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UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C.

FOR RELEASE ON DELIVERY
EXPECTED AT 10:00 A.M.
SEPTEMBER 22, 1981

STATEMENT OF
J. DEXTER PEACH
DIRECTOR, ENERGY AND MINERALS DIVISION
BEFORE THE
SUBCOMMITTEE ON ENERGY CONSERVATION
AND POWER
U.S. HOUSE OF REPRESENTATIVES



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H.R. 2512 encompasses two critical issues stemming from the TMI-2 accident--increased insurance coverage and cleanup funding--both of which need immediate resolution. Passage of H.R. 2512 is premature and requires establishing an organization that is not needed. The current proposals to increase insurance coverage to \$1 billion and Gov. Thornburgh's proposal for funding the cleanup need to be given an opportunity to be developed.

Total costs to clean up TMI-2 are estimated at \$1.034 billion, with an estimated \$570 million unfunded balance expected at the end of 1981. Additional O&M costs of \$105 million will also be incurred but this is a matter for State regulators and GPU to settle. DOE is proposing an extensive multi-year R&D effort at TMI-2. We believe this is a worthwhile program, will greatly benefit both the Federal regulatory agencies and the utility industry, and should be accorded full Congressional support.

GPU customers have not been charged with any of the cleanup costs to date. However, customers have had to pay \$202 million more than they would have if the accident had not happened because higher-cost replacement energy was required to economically meet System needs. If accident recovery costs of \$150 million/year were placed on ratepayers, Met Ed's rates would increase about 1.0 cent/kWh or 15.5 percent more than 1980 rate levels. Rates for Penelec and Jersey Central customers would go up about 0.3 cent/kWh or 6.0 and 3.8 percent, respectively, over 1980 rates.

With few exceptions, all accident cleanup costs to date have been paid from insurance proceeds. No entity other than GPU shareholders has provided any direct financial assistance. Indirect costs to Federal agencies as a result of the accident, however, will total about \$275 million by the end of 1981.

We found no reason why the reactor core should not be removed as expeditiously as possible. While posing no immediate safety hazard, the current status of the reactor has the elements for additional safety problems. For economic reasons, early core removal would be advantageous to both GPU and its customers.

The single most important step to adequately finance any future accident recovery effort is to increase the present level of property insurance coverage. While it appears the private sector will be able to achieve this, the responsibility for determining adequate levels of coverage and the best way to do it rests with NRC. An improved regulatory climate at both Federal and State levels could help reduce future costs by reducing the time for cleanup activities.

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Mr. Chairman, we appreciate the opportunity to testify on the financial and operational problems that continue to exist at the Three Mile Island nuclear generating station (TMI), and the parent company of the facility, the General Public Utilities Corporation (GPU). The General Accounting Office (GAO) has had an interest in TMI for quite some time as evidenced by our reports issued on July 7, 1980, 1/ which addressed the serious financial questions raised by the accident, and more recently our report issued on August 26, 1981, 2/ which pointed out the need for a much greater commitment by those affected by TMI to reach a successful resolution of its problems. We believe the recent initiatives by the Federal Government, the State of Pennsylvania, and the electric utility industry are positive

1/"Three Mile Island: The Financial Fallout" (EMD-80-89, July 7, 1980).

2/"Greater Commitment Needed to Solve Continuing Problems At Three Mile Island" (EMD-81-106, August 26, 1981).

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signs of a willingness by the concerned parties to move forward at TMI. We trust this hearing will not only provide additional impetus to increase the commitments we believe are necessary to resolve the dilemma at TMI but that attention can be focused on the need to take appropriate steps to avoid the financial problems faced by GPU if similar accidents occur in the future.

The following is our response to your questions regarding the problems that continue to exist at TMI, as well as our comments on legislation and other mechanisms that have been offered to finance this and future accidents.

WHAT ARE GAO'S VIEWS AND COMMENTS ON H.R. 2512?

We believe that the introduction of H.R. 2512 was a useful vehicle for focusing attention on the two principal concerns surrounding TMI--the need for increased on-site property damage insurance for nuclear reactors and how the costs of cleaning up the damaged TMI-2 reactor will be funded. We also believe, however, that Congressional approval of H.R. 2512 in its present form would be premature because of the initiatives currently underway within the private sector to resolve both the TMI and the industry problems encompassed by the legislation. In our opinion, the Federal involvement required by H.R. 2512 should be a last resort that would be activated only after it has been clearly demonstrated that the States and the electric utility and insurance industries are unable to resolve the cleanup funding issue or provide the additional insurance coverage that is obviously needed.

