



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

January 13, 1986

W. W. Wray
Send to
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MEMORANDUM FOR: William J. Dircks
Executive Director for Operations

FROM: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

SUBJECT: RESEARCH AND DEVELOPMENT RELATED TO THREE MILE ISLAND
UNIT 2 (TMI-2)

I recently learned that the Office of Management and Budget's (OMB) FY 87 passback to the Department of Energy (DOE) has omitted all monies (\$20 Million) targeted for TMI-2 related research and development (R&D). I understand that this is based, in part, on an OMB assumption that all or most of the R&D information of value from TMI-2 will have been obtained before FY 87. On December 19, you received a request from Chairman Palladino on the status of TMI-2 cleanup funding and the potential impact of DOE cuts on the cleanup schedule. A response is scheduled to be sent to the Chairman by 12/27/85 and will be based, in part, on the contents of this memorandum.

As an overview the cleanup is currently at the stage where DOE R&D funding has the greatest potential value for each dollar spent. Specifically, during the removal of the damaged fuel and the decontamination of the facility, the bulk of valuable information should become available. In contrast, much of DOE's funding in earlier years was preparatory and involved designing equipment and techniques required to begin defueling.

The greatest opportunity for obtaining essential information from TMI-2 lies in the planned examination of the damaged core materials. As you are aware the reassessment of accident source terms is in an evolving process of refinement. Most information contributing to this effort has already come from data collected at TMI-2. The information obtained to date, however, comes from a relatively few samples of the damaged core and is a small fraction of the data planned to be collected in the future. Within the reactor vessel, for example, there is no information on the extent of accident damage in a large part of the core directly under the observable debris bed. Plans are currently being made, assuming DOE funding, to obtain core borings (Spring 1986) through the entire length of the core region. Evaluation of these strata samples (FY 87) are planned and should provide the best assessment of the accident's impact on the entire core. The DOE R&D program also contains provisions for future assessments of the location and amounts of fuel and fission products material in various parts of the reactor coolant system and the sludge on the floor of the reactor building basement. Together these studies are designed to provide generic information on accident thermal hydraulic conditions, fission product and fissile material transport during fuel heatup and melt, and the interaction of fuel and core structural materials.

William J. Dircks

-2-

In addition to providing an invaluable source of information related to fuel behavior during an accident, DOE funded R&D could provide a number of other generic benefits. The DOE program plans additional evaluations of the effects of accident environments on mechanical and electrical equipment. Retrieval and testing of several monitors and components including the PORV and the drain tank rupture disc are yet to be undertaken. Although not currently in DOE's program the following may also be included, assuming available funding, within the program at TMI-2; (1) reclamation and storage of unique TMI-2 cleanup systems for future applications, and (2) a full scale decontamination and decommissioning program.

It should be noted that the FY 87 DOE funding of \$20 Million represents the last portion of a total program of \$189 Million at TMI-2. Although the precise effect of the OMB elimination is not clear, it does seem like the wrong time to be cutting back on this work.

Original signed by:

Harold R. Denton, Director
Office of Nuclear Reactor Regulation

cc: R. Minogue

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HR Denton
12/24/85

Island Currents



Published by GPU Nuclear Communications Division for the Employees of Three Mile Island

Vol. VI, No. 54

Ext. 8814

December 3, 1986

A Safe, Stable, Secure TMI-2

GPUN Outlines End of Cleanup Program

GPU Nuclear Corporation has notified the U.S. Nuclear Regulatory Commission (NRC) of plans for completion of the Cleanup Program that will keep Three Mile Island Unit 2 safe, stable and secure.

The company said the plant will be in Post-Defueling Monitored Storage (PDMS) at the end of the Cleanup Program, and will pose no risk to the health or safety of the public, the workers or the environment.

Frank Stunderfer, director of TMI-2, said,

"Many of the cleanup challenges already have been met successfully.

And while today there still is much work to be done, the Cleanup Program is making good progress toward completion. The primary goal of the program has been to establish a safe, stable and secure facility." The Cleanup Program is to be completed in about two years at a cost of about \$1 billion. No decision has been made on disposition of the plant.

During PDMS, a GPU Nuclear staff will maintain and monitor the plant under NRC regulations; radioactive waste will have been removed or readied for shipment; the program for disposal of radioactive water will have been started.

PDMS will feature assured protection of public health and safety as a result of:

— Inherent Stability. Radiological materials, combustibles and water will be removed to the extent that the plant will not be prone to nuclear and industrial accidents.

— Effective Containment. Residual fuel and radioactivity remaining will be isolated from the public and the environment within rugged, protective structures such as the massive reactor containment building. There will be no potential for a nuclear chain reaction.

— Positive Monitoring and Control. Plant conditions will be assessed by a staff. There will be in-plant and environmental monitoring equipment and fire protection systems.

Over the next two years, GPU Nuclear expects to further reduce radiation levels in the plant to permit safe access for workers. Considerable work will be directed toward the basement of the reactor building — now accessible only by remote equipment — in order to establish access. Radiation levels in the upper floors of the reactor building already are under 100 millirems an hour —

(Continued on Page 3)

GPUN Praised For Exceeding Goal

More than 300 officials and canvassers for the Tri-County United Way met at a luncheon in Hershey last week for a final report on the 1986 campaign. The drive raised \$5,551,705 for health and welfare agencies in Dauphin, Perry and Cumberland counties, an increase of 14.6 percent over last year.

GPU Nuclear was singled out and thanked by John Mac Aichele, chairman of the Tri-County United Way campaign and the recently retired chairman of the Milton Hershey School, as one of several companies that "went way over their goal."

GPUN/Mei-Ed employees contributed \$68,515.96 to the Tri-County United Way, exceeding the company's goal of \$58,000 by more than 18 percent. In addition, GPUN made a corporate contribution of \$5,700.

TMI United Way Co-Chairmen

(Continued on Page 4)

TMI-2 POST-DEFUELING MONITORED STORAGE — WHAT'S INVOLVED?

Q. What is Post-Defueling Monitored Storage (PDMS)?

A. PDMS is logical conclusion of the TMI-2 Cleanup Program that will be completed in 1988. It provides for the monitoring and maintaining of the plant in a safe, stable and secure condition.

Q. When will a decision be made on the future of the plant?

A. GPU Nuclear has been focusing entirely on the Cleanup Program and General Public Utilities Corporation has made no decision on the disposition of the plant.

Q. Will radioactivity be left in the plant?

A. Small amounts of radioactivity will remain. The radioactivity will be in stable forms and will be contained mostly within the plant and closed plant systems. The radioactivity poses no threat to the health and safety of the public, the workers or the environment. Radiation in upper levels of the reactor building generally will be less than 100 millirems an hour, compared to 430 millirems an hour early in the cleanup in 1980.

(Continued on Page 2)

D/S

Questions and Answers on PDMS

(Continued from Page 1)

Q. Is any fuel being left?

A. Almost all the fuel will be removed and shipped off site. There will be a small amount of residual fuel. It will not be a hazard to the health and safety of the public, the workers or the environment. The aggregate quantities and configurations will not support a nuclear chain reaction. Further removal of the fuel is not warranted because it would result in substantial exposure of our workers without producing any significant gains in protecting public health and safety.

Q. Will the basement of the reactor building be accessible?

A. Yes. Over the next two years, GPU Nuclear will decontaminate the basement sufficiently to permit access for monitoring activities.

Q. Will radioactive wastes will be left on site?

A. No. Wastes already are being shipped from the site. The U.S. Department of Energy expects to complete rail shipments of debris from the damaged reactor core in two to three years. GPU Nuclear expects to complete shipments of low-level wastes after the Cleanup Program is completed. This waste will include residue left by the disposition of accident-related water at TMI-2 as well as waste from final Cleanup Program activities.

GPU Nuclear

Island Currents

Carol Clawson

Director, Communications

Douglas Bedell

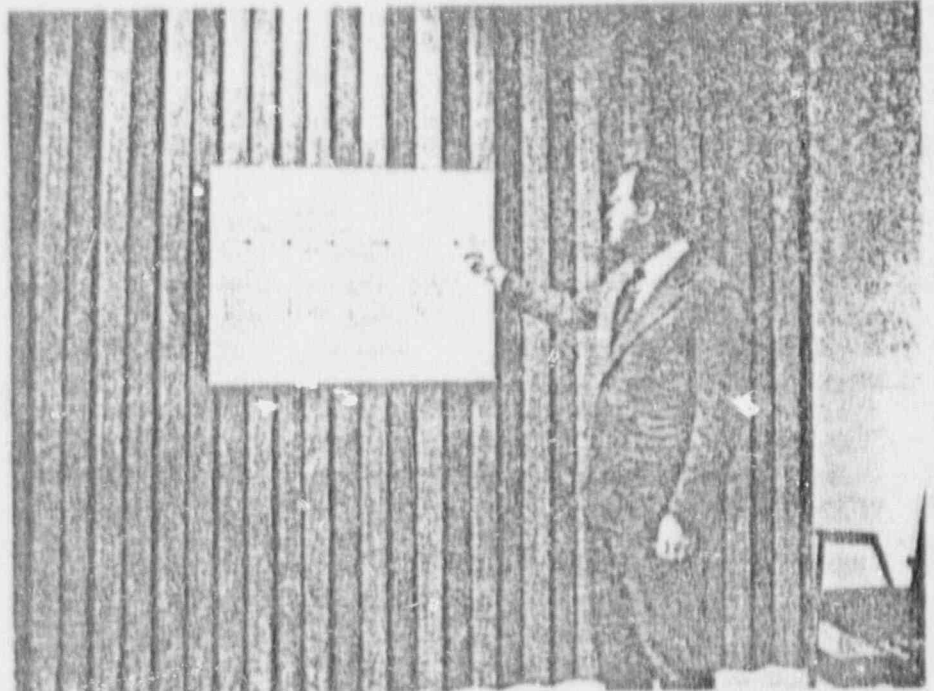
Manager, Public Information, TMI

David Delzingaro, Editor

TMI-2 Adm'n. Building, Room 109

948-8814

Vol. VI, No. 54 -- December 3, 1986



TMI-2 Director Frank Standerfer discusses plans for the end of the cleanup. The chart depicts overall cleanup program strategy and is reprinted on Page 3.

