSF
8/7/80	378	Response to IE Bulletin 79-16
8/8/80	380	Licensed Operator Qualification and Requalification Training Program
8/8/80	391	Special Report 80-027/01L-0 related to closing of deluge valves
8/11/80	393	LER 80-36/1P related to a late analysis
8/11/80	394	LER 80-37/1P concerning airlock leak
8/12/80	379	Design Criteria for IWSF
8/12/80	388	Operator License Renewal
8/12/80	396	Revision 2 to the TMI-II Physical Security Plan Addendum
8/13/80	385	Revised Organization Plan
8/14/80	369	Additional response to Inspection Report No.'s 50-289/79-23 and 50-320/79-25

DATE	TLL NO.	SUBJECT
8/14/80	387	Operator License Certification
8/15/80	401	Recovery Operations Plan Change Request No. 5 (MDHRS)
8/18/80	402	LER 80-029/01L-0 concerning diesel failure
8/19/80	409	LER 80-032/03L-0 related to leakage of contaminated water
8/20/80	404	LER 80-030/01L-0 reporting leakage of door seal
8/20/80	406	Further Information on oxygen control of RCS water
8/22/80	381	Further response to IE Bulletin 80-05
8/22/80	408	Submits ORNL evaluation of SDS
8/22/80	415	Response to IE Bulletin 79-23
8/22/80	416	Commits to Contingency Plan for Reactor Building Sump Water Submittal by Oct. 17
8/25/	418	LER 80-034/03L-0 related to the FHB Ventilation System
8/26/80	390	Epicor I future use
8/26/80	419	Rogovin Report Reference
8/26/80	422	LER 80-38/1P concerning a low ventilation flow rate
8/28/80	405	Response to Combined Inspection Report No.'s 50-289/80-03 AND 50-320/80-03
8/29/80	421	Organization Plan Revision 1A
8/29/80	423	Material Status Report Rev. 1
8/29/80	426	Response to IE Bulletin 80-19
8/29/80	427	Response to IE Bulletin 79-21
8/29/80	429	Organization Plan - Rev. 1
9/4/80	413	Request to ship Epicor II liners to DOE
9/4/80	424 & 425	Evaluation of Epicor II Wastes
9/5/80	414	Radioactive Effluent Release Report

DATE	TLL NO.	SUBJECT
9/5/80	446	LER 80-036/01L-0 related to reactor water chemical analysis
9/8/80	431	LER 80-033/01L-0
9/8/80	435	MDHR Technical Specification Change Request
9/8/80	436	Technical Specification Change Request No. 24
9/8/80	437	MDHR System Operations
9/8/80	438	MDHR System Description
9/8/80	440	Response to Combined Inspection Reports 50-320/80-10 and 80-14
9/8/80	441	LER 80-035/03L-0 related to diesel generator fire detectors
9/8/80	442	Response to Combined Inspection Reports 50-332/80-10 and 80-14
9/8/80	444	Response to IE Bulletin 79-25
9/9/80	448	LER 80-037/01L-0 related to a personnel airlock door seal leak
9/11/80	454	Personnel Exposure Letters
9/11/80	459	Photo Negatives from Containment Entry No. 2
9/15/80	461	Submerged Demineralizer System
9/15/80	462	Response to IE Bulletin 79-28
9/12/80	458	1979 Annual Report of Aquatic Environmental Studies at TMI.
9/12/80	463	Blood Pressure Report -- TMI Employee
9/15/80	451	Response to IE Bulletin 79-24
9/15/80	466	TMI Worker Registry
9/17/80	468	Medical Examination -- TMI Employee
9/22/80	450	Response to IE Bulletin 80-12
9/22/80	480	Response to Combined Inspection Reports 50-289/80-02 and 50-320/80-02

DATE	TLL NO.	SUBJECT
9/23/80	470	Submerged Demineralizer System Description
9/24/80	487	Voids LER 80-38/01L-0 (TLL 422)
9/25/80	453	Response to Inspection Report 50-320/80-09
9/26/80	482	Epicor I
9/29/80	495	Containment Building Entry

APPENDIX 2

RADIOLOGICAL & NON-RADIOLOGICAL PROCEDURES

ECP #	TITLE
0004	NRC Non-Routine Reports
0009	Changes Made in Environmental Permits and/or Environmental Tech Specs
1403	Non-Radiological Aquatic Environmental Monitoring Surveillance
1448	Temperature, pH, Biocide, and Chemical Release Inventory
1449	Water Quality Analysis
1450	Benthic Macro Invertebrates
1451	Ichthyoplankton
1452	Fish
1453	Impingement of Organisms
1454	Entrainment of Organisms
1455	Instrument Calibration
1456	Aerial Remote Sensing
1457	Residual Cl_2
1458	Thermal Plume Mapping
1459	Hydraulic Effects
1460	Erosion Control Inspection
1461	Herbicide Applications
1470	Review of the Non-Radiological Environmental Tech Spec Program
1471	Annual, Non-Radiological ETS Report Preparation
1472	Evaluation of Non-Radiological ETS PCR's
1473	Unusual or Important Events

ECP #	TITLE
1475	Population Estimates of Fishes
1476	Creel Survey
1478	Movements of Fishes
1479	Food Habits of Fishes
1480	Particle Size Analysis

APPENDIX 3

RADIOLOGICAL CONTROLS OPERATIONS
AND ADMINISTRATIVE PROCEDURES

RCP #	TITLE
4015	Administrative and Emergency Exposure and Contamination Limits
4051	Respiratory Protection Program
4052	Selection, Prescription and Use of Respiratory Protective Equipment
4053	Inspection, Maintenance and Repair of Respiratory Protective Equipment
4054	Calculation of MPC Hours and Stay Times
4125	Use of Anti-Contamination Clothing
4212	2271 TLD System Fault Corrections
4217	Operating the 2271 TLD Syster.
4238	Bioassay Program
4239	Implementation of the Bioassay Program
4261	Quality Assurance Program for Radiological Instruments (Portable)

Herman Dieckamp
President

GENERAL
PUBLIC
UTILITIES
CORPORATION

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Writer's Direct Dial Number
201-263-6030

September 12, 1980

The Honorable John F. Ahearne, Chairman
United States Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Chairman Ahearne:

I am writing to advise you of actions being taken by the Owners relative to TMI Unit 2.