Let me elaborate a little on the initiatives that are underway as they relate to the two major provisions of H.R. 2512. The proposed legislation would establish a quasi-governmental insurance corporation to provide up to \$2 billion of insurance coverage above what utilities can obtain in the private sector --in effect, a second-layer of insurance coverage. A minimum of \$150 million per year would be collected by the corporation from the utilities until at least a \$750 million reserve had been established.

At the present time, the utility and insurance industries are preparing to expand their present coverage of \$450 million to \$1 billion. We fully support this move to increase coverage. However, the adequacy of a \$1 billion insurance policy--or \$2 billion in insurance coverage--is uncertain. Consequently, in our August 26, 1981 report, we recommended that the Nuclear Regulatory Commission (NRC) closely follow the insurance issue and determine what level of coverage is adequate. In response to our recommendation, NRC noted that it has proposed a rule which would require nuclear reactor licensees to obtain the maximum amount of property insurance available. NRC did not comment, however, on our suggestion that it determine the acceptable level of coverage. We continue to believe such an assessment is vital to both industry actions and congressional deliberations on H.R. 2512.

H.R. 2512 also provides that the corporation shall reimburse GPU for 75 percent of the uninsured cleanup costs for TMI-2 from

insurance premiums collected under Section 7 of the Act and paid into the fund established under Section 5. Fifty percent of this amount would be subject to repayment. The remaining 25 percent of cleanup costs would be shared by other parties with an underlying interest in TMI-2 and beneficiaries of nuclear power.

In our report, we concluded that a shared approach to funding the cleanup at TMI-2 is fundamental. We also concluded, however, that the primary leadership role in resolving the funding impasse rests with the cognizant State officials in Pennsylvania and New Jersey. We stated our belief that these State officials will need the support and cooperation of the utility industry, its regulators, and the appropriate Federal entities--notably NRC and the Department of Energy (DOE). Within the last few months, we have seen a willingness on the part of these parties to collectively address the cleanup issue. On July 9, 1981, the Governor of Pennsylvania proposed a \$760 million cost-sharing plan for the cleanup covering the 1982-87 period. DOE has proposed a research and development (R&D) program for TMI-2 of about \$75 million with first year funding of \$27 million. Working through the Edison Electric Institute (EEI) the utility industry has now indicated a willingness to actively participate in the cleanup at a 6-year cost of \$190 million.

If these measures are successful, the Federal role should be limited to three areas of activity. NRC should use its authority to provide a regulatory climate which will expedite

the cleanup effort--and thereby serve to reduce overall costs. DOE should actively pursue its R&D effort, particularly as it relates to resolving the nuclear waste disposal problems at TMI. The Congress should continuously monitor the cleanup and insurance coverage areas and provide appropriate financial support and regulatory authority to NRC and DOE as needed. Beyond this, we believe that legislative measures similar to those proposed by H.R. 2512 should be taken only if the private sector cannot provide insurance coverage as determined to be adequate by NRC or if industry participation in sharing cleanup costs will require a Congressional mandate. Even if this step becomes necessary, we believe that maximum use should be made of private institutional facilities wherever possible to accomplish the objectives of H.R. 2512.

WHAT ARE THE ESTIMATED COSTS OF DECONTAMINATING
THE DAMAGED TMI-2 REACTOR?

In our August 26, 1981 report, we included an April 1981 estimate of \$701.4 million to cover the TMI-2 cleanup costs during the period 1981-87. No operations and maintenance (O&M) costs were included. As of December 31, 1980, about \$130 million in unexpended insurance proceeds remained to be applied against future cleanup costs leaving an uninsured cleanup cost balance of about \$570 million.