Q. What will be the risk of accidental releases of significant amounts of radiation to the environment?

A. None. There will be no mechanism, such as heat and pressure, to force radioactivity from the plant. In addition, pathways from the plant will be monitored and filtered.

Q. Will the reactor building be isolated from the environment? Will it be vented?

A. The building will be enclosed; that is, pathways to the environment normally will be closed. For reasons of industrial safety, the building will be vented via filtered pathways to permit workers to make periodic entries.

Q. What will be released from the plant? Gases? Water?

A. The releases will be well below permissible regulatory limits, and will be of no consequence to the public or environment. There will be no radioactive gases left for release at TMI-2. Small amounts of water that accumulate from condensation and

storm drainage will be processed periodically and disposed of through normal discharges.

Q. Who is responsible for the plant? How many employees will be assigned to it?

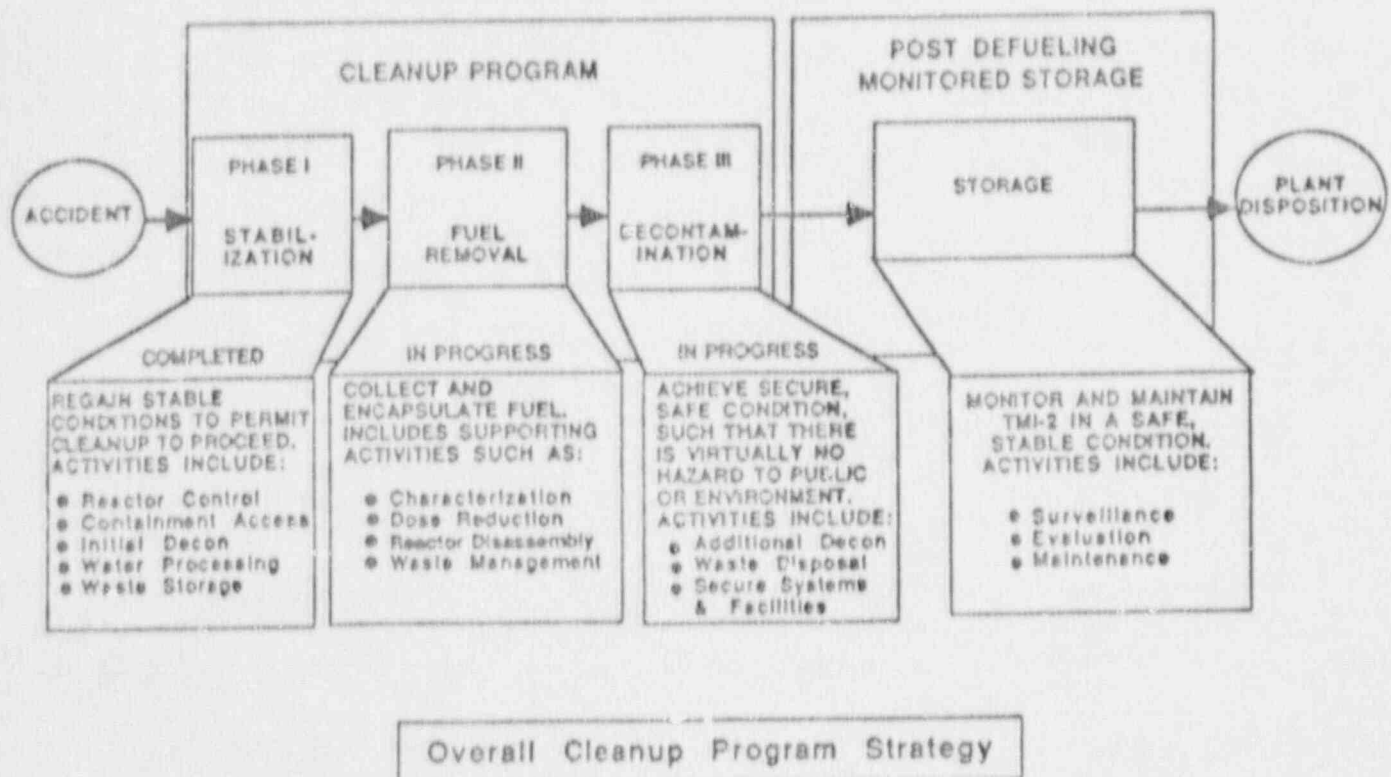
A. GPU Nuclear, as licensee, will provide adequate staff that will monitor and maintain the plant during PDMS in accordance with regulatory requirements. Staffing levels have not been determined.

Q. Who regulates the plant?

A. The NRC. The plant will be licensed and subject to regulations of the NRC. The NRC must approve technical specifications covering requirements for monitoring and maintaining the plant.

Q. What about GPU Nuclear's proposal to evaporate 2.1 million gallons of accident-related water at TMI-2?

A. The proposal to evaporate the accident-related water is before the NRC awaiting approval.



Plans For Cleanup End Reported

(Continued From Page 1)

less than one-sixth of what they were when the building was first entered in 1980 after the accident — permitting ready access by workers. Levels on the defueling work platform are about eight millirems an hour.

Defueling, now underway, will remove about 100 metric tons of damaged fuel and 50 metric tons of damaged internal components, which will be shipped from the site. A small amount of fuel will remain, mostly in enclosed systems, at various locations in the plant. The quantity or configuration will not support a nuclear chain reaction or pose a threat to public health or safety.

Criteria relating to off-site emissions will be substantially lower than the federal limits for operating nuclear plants. Emissions at TMI-2 have been well below these limits during the Cleanup Program, and the potential for significant plant emissions is expected to be even less after the Cleanup Program is completed. GPU Nuclear said that PDMS would ultimately reduce overall worker exposures by allowing time for:

— Additional reduction of radiation levels in the plant through natural decay of radioactive materials. Levels could be reduced by as much as one-half.

— Continued development of decontamination technology, including advanced robotics and waste treatment methods and automatic cleaning and chemical cleaning techniques.

— Resolution of current limitations on national waste disposal capabilities so that selection of processes may be less dependent on waste volume reduction.

Drafting Kits Being Offered For Sale By Training Department

Drafting kits used by employees participating in the Bachelor of Science in Mechanical Engineering program at the Training Center are being offered for sale by bid. Since this is a \$100 value, there is a minimum bid of \$25 on each kit.

Each kit consists of the following materials: 18" x 24" drawing board; 6 sheets of 15" x 22" drawing paper; drawing instrument set; 24" clear, plastic edged, maple T-square; architect's triangular square; ruler; 10" 300-degree x 60-degree and 8" 45-degree triangles; semi-circular plastic protractor; French curve; Dietzgen Drafting Dotz (tape); 2H and 4H pencils; pink pliable eraser; artgum eraser; sandpaper pencil pointer pad; letter guide, and 3/4-ounce bottle of black ink.

Only 22 kits are available. Anyone interested in purchasing one of the kits is asked to contact Nancy Florey, Ext. 8471, for more information.

Status
 Report Line
 Dial 8-8-8-8

'Monitored storage'

If TMI 2 won't reopen, decommission it

IT STRIKES US as odd that more than six years after the accident at Three Mile Island, General Public Utilities, owner of the plant, not only hasn't decided what it ultimately plans to do with the damaged facility, it also claims it has yet to even consider the question.

GPU Nuclear, which operates TMI, recently announced it plans to put Unit 2 in a "monitored-storage" mode for an indefinite period after the \$1 billion cleanup is completed, expected to be around September 1988. The proposal is subject to the approval of the Nuclear Regulatory Commission.

Another question neither GPU nor the NRC seems to have an answer to is whether, given the physical damage and lingering radioactive contamination to Unit 2's nuclear component, it is *technically* feasible to restore the unit to operational status. Of course, a decision to reoperate Unit 2 also will be influenced by economics and the ability of the plant to be relicensed. But it seems to us the first question to be answered, the one on which all other questions depend, is whether the nuclear side of Unit 2 can ever be operated again.