We have recently completed a review of our near-term planning for cleanup of that Unit. In that review we considered many factors including recent action by the Pennsylvania Public Utility Commission to deny the request of Metropolitan Edison Company for emergency rate relief. However, a major determinant in developing our revised plan was our understanding of the schedule for future NRC actions on the cleanup. That understanding is based on review of the recently issued draft Programmatic Environmental Impact Statement, the NRC Plan for Cleanup Operations of TMI-2 (NUREG 0698) and Mr. Denton's letter of August 6, 1980 to Mr. Arnold of GPU.

Those documents, in conjunction with our experience with NRC action to date, have caused us, very reluctantly, to conclude that we should not rely on any significant regulatory guidance or definition of criteria or approval to proceed with major cleanup activities until completion of the final PEIS. That completion had been scheduled for late 1980 but we understand that serious consideration is being given to extending the period for comments on the draft PEIS with resultant delay in its completion. Further, the draft PEIS indicates that even after issuance of the final statement, we cannot expect to have the definitive guidance and criteria required for us to establish firm plans. Instead much of the cleanup criteria apparently will be developed in the process of reviewing our proposals on a case by case basis. We do not believe that such an approach permits timely, effective progress.

We do not consider that this indicated regulatory approach provides the maximum assurance of protecting the public health and safety. My earlier letter to you of March 4, 1980 and Mr. Arnold's letter to Mr. Denton of June 30, 1980, copy attached, identify our concern with the extended schedule for NRC action and addressed the actions we consider necessary to permit earlier cleanup. We will comment further in connection with the draft PEIS.

However, recognizing that the controlling judgment of the NRC differs from ours on these issues, we cannot continue our current efforts and expenditures to provide what we consider to be the most rapid, practical cleanup. Accordingly, we are proceeding to adjust our efforts on TMI-2 to a level appropriate to the present and indicated situation while being careful to not adversely impact public health and safety. Specifically, the objectives of our revised program are:

1. Maintain the plant in a safe condition with minimum but adequate operating personnel and site support staff.

2. Continue limited decontamination of the Auxiliary Building - areas, lines, tanks.

3. Continue activities directed at cleanup of the Containment Building water (sump and reactor coolant system).

4. Continue carefully selected planning, engineering and licensing activities aimed at Containment Building decontamination, fuel removal, support of licensing submittals.

5. Support PEIS finalization.

6. Continue development of an appropriate Unit 2 Radiological Controls Program.

Please note that we will continue work to permit early cleanup of contaminated water in the Containment Building and reactor coolant system even recognizing the NRC position that we are proceeding at our own risk. However, because of the NRC's present intent to not authorize operation of the Submerged Demineralizer System until after completion of the PEIS, we may cut back overtime and other premium cost efforts. We also plan to continue limited activities, such as additional containment entries, to provide an improved basis for planning.

For completeness in describing our situation, I think some comments on the effect of recent Pennsylvania Public Utility Commission actions are helpful. The request of Metropolitan Edison Company for emergency rate relief to alleviate severe cash flow problems was recently denied by the Pennsylvania Public Utility Commission. This action in and of itself hampers Metropolitan Edison Company's ability to maintain the current level of effort on TMI-2. However, because some TMI-2 costs are covered by insurance and all TMI-2 costs are shared among Metropolitan Edison Company and the other Owners, that impact is not nearly as severe as it may initially appear. For example, our estimate is that Metropolitan Edison's cash requirements will be reduced by about $4 million dollars over a six month period as a result of reducing the total expenditures on TMI-2 by about 50% or $27 million during the same period. The TMI-2 reduction is part of an overall program to reduce

Metropolitan Edison's cash requirements by $32 million over the next six to seven months. Our remaining insurance resources can be more effectively utilized to increase our cleanup efforts once the NRC requirements are clarified. I think it is also important to note that our program plans still envision an expenditure on TMI-2 of about $50 million per year.

We have concluded that this course of action is the best and, indeed, the only one open to us in view of the actions by the NRC and the Pennsylvania Public Utility Commission. We do not believe that the reductions in our efforts in themselves, constitute any direct risk to health and safety. However, we also believe that the interests of public health and safety, our ratepayers, and our investors all would be better served by more promptly establishing acceptable criteria for overall cleanup and in particular, by allowing us to proceed with cleanup of the contaminated water as soon as possible. I note that Dr. Cunningham of DOE expressed similar views in a letter dated August 19, 1980 to Hon. Tom Bevill, Chairman, Subcommittee on Energy and Water Development of the House Committee on Appropriations. I again urge that full consideration be given to means to do that.

We are advising your on-site staff of our detailed plans. However, I consider the significance of this action to be such that I wanted to bring it to your personal attention.

We would, of course, be glad to meet with you to further discuss this matter if you desire.

Very truly yours,

H. Dieckamp

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att

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