Since our report was issued, we obtained a revised cleanup cost estimate prepared by GPU and its project contractor, the Bechtel Corporation. This latest estimate, which revises the previous approach to reaching and extracting the damaged nuclear

fuel core, anticipates that approximately \$654 million--exclusive of O&M costs--will be needed during the 1982-87 period to complete the cleanup. Approximately \$84 million in insurance proceeds are expected to remain at the end of 1981, still leaving an uninsured cleanup cost balance of about \$570 million. This estimate is comparable to the \$760 million estimate included in the cost-sharing plan proposed by the Governor of Pennsylvania in July since the Governor's estimate includes \$105 million in O&M costs for the cleanup period plus the remaining insurance proceeds, neither of which is included in the \$570 million estimate. Because O&M costs are a normal cost of doing business and are not attributable to the accident, we do not believe they should be aggregated with cleanup costs but should be considered separately for funding purposes.

GPU/Bechtel cleanup schedule

The cleanup effort has been organized by GPU and its contractor into three general phases, with numerous tasks to be completed in each phase. Due to the nature of the work, there will be some overlap between the various phases of the cleanup. The following schedule outlines the three phases of the cleanup, the major tasks to be performed in each phase, the estimated total cost for the project, and a reconciliation of the unfunded balance.

Schedule of Proposed Cleanup
Activities at TMI-2 and Estimated Costs

	<u>Estimated cost</u> (millions)
Phase I - <u>Complete auxiliary building cleanup and initiate containment cleanup</u>	
Major Activities:	
Operate EPICOR II	
Clean up reactor coolant water	
Complete cleanup for auxiliary building systems	
Initiate containment building cleanup	
Total estimated costs	\$ 551
Phase II - <u>Decontamination of the containment building</u>	
Major Activities:	
Perform various entries into containment building	
Develop support systems for decontamination	
Perform gross manual decontamination on various elevation levels	
Operate the Submerged Demineralizer System to remove high-level radiation	
Reduce volume of captured radiation	
Total estimated costs	329
Phase III - <u>Remove the fuel core, cleanup the coolant system, and perform radiation storage functions</u>	
Major Activities:	
Construct reactor vessel mock-up for training	
Refurbrish polar crane	
Disconnect control rod drive mechanism	
Remove plenum chamber	
Perform core inspection	
Remove damaged fuel	
Total estimated costs	<u>154</u>
Total estimated cost for decontamination and fuel removal	<u>\$1,034</u>
Less:	
Costs incurred (1979-81)	-\$275
Estimated O&M expense (1982-87)	- 105
Remaining insurance proceeds (as of 12/31/81)	- <u>84</u>
Total unfunded cleanup cost balance	\$ <u>570</u>

The DOE Involvement

DOE has been actively involved at TMI since 1979 when it began to collect and disseminate data on the effects of the accident. In 1980, DOE joined with GPU, NRC, and the Electric Power Research Institute (EPRI) in a program to coordinate the collection and exchange of information on the technical aspects of the accident. Limited information has been obtained on how the accident affected reactor and containment building equipment, the distribution of radioactivity, and the treatment and elimination of radioactive wastes. DOE anticipates that this program will provide useful scientific information for the rest of the electric utility industry and under the present cleanup schedule will be active for about 8-10 years at an annual cost of \$10 million. If the cleanup is accomplished sooner, these program costs could be reduced. Appropriations for DOE's involvement amounted to a total of \$10.5 million for fiscal years 1980 and 1981 with \$10 million requested for fiscal year 1982.

A R&D program has also been proposed by DOE which could possibly cost \$75 million over a 3-year period. The basic objectives of the program would be to gain quick access to the damaged core, remove it, and demonstrate the feasibility of various techniques for immobilizing the captured radioactive wastes. It is possible that, as a result of this effort, NRC would modify some of its requirements relating to the safety of nuclear powerplant operations.

DOE's proposed data acquisition/dissemination and R&D involvement at TMI is shown in the following schedule. Because of the potential for overlap of the R&D tasks, DOE is projecting a range of costs for each of the two major activities rather than discrete costs.