If the answer to that question is no, then it is time to begin planning for the decommissioning of Unit 2 and dealing with the radioactive remains on a more-permanent basis. Monitored storage, while it probably

offers certain benefits in terms of cost and technical simplicity, may not be an acceptable long-term solution. Alternatives, such as dismantling and entombment, also have drawbacks but once completed would provide more protection for the public.

IN EVALUATING GPU's proposal to place Unit 2 in a monitored-storage mode, the NRC should review the issue in terms of the ultimate fate of the facility. It should insist that GPU address and answer these questions:

- Is putting Unit 2 back in operation technically feasible?
- If yes, when does the company plan to make a final determination whether to repair the unit or not?
- If no, what approach does the company plan to take in decommissioning the plant and disposing of it?

Certainly after six years, GPU should be in a position to answer these questions or, at least, give an intelligent response why it cannot answer these questions now and when it will. And once GPU has made its presentation on the fate of Unit 2, the NRC should hold hearings in the Harrisburg area to provide the public with ample opportunity to make comments and ask questions, all of which should be taken into account by the NRC in arriving at its decision.

APR 20 1980

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 OLynch

Mr. Robert H. Bauer
 Department of Energy
 Chicago Operations Office
 9700 South Cass Avenue
 Argonne, Illinois 60439

Dear Mr. Bauer:

This letter provides additional authorization to Argonne National Laboratory (ANL) to perform the work outlined below in FY 80. Initial funding was provided in my letter to you dated November 14, 1979 in the amount of \$1,000,000 under FIH No. A-2001, B&R No. 20-19-05-01, and appropriation symbol 31X0200.200. Additional obligations of \$400,000 and \$600,000 were made on January 7, 1980 and March 10, 1980 respectively. This letter provides an additional obligations of \$150,000 and is effective immediately. It is a part of the additional funding needed to accelerate the preparation of the environmental impact statement relating to TMI-2 cleanup. This acceleration calls for DES publication on June 13, 1980 and FES publication on September 19, 1980. The total authorization to ANL in this technical assistance program is now \$2,150,000.

The objective of this technical assistance is to provide laboratory support for the preparation of environmental impact statements associated with the licensing of nuclear power plants and a programmatic impact statement related to TMI-2 cleanup. Specific task areas were outlined in my letter of March 10, 1980. This additional funding of \$150,000 is to be spent to accelerate the schedule of the work associated with the TMI-2 statement.

Due to a recent change in responsibilities, the principal Nuclear Regulatory Commission contact for this program is now Dr. Bernard J. Snyder, Program Director, TMI Program Office, Nuclear Reactor Regulation.

Sincerely,

Original signed by
 Daniel R. Muller

Daniel R. Muller, Acting Director
 Division of Site Safety and
 Environmental Analysis
 Office of Nuclear Reactor Regulation

Enclosure:
 Standard Order for
 DOE Work

*See Previous Concurrence

| | | | | | | |
|---------|----------------|---------|-----------|-----------------------------------|--------------------|----------------|
| OFFICE | DSE:EP* | DSE:EP* | DSE* | NRR* | DSE | TMI/PO |
| SURNAME | SSB DESells | VHRegan | CPoslusny | PTriplett FMiraglia HBerkow | DWeller 4/25/80 | BJS 4/24/80 |
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 Department of Energy
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 9700 South Cass Avenue
 Argonne, Illinois 60439

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The principal Nuclear Regulatory Commission contact for this program is Wm. H. Regan, Jr., Acting Assistant Director for Environmental Projects. However, a recent reorganization of the Office of Nuclear Reactor Regulation will realign the responsibilities for the supervision of the TMI-2 work. As a result, you will be provided additional information and guidance with regard to the allocation of this authorization and the principle NRC contacts in the near future.

Sincerely,

Daniel R. Muller, Acting Director
 Division of Site Safety and
 Environmental Analysis

Enclosure:
 Standard Order for
 DOE Work

M. Duvigneau
4/14/80

TMI
 BSnyder
 4/ /80

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| OFFICE | DSE:EP-2 | DSE:EP | DSE | NRR | NRR | DSE |
| SURNAME | SSB&I/DOE DES011 | WHRegan | CPoslusny | PTriplett | FMiraaglia HBerkow | DRMuller |
| DATE | 4/11/80 | 4/14/80 | 4/15/80 | 4/15/80 | 4/16/80 | 4/ /80 |

NRC FORM 173
(2-78)

U.S. NUCLEAR REGULATORY COMMISSION

ORDER NUMBER
20-80-185

STANDARD ORDER FOR DOE WORK

DATE
April 17, 1980

ISSUED TO: (DOE Office)
Chicago Operations Office
PERFORMING ORGANIZATION AND LOCATION
Argonne National Laboratory

ISSUED BY: (NRC Office)
Division of Site Safety and
Environmental Analysis
Off. of Nuclear Reactor Reg.

ACCOUNTING CITATION
APPROPRIATION SYMBOL
31X0200.200
SER NUMBER
20-19-05-01
FIN NUMBER
A-2001-0

FIN TITLE
Environmental Assistance (TMI-Cleanup)

WORK PERIOD - THIS ORDER
FIXED ESTIMATED
FROM 10/1/79 TO 9/30-80

OBLIGATION AVAILABILITY PROVIDED BY:

| | |
|--|--------------|
| A. THIS ORDER | \$ 150,000 |
| B. TOTAL OF ORDERS PLACED PRIOR TO THIS DATE WITH THE PERFORMING ORGANIZATION UNDER THE SAME "APPROPRIATION SYMBOL" AND THE FIRST FOUR DIGITS OF THE "SER NUMBER" CITED ABOVE. | \$ 4,835,000 |
| C. TOTAL ORDERS TO DATE (TOTAL A & B) | \$ 4,985,000 |
| D. AMOUNT INCLUDED IN "C" APPLICABLE TO THE "FIN NUMBER" CITED IN THIS ORDER. | \$ 2,150,000 |

FINANCIAL FLEXIBILITY:
 FUNDS WILL NOT BE REPROGRAMMED BETWEEN FINs. LINE D CONSTITUTES A LIMITATION ON OBLIGATIONS AUTHORIZED.
 FUNDS MAY BE REPROGRAMMED NOT TO EXCEED 10% OF FIN LEVEL UP TO \$50K. LINE C CONSTITUTES A LIMITATION ON OBLIGATIONS AUTHORIZED.

STANDARD TERMS AND CONDITIONS PROVIDED DOE ARE CONSIDERED PART OF THIS ORDER UNLESS OTHERWISE NOTED.

ATTACHMENTS:
THE FOLLOWING ATTACHMENTS ARE HEREBY MADE A PART OF THIS ORDER:
 STATEMENT OF WORK
 ADDITIONAL TERMS AND CONDITIONS
 OTHER

SECURITY:
 WORK ON THIS ORDER IS NOT CLASSIFIED.
 WORK ON THIS ORDER INVOLVES CLASSIFIED INFORMATION. NRC FORM 187 IS ATTACHED.

REMARKS:
-Please sign this form and return*, to indicate acceptance of this work.
-These funds are to remain available for use on Contractor until expended or subsequent guidance agreed upon program by the DOE Form 173. provided by a mutually acceptable
-Monthly progress reports are required for this program.
-Allocations for specific tasks will be made by direct correspondence from the Acting Assistant Director for Environmental Projects.
*After signature, please return this order to Paulette Triplett, Fiscal, Assistant, NRR P-422

| | | | |
|---|-----------|------------------------|--|
| ISSUING AUTHORITY | | ACCEPTING ORGANIZATION | |
| SIGNATURE M. Paulette Triplett <i>M. Paulette Triplett</i> | SIGNATURE | | |
| TITLE Fiscal/Trg. Assist. NRR 4/18/80 | TITLE | | |
| | DATE | | |

NRC FORM 173 (2-78)
8007230457

MAY 01 1980

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MEMORANDUM FOR: Harold R. Denton, Director
Office of Nuclear Reactor Regulation
FROM: Daniel R. Muller, Assistant Director for Environmental
Technology, Division of Engineering
THRU: Richard H. Vollmer, Director,
Division of Engineering
SUBJECT: FUNDING FOR ENVIRONMENTAL REVIEWS AT ANL

This memorandum provides a summary of the status of funding for environmental reviews at ANL and provides recommendations for funding for the remainder of FY 80 to continue the TMI cleanup and recovery PEIS and to start some casework reviews so as to assure that the environmental effort will not delay eventual fuel loading. Within the current authorization of \$2.15 million at ANL, \$400,000 is allocated for casework and \$1.75 million for the TMI-2 PEIS. Based on an accelerated schedule that has been directed by the Commission, the TMI-2 PEIS will cost \$1.8 million in FY 80. Therefore, an additional \$50,000 is needed to complete the task. Enclosure 1 outlines past funding actions taken in FY 80 with respect to the ANL effort.

In December 1979, we decreased the casework at ANL in order to support the TMI-2 effort. This resulted in all active case reviews being halted at various stages in the review. At this time ANL has spent \$572,000 on casework, leaving \$172,000 of casework account in deficits.

We have reviewed the projected fuel load dates of the near term OL cases and have worked back to when ANL environmental work should start in order to keep environmental work off the critical path. Enclosure 2 summarizes the results of this analysis.

The total of 38 mn of ANL effort (shown on enclosure 2) would equal about... \$250,000.

The FY 80 casework budget has been trimmed as much as possible since all acceptance reviews for tendered and anticipated applications are deferred until FY 81 and no hearing preparation or hearing participation has been scheduled in the FY 80 budget.

I recommend that we direct ANL to start the environmental reviews of the cases listed in enclosure 2 and allocate an additional \$422,000 for casework.

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MAY 01 1980

Harold R. Denton

- 2 -

In addition, in view of the casework picture, \$50,000 of additional funds will be needed to complete the TMI-2 PEIS.

As is evident by this memorandum, the funding of AIL if FY 80 for environmental reviews has been fragmented by allocating funds piecemeal over the fiscal year. We are fortunate that AIL has been able to accommodate this mode of operation because lower priority work from other Federal agencies has been available to take up the slack and the other agencies were willing to accommodate. In the forthcoming fiscal year, I believe it is imperative and thus I recommend that we realistically review our projected workload and allocate early in the fiscal year all funds needed to complete the projected work. This will help assure the continued availability of lab people with the proper skills and technical qualification and will help assure environmental effort that is of continued high technical quality.

I will be happy to discuss this matter with you if you so desire.

Original signed by
Daniel R. Muller

Daniel R. Muller, Assistant Director
for Environmental Technology
Division of Engineering

Enclosures:

1. AIL Program Support
2. Analysis of ANL
Environmental Work

- cc: H. Berkow
F. Miraglia
B. Snyder
W. Regan
R. Ballard
P. Leech
B. Hallett
J. Opelka
R. Vollmer
R. Purple
D. Eisenhut

| | | | | | | |
|---------|---------|--------|---------|------------|--|--|
| OFFICE | DE:SAB- | SAB | ADET | DDE | | |
| SURNAME | SBAjwa | WRegan | DMuller | RH Vollmer | | |
| DATE | 5/1/80 | 5/1/80 | 5/1/80 | 5/1/80 | | |

ANL PROGRAM SUPPORT

| Fin No. A-2001 | Casework | TMI | Date |
|-------------------------------|-------------------------|----------------|-----------------------------|
| Funding Authorization | | | |
| 1,000,000 | | | Nov. 14, 1979 |
| Reprogramming | 400,000 | 600,000 | Feb. 20, 1980 ^{1/} |
| 400,000 | | 400,000 | Jan. 7, 1979 |
| <u>600,000</u> | | <u>600,000</u> | Mar. 10, 1980 |
| 2,000,000 | 400,000 | 1,600,000 | |
| <hr/> | | | |
| Accelerated TMI | | 1,600,000 | Mar. 18, 1980 ^{2/} |
| <u>150,000</u> | | <u>150,000</u> | April 28, 1980 |
| 2,150,000 | 400,000 | 1,750,000 | |
| Expenditures as of 4/30/80 | 572,000 | 700,000 | |
| Funds available for FY 80 | <172,000> ^{3/} | 1,050,000 | |
| Additional funds needed | 422,000 ^{4/} | 50,000 | |
| Total for FY 80 | 822,000 | 1,800,000 | |

^{1/} Memo from Muller to Denton.

^{2/} Acknowledges ANL costs for PEIS of 1,800,000 for FY 80 and \$200,000

^{3/} As of April 30, ANL has spent \$572,000 leaving a deficit of \$172,000

^{4/} Reflects \$250,000 to start NTOL work plus \$172,000 to cover the deficit.

March 16, 1988

Docket No. 50-320

MEMORANDUM FOR: Michael T. Masnik, Technical Assistant
TMI-2 Cleanup PD, NRR

FROM: James C. Petersen, Senior Financial Policy Analyst
Policy Development and Financial Evaluation Section
Policy Development and Technical Support Branch, NRR

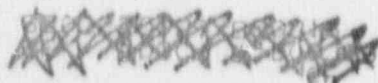
SUBJECT: TMI-2 CLEANUP SPENDING AND SOURCES OF FUNDS

Enclosed are GPU's updated spending and sources of funds projections for the remainder of TMI-2 cleanup. Also enclosed are the underlying assumptions to these projections and GPU's discussion of funding for eventual decommissioning of the unit.

I have independently verified the sources of funds with the States of New Jersey and Pennsylvania and with the Edison Electric Institute. As stated by GPU, all sources are firmly committed for the remainder of the cleanup; there are no known shortfalls. GPU's treasurer also told me that the company could fund a cost overrun (which is not now foreseen) caused by a reasonable delay in cleanup. It would use its own internally generated funds (revenues) and additional external financing. This financial flexibility is due to GPU's greatly improved financial condition since the several years following the accident.

Please contact me on 492-1265 if there are questions.

¹⁵¹
James C. Petersen, Senior Financial Policy Analyst
Policy Development and Financial Evaluation Section
Policy Development and Technical Support Branch, NRR



Enclosures:
As stated

cc: W. Travers, NRR w/encls.

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PROJECTED TMI-2 EXPENDITURES AND SOURCES OF FUNDS
(\$ MILLIONS)

| | ACTUAL | PROJECTED | | | TOTAL |
|-----------------------------|---------|----------------------|-------------------------|---------------------|-------------------|
| | Pre-'88 | 1988 | 1989 | Post-1989 | |
| <u>EXPENDITURES</u> | \$ 839 | \$ 91 ⁽¹⁾ | \$ 35 ⁽²⁾⁽³⁾ | \$ - ⁽³⁾ | \$ 965 |
| <u>Sources of Funds</u> | | | | | |
| GPU Customers | \$ 210 | \$ 34 | \$ 7 | \$ - | \$ 251 |
| GPU | 72 | 5 | 5 | 19 ⁽⁴⁾ | 101 |
| Subtotal | \$ 282 | \$ 39 | \$ 12 | \$ 19 | \$ 352 |
| States | \$ 34 | \$ 7 | \$ - | \$ - | \$ 41 |
| Insurance | 306 | - | - | - | 306 |
| USDOE | 74 | 4 | - | - | 78 ⁽⁵⁾ |
| Industry: EEI | 77 | 23 | 24 | 29 | 153 |
| Japan | 12 | 3 | 3 | - | 18 |
| Subtotal | \$ 89 | \$ 26 | \$ 27 | \$ 29 | \$ 171 |
| Total | \$ 785 | \$ 76 | \$ 39 | \$ 48 | \$ 948 |
| Cumulative Company Advances | \$ 54 | \$ 69 | \$ 65 | \$ 17 | \$ 17 |

- Notes: (1) Spending budgeted for 1988 is \$98, allowing a contingency of \$7 which may be used in 1988, 1989 or later depending on fuel removal progress and final cleanup end point definition and approval.
- (2) The 1989 project work plan includes \$20 for known cleanup work during the first five months, with \$15 remaining as project reserve for contingencies.
- (3) Annual O&M costs for post-defueling monitored storage ("PDMS") of about \$10 in the last seven months of 1989 and \$5 each year thereafter are expected to be required.
- (4) B&W lawsuit settlement rebates of \$2 and amortization of permanent TMI-2 facilities of \$17 will be collected after completion of cleanup.
- (5) DOE had been expected to provide \$83 total funding. DOE's current planning supports \$78.

2/19/88

Inter-Office Memorandum

Subject: TH1-2 CLEANUP FUNDING



From: M. P. Morrell

Location: Headquarters

To: P. R. Clark
H. M. Dieckamp
F. A. Donofrio
J. C. Graham
E. E. Kintner
W. C. Kuhns

Date: February 25, 1988

The attached updated and revised cleanup funding table is forwarded for your review. The changes from last year's table include:

1. Actual 1987 costs and funding are incorporated.
2. Revised spending plans for 1988 and 1989 are incorporated and footnotes (1) and (2) are revised to reflect the spending and contingency planning.
3. PDMS costs of \$10 million in 1989, with \$5 million annually thereafter, are disclosed in footnote (3).
4. Total B&W rebate receipts (included in the GPU line) are reduced from \$15 million to about \$10.5 million based on GPUN's latest projection of the amounts likely to be forthcoming as rebates. Footnote (4) has been revised to reflect this.
5. Interest earned has increased customer contributions by about \$2 million.
6. The pattern of receipt (but not the total) of EEI funds has been changed to reflect lower than forecast EPRI dues diversion. To ensure eventual receipt of \$150 million from this source, a revised payment schedule for 1989 and 1990 will have to be negotiated with EEI, EPRI and the PA/NJ utilities' CEO's.
7. DOE funding has been reduced from \$79 million to \$78 million to reflect the latest (and last for TH1-2) DOE authorization, and footnote (5) has been revised to reflect this.

The end result of these changes is an increase in the final advances number from \$14 million to \$17 million.

Please give me any comments you may have on this revised table. We should agree on this table before GPUN's March 17 meeting with MRC.

A handwritten signature in cursive script that reads "M. P. Morrell".

M. P. Morrell

KPM/ess

cc: D. W. Myers

TM1-2 LICENSING FACT SHEET

TITLE: DECOMMISSIONING

LICENSING ISSUE: To assess the impact of the proposed decommissioning rulemaking on TM1-2 and the implications of a decision to decommission in lieu of PDMS.

STATUS:

- Decommissioning rulemaking has undergone public comment and publication of the "final rule" is expected in early 1988.
- By GPUN letter to the NRC, dated September 30, 1986, GPUN opined "that TM1-2 should not be subject to the provisions of the proposed rulemaking until a decision is made concerning the disposition of the plant."

EXPECTED OUTCOME: Rulemaking to be approved. Specific requirement for funding certification to be included. Decommissioning planning guidance to follow by NUREG.

SIGNIFICANT IMPLICATIONS:

1. A commitment to decommissioning will require compliance with the proposed rulemaking which will include:
 - a. Assurance of funding for decommissioning by certification within two years of rulemaking. Funding in amount exceeding \$100M proposed with annual-escalation clause.
 - b. Submission of a decommissioning plan within two years of effective date of rulemaking.
 - c. Submittal of a site-specific environmental assessment.

TMI-2 LICENSING FACT SHEET

TITLE: TECHNICAL SPECIFICATION CHANGE REQUEST NO. 53

LICENSING ISSUE: To provide a logical transition from the current license conditions to Post Defueling Monitored Storage based on a phased revision of the Technical Specifications as major cleanup milestones are accomplished.

STATUS: Pending NRC approval. Anticipate publication of notice of license change request in the Federal Register on January 14, 1988, as a No Significant Hazards Consideration (i.e., no opportunity for prior hearing). Thirty (30) day public comment period follows.

EXPECTED OUTCOME: NRC approval in February 1988 subsequent to public comment period.

SIGNIFICANT IMPLICATIONS: Red fines applicability of TMI-2 Technical Specifications in terms of three (?) modes with major revisions as follows:

Mode 1 - Current Status - Delete Technical Specification 6.8.2 requirement for NRC in-line review and approval of operational procedures except AGW disposal.

Mode 2 - End of Defueling - Delete requirements associated with "fueled" reactor (e.g., elimination of requirement for NRC licensed operators). Significant staff and resource commitment reductions result.

Mode 3 - Core Debris Shipping Complete - Delete requirements for Spent Fuel Storage. Facilitates final cleanup and transition to PDMS. Staff commitment equivalent to PDMS. Viewed as "low cost" holding status, if required, awaiting PDMS approval.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1987 GPU

Draft

General Public Utilities Corporation (the Corporation) is a holding company registered under the Public Utility Holding Company Act of 1935. The Corporation does not operate any utility properties directly, but owns all the outstanding common stock of three electric utilities, Jersey Central Power & Light Company (JCP&L), Metropolitan Edison Company (Met-Ed) and Pennsylvania Electric Company (Penelec) (the subsidiaries). The Corporation also owns all the stock of GPU Service Corporation (GPUSC), a service company, and GPU Nuclear Corporation (GPUN), which operates and maintains the nuclear units of the subsidiaries. All of these Companies considered together are referred to as the "GPU System."

1. COMMITMENTS AND CONTINGENCIES

(a) NUCLEAR FACILITIES

The subsidiaries have made investments in four major nuclear projects — Three Mile Island generating station Unit No. 2 (TMI-2), which is now being defueled following the March 28, 1979 nuclear accident, Three Mile Island generating station Unit No. 1 (TMI-1) and the Oyster Creek generating station, both of which are operational facilities, and the cancelled Forked River project, all of which are discussed below. TMI-1 and TMI-2 are jointly owned by JCP&L, Met-Ed and Penelec in the percentages of 25%, 50% and 25%, respectively. Oyster Creek and Forked River are owned by JCP&L. Saxton Nuclear Experimental Corporation (Saxton), the common stock of which is owned by the subsidiaries, owns a small demonstration reactor which was removed from service in 1972.

In recent years, the operating costs and capital requirements for nuclear plants have been increasing and are becoming less predictable, in large part due to changing regulatory requirements and safety standards and the experience gained in the construction and operation of nuclear facilities. As this has occurred, the ability of electric utilities to obtain adequate and timely recovery of their investments in nuclear projects has become more uncertain. Similarly, the recovery of the carrying costs associated with investments in nuclear facilities, their operating and maintenance expenses, and the costs of any needed replacement power has become increasingly subject to question. In

addition, for economic or other reasons, operation of these plants for the full term of their now assumed lives cannot be assured. The subsidiaries are not collecting revenues for the decommissioning of TMI-2 and do not believe that the current level of revenues being collected for the decommissioning of their other nuclear plants will be adequate to cover actual future costs. It is management's intent to seek to recover the costs described above in rate proceedings, however, their recovery cannot be assured.

(b) TMI-2

The TMI-2 accident resulted in significant damage to the TMI-2 system and components, contamination of major portions of the plant and a release of radioactivity to the environment, which published reports of governmental agencies indicated did not constitute a significant public health or safety hazard.

Accident Cleanup: The Company's program (and estimate of cost) for the cleanup of TMI-2 does not include the costs of either Post-Defueling Monitored Storage (PDM) or Decommissioning. Cleanup efforts at TMI-2 continue to progress and, except for the disposal of the processed water remaining on site as a result of the accident and cleanup program, are expected to be completed in 1989 at a cost of approximately \$1 billion. The Nuclear Regulatory Commission (NRC) has scheduled public hearings regarding the disposal of the water. The cleanup cost is subject to continuing uncertainties, including (a) regulatory requirements, (b) the full scope of the technical challenges in decontaminating the facility, (c) the resolution of criteria for maintaining the plant pending its ultimate disposition and (d) the effect of government actions on the issue of waste disposal.

As of December 31, 1987, \$839 million has been spent on the cleanup. The subsidiaries have arranged for funding the remaining cleanup costs, some of which is dependent on voluntary contributions or annual authorizations, as follows:

(In Millions)

| | |
|---|-------|
| Customers | \$ 39 |
| Federal government | 11 |
| Investor-owned utilities and other | 62 |
| Total | 112 |
| Advances to be provided by the subsidiaries | 49 |
| Remaining estimated costs | \$161 |

Upon completion of the cleanup program, CPUN intends to implement a PDMS plan. Under this plan, which is subject to approval by the NRC, radioactive materials would be largely removed and conditions would be established to maintain a safe, stable and secure facility. The PDMS plan contemplates costs of approximately \$10 million in 1989 and annual costs of \$5 million thereafter.

Management believes that any costs incurred by the subsidiaries associated with the cleanup, for which they do not receive financial assistance or reimbursement from others, should be recoverable through the ratemaking process. Management further believes that costs associated with PDMS and the eventual decommissioning of TMI-2 should also be recoverable through the ratemaking process.

Repair and Restoration of TMI-2: The subsidiaries' present energy supply plans do not reflect the restoration to service of TMI-2 and no funds are presently being expended to preserve the plant or equipment for future use. Retirement of TMI-2 would require prior regulatory authorization; no application for such authorization has been submitted.

Accounting for the Investment in TMI-2: The Pennsylvania Public Utility Commission (PaPUC) and the New Jersey Board of Public Utilities (NJBPUB) have authorized revenues for amortization of the subsidiaries' investments in TMI-2. Met-Ed and Penelec are presently collecting annual revenues of approximately \$25 million and \$12 million, respectively, which will be sufficient to recover their remaining investments over the next six years. The NJBPUB has authorized JCP&L to recover its investment over an 18-year period beginning in 1989. The PaPUC and the NJBPUB have not provided revenues for a return on the investment in TMI-2 and, accordingly, the investment is recorded at its discounted present value. (See Note 3.)

Investigations: Investigations and inquiries concerning the nature, causes and consequences of the TMI-2 accident have generally been completed but continue to provide a potential for further uncertainties. The NRC has stated that, depending upon the findings of continuing investigations, it may take additional enforcement action with respect to the TMI-2 accident and its aftermath.

Litigation and Claims: As a result of the accident and its aftermath, claims, which are

material in amount, have been asserted against the Corporation, its subsidiaries and certain of their officers and directors. The claims include individual claims as well as purported and actual class actions for alleged personal injury and property damage (including claims for punitive damages) resulting from the accident. Some of the claims also request damages for injuries from alleged emissions of radioactivity before and after the accident.

Questions have not yet been resolved as to whether certain of these claims are (a) subject to the limitation of liability set by the Price-Anderson Act and (b) outside the insurance coverage provided pursuant to the Price-Anderson Act. In a 1985 decision, which was later reversed on jurisdictional grounds, a U.S. District Court held that punitive damages are available in actions under the Price-Anderson Act.

In 1985, the Corporation's insurance carriers settled 282 personal injury claims for an aggregate of \$14.3 million. Additional complaints have been filed against the Corporation and its subsidiaries on behalf of over 2,100 plaintiffs claiming personal injuries (including claims for punitive damages) as a result of the TMI-2 accident and its aftermath. The insurance carriers have assumed the defense of these actions, substantially all of which are pending in the Pennsylvania Court of Common Pleas. Plaintiffs have appealed a decision dismissing a number of claims on the grounds they are barred by the statute of limitations. An initial trial of twelve cases has been postponed pending the outcome of the appeal.

TMI-1

At December 31, 1987, the subsidiaries' total investment in TMI-1, net of depreciation, was \$511 million along with \$54 million of nuclear fuel net of amortization.

Cracks in the steam generator tubes, which were first discovered in 1981, have been extensively repaired. While management believes the cause of the 1981 cracking has been identified and arrested, it remains possible that other steam generator problems may occur. In addition, some of the tubes have been plugged and removed from service; however, they do not limit TMI-1's power output.

The plant's output may periodically be restricted due to flow interference from mineral deposits, which typically accumulate in reactor plants such as that at TMI-1 in the secondary,

non-nuclear side of the unit's steam generators. Steps to reduce this possibility are planned for the next refueling outage which is tentatively scheduled for the third quarter of 1986. The deposits may, however, temporarily limit future operation of the plant. If the problem persists, further removal of the deposits or other corrective action may be required.

Oyster Creek

At December 31, 1987, JCP&L's total investment in the Oyster Creek nuclear generating station, net of depreciation, was \$531 million along with \$98 million of nuclear fuel, net of amortization.

Certain 1983-84 outage-related costs have been deferred. JCP&L is collecting revenues to recover these costs (without a return on the unamortized balance) over a period of 10 years pursuant to a 1986 rate order. At December 31, 1987, the unamortized balance of these deferred costs was \$52 million.

In January 1988, the NJBPU approved a settlement of issues raised in the NJBPU's review of certain outage-related costs incurred by JCP&L during 1983-84 and 1986 outages of the Oyster Creek plant. Pursuant to the settlement agreement, in December 1987, JCP&L wrote off \$3 million of deferred costs incurred during the 1983-84 outage, and will defer the recovery of \$25 million of replacement power costs. These deferred costs will then be recovered (without a return on the unamortized balance) over a ten-year period beginning in 1989.

During 1986, inspections of the steel shell that houses the reactor vessel indicated that a portion of the shell's wall is thinner than expected. Tests indicate that, although some corrosion has occurred, the wall meets design requirements and the plant is safe to operate. After a review by the NRC, the plant was restarted in December 1986. Management believes that installation of a protective system, scheduled for completion in 1988, together with continuing efforts to prevent water leakage into the corroded region, will retard further corrosion. A plan to monitor the corrosion rate is in place and if corrosion persists to the point that the shell can no longer satisfy its intended safety functions, the plant would have to be shut-down in order to make structural repairs to the shell.

In September 1987, while the plant was shut-down for maintenance, a violation of a safety related technical specification occurred. Findings of an independent investigation, commissioned by CPUN, concluded that one or more members of the control room shift on duty acted improperly, but that management personnel acted promptly to investigate and report the violation. In November, with NRC authorization, the plant was restarted. Investigations by CPUN and the NRC concerning the incident are continuing.

Forked River

NJBPU rate orders permit JCP&L to recover its remaining investment in the abandoned Forked River nuclear project. JCP&L is presently collecting annual revenues for amortization of approximately \$12 million which will be sufficient to recover its investment by the year 2006. The NJBPU has not provided revenues for a return on the investment and, accordingly, the investment is recorded at its discounted present value. (See Note 3.)

NUCLEAR PLANT DECOMMISSIONING COSTS

The subsidiaries, in accordance with rate determinations, are charging to expense and either crediting to reserves or funding amounts intended to provide for the cost of decommissioning the TMI-1 and Oyster Creek nuclear plants over their remaining service lives. The subsidiaries are not collecting revenues for the decommissioning of TMI-2, the costs of which are expected to be substantial.

As previously noted, management believes that costs associated with PDMS and the eventual decommissioning of TMI-2 should be recoverable through the ratemaking process. However, the issue of collecting TMI-2 decommissioning costs has not as yet been presented to the PaPUC.

In August 1987, the five year period for charges to JCP&L customers for previously authorized TMI-2 cleanup expenses was scheduled to terminate and, correspondingly, the charges to JCP&L customers to be reduced by approximately \$13.6 million annually. JCP&L suggested to the NJBPU that it might find it appropriate under these circumstances to moderate that reduction by allowing the initiation of recovery from customers of JCP&L's share of TMI-2 decommissioning costs in

the amount of \$1.8 million. In an August 1987 Order, the NJBPU rejected that suggestion, stating that, while its policy has been to allow utilities to recover the costs of decommissioning nuclear plants as a part of the cost of service borne by ratepayer, such policy has been implemented only in a fully litigated base rate proceeding. The NJBPU order also stated that it would, therefore, be inappropriate to grant the JCP&L request at that time, but that the next JCP&L base rate proceeding would provide the appropriate forum for determining the total estimated reasonable costs of decommissioning TMI-2 and the appropriate collection mechanism and period.

In a 1985 proposed rulemaking, the NRC assumed that, in the absence of a site-specific study, an amount of \$100 million per plant, in 1984 dollars, would be required to fund decommissioning costs. If the NRC rule becomes effective, the subsidiaries would have to fund decommissioning costs of \$100 million (in 1984 dollars) per plant unless site-specific studies determine otherwise.

Even though the subsidiaries have requested revenues for decommissioning based on the proposed NRC rule requirement, they have been granted revenues based on lower estimates proposed by other participants in these rate proceedings. JCP&L is collecting revenues for decommissioning Oyster Creek based on an estimated cost of \$56.2 million, assuming in-place entombment. JCP&L is collecting revenues based on its share (\$13 million) of an estimated \$60 million cost to decommission TMI-1, assuming in-place entombment. Met-Ed and Penelec are collecting revenues based on their shares (\$19 million and \$9 million, respectively) of an estimated \$28 million cost to decommission TMI-1, assuming dismantlement. The revenue levels for Met-Ed and Penelec are based on the cost of decommissioning only the radioactive components of TMI-1. The subsidiaries are collecting revenues for decommissioning Saxton based upon a total estimated cost of \$9.2 million. A site-specific study estimates a cost of approximately \$13 million for Saxton.

The subsidiaries expect that the current level of revenues being collected for nuclear plant decommissioning expense will not be adequate to cover actual future costs. The subsidiaries believe that additional expenditures above the levels currently being collected should be recoverable through the ratemaking process.

■ NUCLEAR FUEL DISPOSAL FEE

The subsidiaries are providing for estimated future disposal costs for spent nuclear fuel at Oyster Creek and TMI-1 in accordance with the Nuclear Waste Policy Act of 1982. The subsidiaries entered into contracts in 1983 with the U.S. Department of Energy (DOE) for the disposal of spent nuclear fuel. The total liability including interest at December 31, 1987, all of which relates to spent nuclear fuel from nuclear generation through April 6, 1983, amounts to \$103 million. As the actual liability under these contracts is substantially in excess of the amount recovered to date from ratepayers, the subsidiaries have reflected such excess of \$53 million at December 31, 1987 as deferred costs. The rates presently charged to customers recognize these levels of costs, plus interest, and provide for collection over eight years for Met-Ed and Penelec and fourteen years for JCP&L.

The subsidiaries are collecting, from their customers, 1 mill per kilowatt-hour generated for spent nuclear fuel disposal costs resulting from nuclear generation subsequent to April 6, 1983. These amounts are remitted quarterly to the DOE.

■ INSURANCE

The subsidiaries have obtained the maximum amount of insurance available to them to insure their nuclear plants for (a) property damage (other than certain flood and earthquake coverages) and decontamination, (b) liability to third parties and (c) incremental replacement power costs, as presented below. The QPU System has also obtained insurance for its other operations and facilities, including coverage for property damage, liability to employees and third parties and loss of use and occupancy (primarily incremental replacement power costs). Most of this insurance is subject to certain deductibles. Some potential losses or liabilities may not be insurable or the amount of insurance carried may not be sufficient to meet potential losses and liabilities, including liabilities relating to the release or escape of hazardous substances into the environment. There is also no assurance that the QPU System will maintain all existing insurance coverages. Future losses or liabilities which are not completely insured, unless allowed to be recovered through ratemaking, could have a material adverse effect on the financial condition of the QPU System.

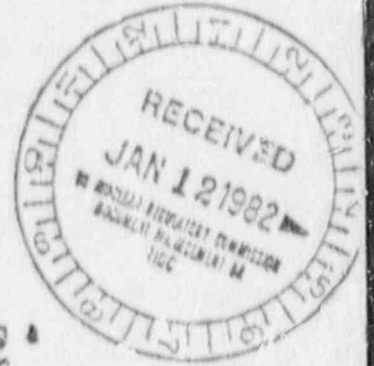
January 8, 1982

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NOTE FOR: Harold R. Denton, Director
NRR

FROM: Bernard J. Snyder, Program Director
TMIPD:NRR

SUBJECT: TMI-2 CLEANUP FUNDING



As indicated in my note of 12/23/81 to you, I am forwarding a summary of current TMI-2 cleanup funding proposals for your information. This summary was prepared by my office for the TMI-2 Advisory Panel.

Bernard J. Snyder, Program Director
TMIPD:NRR

Enclosure: As stated

| | | | | | |
|---------|-------------|------------------------|---------------------------------|--|-----|
| OFFICE | TMIPD/NRR | PD: <i>[Signature]</i> | | | |
| SURNAME | WTravers;bg | BJSnyder | XXXXXXXXXXXXXXXXXXXX | | |
| DATE | 1/5/82 | 1/8/82 | | | D/3 |

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20543

JAN 09 1982

MEMORANDUM FOR: Panel Members
FROM: William D. Travers, Ph.D.,
NRC Liaison
SUBJECT: INFORMATION ON PROPOSALS FOR ASSURING TMI-2 CLEANUP FUNDS

At the Panel's request, I am forwarding information on alternative plans for assuring that adequate funds will be provided to complete the TMI-2 cleanup. In addition to summarizing and/or reproducing information presented to the Panel, I have referenced appropriate discussions contained in the transcripts.

The Panel is currently considering two different approaches to making a recommendation on assuring adequate cleanup funding. One course of action involves Panel support of a non-specific cost sharing plan. In this case cost sharing would be endorsed "in principle" without identifying any presently proposed plan. The second alternative involves Panel consideration and support/non-support of the specifics of various plans which have been detailed before the Panel.

To date the Panel has passed one motion, "that the restart of TMI-1 should be based solely on the basis of technological health and safety considerations, and not economic considerations with respect to the cleanup of TMI-2." Two motions are currently tabled: (1) "We endorse the principle of cost sharing - cleanup funds should be obtained from the nuclear industry, the Federal Government, insurance funds, the Commonwealth of Pennsylvania, the State of New Jersey and GPU-Nuclear." (2) "We believe that \$190-million over a six year period is justified for research and development grants from the Federal government."

The information contained here summarizes various financial assurance plans and suggestions made to the Panel.

Thornburgh plan

- 25% of the \$760 million in unfunded cleanup costs is funded by industry.
- 25% is funded by the U.S. Government.
- 32% is funded by GPU.
- 4% is funded by Pennsylvania government.
- 2% is funded by New Jersey government.

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- \$90 million GPU insurance is directed to cleanup, a 12% share.
- Cleanup fund is administered by a newly created non-profit National Energy Research Institute.

Additional Information:

- The Governor's representative, Mr. Banks, addressed the Panel regarding this plan 9/1/81 (p.42).
- A representative from EEI, Mr. Kearney, addressed the Panel 12/10/81 (p.80). EEI is presently seeking Congressional action to require all utilities to support some cleanup funding through EEI.
- GPU's representative, Mr. Cherry, discussed Thornburgh's plan before the Panel 12/10/81 (p.54) and 9/1/81 (p.110).
- Chairman Shannaman's (PAPUC) representative, Ms. Nielson, appeared before the Panel 9/1/81 (p.121). More recently the PAPUC appears to be leaning towards overruling ratepayers to support cleanup funding (see specifics in the enclosure).

Ertel Bill

- Establish a governmental entity, the Nuclear Property Insurance Corp.
- Establish an initial fund with initial loan financing by the U.S. Treasury of up to \$100 million.
- Premiums paid from nuclear utilities totalling \$150 million per year until at least a \$750 million reserve is established, \$2 billion coverage for a single accident.
- The corporation pays 75% of uninsured TMI-2 cleanup costs. GPU repays 50% of this over time. After the cleanup the corporation becomes a mutual insurance company owned by the utilities.
- Rep. Ertel discussed his plan before the Panel 9/1/81 (p.67).

Specter Bill

- Essentially identical to Ertel Bill except that:
 - It doesn't provide the Insurance Corporation with \$100 million "up front" financing from the U.S. Treasury.
 - It wouldn't require GPU to repay 50% of corporation provided funds.
- Senator Specter's representative, Mr. Wagner, discussed this plan briefly on 9/1/81 (p.64).

Heinz Bill

- Similar to the Ertel Bill except that:
- It doesn't authorize borrowing \$100 million from the U.S. Treasury.
- The insurance fund would be administered by an existing Federal agency (i.e. DOE, NRC).

Goodling Bill

- Identical to Heinz Bill.

Recommendations by: American Society of Utility Investors 10/21/81 (p.21):

- Panel should urge that cleanup be expedited.
- Panel should urge TMI-1 restart.
- Panel should endorse an insurance corporation per Ertel Bill.

Recommendations by: TMI Alert 11/16/81 (p.3) and 12/10/81 (p.48):

- Cost-sharing is a good approach.
- Electric industry share should be \$450 million.
- Nuclear manufacturer's share should be \$100 million as a minimum.
- U.S. Government should bear a major share of the cost burden, something greater than TMIA's \$25 million estimate.
- N.J. and Maryland governments should contribute at least \$15 million each.
- A 20% surcharge should be added to the Gross Receipts Tax on Pennsylvania utility revenues - from 1982 - 88. This should generate \$268 million.
- GPU should divest itself of any assets unnecessary for power generation or distribution. GPU's share should be about \$300 million.
- Cleanup monies should be held in an account outside GPU control and used only for cleanup activities.
- Industry contributions should come from earnings, not through a rate structure.
- Any money obtained by GPU legal actions against NRC and B&W should go towards cleanup.
- GPU appoint 3 new members to its Board, one named by Gov. Thornburgh, one named by the Pennsylvania legislature and one named by citizens groups in south-central Pennsylvania.

Recommendation by: Lebanon Valley Chamber of Commerce 11/16/81 (p.24):

- Urges Panel to support Gov. Thornburgh's cost-sharing plan.

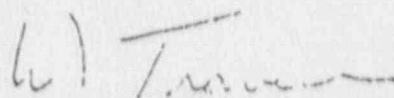
Recommendations by: Lancaster Environmental Action Federation 12/10/81 (p.96):

- Cleanup should be first priority.
- A cost-sharing plan, similar to Thornburgh's be established.
- Unit 1 should not be restarted until agreement is reached on Unit 2 funding and safety and environmental issues are resolved.
- TMI-2 radwaste should be removed and processed water should not be released to the Susquehanna.

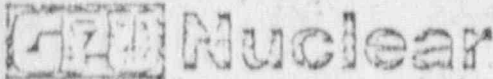
Recommendations by: TMI Public Interest Resource Center 10/21/81 (p.37):

- Cost-sharing is a good approach but linkage to TMI-1 restart should be eliminated.
- GPU should improve reliability and productivity of its coal-fired units to generate cleanup funds.

In addition to these proposals from elected officials and organizations, the Panel has also heard from individuals during the past several meetings. Although most of the suggestions from these individuals are covered within the proposals already listed, the following transcript references are offered: Ms. Berger (9/1/81, p.15), Mr. Babil (9/1/81, p.23), Mr. Brooks, TMIPIRC (10/21/81, p.37), Mr. Algood, American Society of Utility Investors (11/16/81, p.53), Mr. Hessler (11/16/81, p.29), Mr. Sayer (11/16/81, p.22).


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Enclosure: As stated



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GPU PENNSYLVANIA SUBSIDIARIES PETITION FOR RATE CASE SETTLEMENT

PARSIPPANY, NJ, December 29 -- General Public Utilities Corporation (GPU) reported today that its Pennsylvania subsidiaries have joined the Public Utility Commission (PUC) staff and the Office of the State Consumer Advocate in seeking PUC approval of settlements recently reached between each of the parties which would formally resolve the base rate requests filed by both companies with the PUC last June.

In general terms for the customers of Metropolitan Edison Company (Met-Ed), the settlement would provide an immediate \$74 million increase in annual base rates, to be followed by a \$74 million decrease in energy cost rates by year-end 1982 as a result of the undamaged TII-1 returning to operation and the recovery of certain deferred energy costs. Pennsylvania Electric Company (Penelec) customers would, under terms of the agreement, experience an immediate \$54 million increase base rates with a subsequent \$24.5 million rate decrease, on an annualized basis.

On June 30, Met-Ed asked for a \$212.1 million increase in base rates while its sister company Penelec requested \$124 million in increased rates. The requests were reduced in November by \$44.4 million and \$22.2 million respectively to reflect Governor Thornburgh's cost-sharing plan for the clearing of Three Mile Island Unit 2.

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According to GPU Chairman and Chief Executive Officer William G. Kuhns, the settlements presented today to the PUC Administrative Law Judge will, "make provision for recognizing TMI-1's return to service in a timely fashion and will allow revenues for TMI-2 decontamination efforts at a time when customer costs will be reduced through TMI-1 generation savings. The accords will also permit the companies to reduce their investment in TMI-2 at an accelerated rate while recognizing other costs being experienced by the Companies that are unrelated to Three Mile Island."

Kuhns explained that if approved, the settlements would result in a series of customer rate increases and decreases in 1982 as anticipated events occur. He added that the rates would, within that period, level out at virtually the present rate, with customers paying essentially the same for their electricity as they do now.

The settlements also provide that the Companies will not petition the Commission for further rate increases before January 1, 1983, and would require Met-Ed to withdraw its petition for extraordinary rate relief that was filed with the Commission on December 9.

As proposed, step one of the settlements would provide Met-Ed an immediate \$74 million increase in annual base rate revenues with Penelec receiving \$54 million in increased annual base revenues.

The second phase of rate changes would decrease Met-Ed and Penelec annual Energy Cost Rates (ECR) by \$80 million and \$40 million respectively, to be partly offset by an increase in annual base rate revenues of \$25 million and \$12.5 million, effective upon TMI-1's resumption of substantial generation. Thus, the second phase would result in net decreases in annual revenues of \$55 million and \$27.5 million for Met-Ed and Penelec, respectively, reflecting TMI-1 energy cost savings, while for the first time providing for customer participation in the cleanup at TMI-2.

A third step in the settlements will reduce annual revenues for Met-Ed by \$35.7 million and for Penelec by \$12 million upon the expiration of deferred energy charges and will increase annual base rate revenues by \$16.7 million for Met-Ed and \$5 million for Penelec.

Kuhns said in commenting on the proposed settlement, "Although not adequate to restore the Companies to complete financial health, these settlements should be sufficient to deal with the financial needs of their present reduced levels of operation. They will give the Companies a level of financial stability not seen since the accident at TMI. They will also recognize the financial participation of customers consistent with Governor Thornburgh's plan for the cleanup of TMI-2, and should provide an important impetus to the other parties involved in financial participation in the decontamination program.

"We are hopeful that the proposed settlement will also encourage the 45 banks providing Met-Ed with short-term financing to continue their financial support of Met-Ed," Kuhns noted.

The petitions outlining the proposed settlements were filed with PUC Administrative Law Judge Joseph Hatuschak, who has presided over hearings on the pending increases which began in Harrisburg last October 7. He is expected to submit his recommendation to the PUC commissioners in the very near future.

News Release

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For Release: Immediately

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GPU UPDATES NRC ON PROGRESS TOWARD PDMS

Washington, D.C. -- Top officers of the General Public Utilities System (GPU) said today that the company is on target to place Three Mile Island Unit 2 in Post Defueling Monitored Storage (PDMS) in 1989.

The officers, who addressed the U.S. Nuclear Regulatory Commission here in GPU's fourth annual report to the agency on the TMI-2 Cleanup Program, also noted the continued, successful operation of TMI-1 in 1987.

GPU Nuclear Corporation, along with its prime contractor, Bechtel, expects to complete the Cleanup Program by mid-1989 at a cost of about \$965 million. The goal of the cleanup is to eliminate the possibility of a nuclear chain reaction and the chance of a hazardous release of radiation by removing more than 99 percent of the damaged nuclear fuel core from the reactor system and the majority of loose, radioactive contaminants from the plant. Upon completion of the cleanup, the plant will be placed in a safe, stable and secure condition known as PDMS for an extended period.

The main activity in the cleanup is the defueling of the reactor vessel. Two-thirds of the estimated total of 293,000 pounds of core debris has been removed from the reactor. The U.S. Department of Energy (DOE) has shipped by rail about 60 percent of the debris from TMI-2 to the Idaho National Engineering Laboratory.

William G. Kuhns, GPU Chairman and Chief Executive Officer, said the contributors to the cleanup funding plan -- the states of Pennsylvania and New Jersey, the customers and stockholders of GPU, the Edison Electric Institute, DOE and the Japanese nuclear industry -- are current in their contributions. "The Cleanup is proceeding without financial constraints; and we now believe, despite some continuing uncertainties, that the planned work will be completed within the \$1 billion funding program," he said.

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Kuhns also said, "The GPU System's present energy supply plans do not reflect the return to service of TMI-2, and no funds are presently being expended to preserve the plant and equipment for future use."

On TMI-1 operations, Kuhns reported that the plant had a 1987 capacity factor of 74 percent despite almost three months of planned outage and that the capacity factor for the present operating cycle that began in April 1987 is 96 percent. The 1987 capacity factor of 74 percent compares to an industry average for 1987 of 62 percent. "We intend to continue to supply the personnel, training and management support necessary to maintain the excellent TMI-1 record since the NRC authorized restart in October 1985," he said. TMI-1 operated from 1974 to 1979, but was shut down for six and one-half years after the TMI-2 accident while the NRC reviewed questions stemming from the accident.

Philip R. Clark, President and Chief Executive Officer of GPU Nuclear, said the company is proceeding with a carefully thought-out program for phasing down the TMI-2 staff while retaining sufficient personnel to ensure the safe completion of planned cleanup work. The number of people working on the TMI-2 cleanup has decreased from 1,030 a year ago to 960 presently and is expected to be less than 400 a year from now. Staffing is expected to level out to about 50 people after PDMS is in place.

Clark reviewed key elements of the PDMS concept. They are:

-- Fuel will have been removed and shipped off-site such that a nuclear chain reaction is impossible.

-- The potential for a significant release of radioactivity will have been eliminated.

-- Water will have been removed from plant systems, and the potential for its reintroduction has been minimized.

-- Radioactive wastes will have been packaged and shipped off-site or are safely stored pending shipment.

-- Radiation will have been reduced to levels which will allow continued plant monitoring, performance of required maintenance and plant inspections.

-- Plant containment systems are to be maintained in accordance with NRC-approved technical specifications.

These principles will provide inherent stability to minimize the possibility of industrial or radiological mishaps, effective containment of radioactivity and positive monitoring and control of plant conditions.

Clark said, "We believe this is a sound plan which results in a condition that poses no risk to the public health and safety. Reviews over the past several years have not identified any substantial safety or health concerns with the PDMS plan." The PDMS plan has been discussed with the TMI-2 Safety Advisory Board, the NRC staff and the NRC Advisory Panel on the Decontamination of TMI-2. Clark said it was extremely important that agreement be reached on the remaining work in view of the advanced status of the project and the phasing down of staffing levels that is underway.

Clark said a major effort by GPU Nuclear to continue to inform the public about TMI-2 activities has proven effective. This effort included news releases, mailings, newspaper advertisements and direct contact with local officials and citizens. "As a result of these efforts, we are finding a significant increase in satisfaction among the public with the way the Cleanup Program is being handled. We are also finding increased sentiment among local residents for completing the Cleanup Program," Clark said.

Clark noted that questions have been raised recently by members of the U.S. House and Senate about DOE's shipment of TMI-2 core debris by rail to the Idaho National Engineering Laboratory. "If this results in delay or interruption of the shipments, it will delay completion of the Cleanup Program," Clark said. "We are working with DOE and others to try to prevent any delay."

Edwin E. Kintner, Executive Vice President of GPU Nuclear, reported good progress in the defueling of the TMI-2 reactor vessel in 1987. Cloudy water that caused poor visibility in the reactor in 1986 was cleared up early in 1987, and visibility has been maintained since then by an improved water filtration system. Core debris is removed from the reactor by crews who manipulate tools and equipment through 30 feet of water that covers the core.

In addition, Kintner said, nearly all the 177 fuel assembly stubs in the core were removed relatively easily in 1987. All debris has been removed from the normal core region of the reactor.

Also in 1987, Kintner reported, GPU Nuclear completed a year of developmental work on two processes for disassembling internal reactor components to remove the last one-third of core debris from the reactor. The two methods involve a drilling machine, which currently is in use, and an underwater torch that is to be used later.

Kintner said GPU Nuclear is unable to begin disposition of processed accident-generated water until 1989 and would be unable to complete the

process until 1990 or later -- after TMI-2 is placed in PDMS. GPU Nuclear first proposed evaporation as a means of disposing of the water in July 1986. The proposal is to be reviewed by an NPC Atomic Safety and Licensing Board prior to being submitted to the NRC for approval. Kintner estimated the proposal would not reach the NRC before December 1988.

The evaporation is projected to produce a total average exposure to the public equal to one or two hours of natural background radiation over a period of one to two years. An environmental impact statement published in June 1987 by the NRC staff found evaporation to be environmentally acceptable.

GPU Nuclear, at its own risk, has authorized a vendor to begin design, fabrication, installation and testing of the evaporator system. The work is to take about nine months to complete. Work on the system is being started now with the expectation that NPC approval will be forthcoming and to minimize the lapse of time in disposing of the water. The water, which originated with the 1979 accident, has had most radioactive contaminants removed from it but remains slightly contaminated.

Kintner said the GPU Nuclear is working with NRC researchers to develop a program to obtain data on core debris in the bottom of the reactor and on the structural material of the reactor itself. During the accident, approximately 20 tons of molten core material flowed into the bottom of the reactor vessel where it was contained.

Kintner said GPU Nuclear continued to project that total worker exposure from the cleanup would be significantly below earlier projections. The current projection is 6,000 man-rem, compared to an NRC estimate of 13,000 to 46,000 man-rem.

Frank Standerfer, Vice President and Director of TMI-2, reported that a number of documents in support of PDMS would be submitted to the NRC over the next month. These documents, like others that have been submitted to the NRC over the past year, are largely revisions made to existing documents to reflect improved plant conditions. They generally outline administrative and operational requirements of the plant's NRC license.

The GPU System serves 1.7 million customers in an area covering half the land mass of Pennsylvania and New Jersey.

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