MAJOR ELEMENTS OF DOE ACTIVITIES AT TMI

<u>Activity</u>	<u>Estimated cost range</u> (In millions)
<u>TMI Data Acquisition and Dissemination:</u>	\$ 80-100
Inspection of instrumentation and electrical components	
Radiation, environmental and waste technology	
Offsite fuel debris examination	
Establish archives--disseminate data	
Program management	
<u>DOE Research and Development:</u>	
<u>In situ reactor core examination</u>	\$ 45-65
Early core damage examination	
Head and plenum inspection	
Core and debris removal and inspection	
<u>Waste Immobilization Research</u>	\$ 10-30
Process development and scale-up	
Equipping existing hot cell with handling, vitrification and environmental control equipment	
Shipping, immobilization, and detailed examination of immobilized products	
 Total DOE R&D Program Estimate	 <u>\$135-195</u>

The R&D is a "hands on" effort where DOE will be actively involved in studying methods and procedures for quickly extracting the damaged fuel and analyzing its condition as a

result of the accident. Several activities will be performed in this phase of the project including (1) decontamination experiments in various containment building locations such as the reactor head and polar crane, (2) remove and study some of the radioactive wastes that have already been captured and immobilized, (3) work with contractors to develop the tooling and training required to inspect and remove the reactor core, and (4) perform analyses of the effects of the accident on the core and other reactor components.

We believe the proposed DOE activities are worthwhile, especially given the heavy involvement of the Federal Government in the initiation and promotion of past nuclear programs. In our August report, we recommended that DOE prepare a multi-year budget proposal for Federal participation at TMI which would recognize the leadership role of the States in resolving TMI's problems. We also recommended that the DOE proposal clearly specify the objectives to be achieved by Federal participation, the work steps for each fiscal year, the application of the program results, and the total funding needed to successfully carry out the program. DOE officials responded to our recommendation by stating they do not believe it is necessary to seek multi-year funding support because the normal annual review and Congressional authorization process will assure the program's consistency with DOE's objectives and the needs of the cleanup. We disagree. We believe a total commitment of the Federal sector is important in eliciting the support of other interested parties for the cleanup effort.

WHAT WILL BE THE COST TO THE RATEPAYERS IF THEY
PAY FOR THE ENTIRE DECONTAMINATION PROCESS?

GPU has estimated that it will take about \$150 million a year to expeditiously move forward with the cleanup effort. The effects of passing this full cost on to customers of the GPU companies will vary depending on the share of TMI ownership, the effect of State revenue taxes, and the allocation of the cleanup costs among the various customer classes. If the \$150 million cost were passed through to customers on a per kilowatt hour (kWh) basis, Metropolitan Edison (Met Ed) residential customers would have their rates increased by 1.0 cent per kWh and residential customer rates for Pennsylvania Electric Company (Penelec) and New Jersey Central Power and Light Company (Jersey Central) would increase by 0.3 cent and 0.25 cent per kWh, respectively.

To better illustrate the potential effect on residential customers, we estimated what the average residential rates would have been in 1980 if the \$150 million cleanup cost had been allowed and what effect the increase would have had on the percent of net disposal household income used for electric energy expenses. Based on the per kWh increases identified in the previous paragraph, rates for Met Ed, Penelec, and Jersey Central customers would have increased by 15.5 percent, 6 percent, and 3.8 percent respectively. Even with these increases, however, customers of several neighboring utilities would have paid a higher kWh cost than GPU System customers.

Adding a cleanup charge to Penelec's and Jersey Central's 1980 actual rates would have made little change in the share of disposable household income spent for electricity by their customers--about 0.1 percent. The added cost for Met Ed customers, however, would have increased their share of disposal income to 2.3 percent--an amount equal to or below five of 16 neighboring utilities in Pennsylvania, New Jersey and New York.

To more accurately assess the effects of the TMI-2 accident on future customer rates, it is necessary to consider other cost elements that will be added to, or deleted from, customer costs. The GPU companies have been placed in dire financial straits, largely as a result of past regulatory commission actions. The loss of earnings on the TMI units and the deletion of certain fixed expenses from the rates led to the suspension of shareholder dividend payments because the money was needed to sustain operations. The adverse rate actions, the suspension of dividends, and the uncertainty of cleanup funding reduced the companies' credit rating to the point where they can not obtain money from outside sources. To remain financially viable over the long-term, GPU's earnings level and credibility with investors has to be restored and this will require additional rate increases for System customers.

In our report, we estimated that if the TMI capital and operating costs had been allowed in the companies' base rates, residential customer rates actually charged in 1980 would have increased by 0.9 cent for Met Ed and 0.3 cent each for Penelec and Jersey Central. We also pointed out, however, that there

are a number of factors pending which will affect future rate levels. Among these factors are the TMI-1 restart which will reduce replacement energy costs and the expiration of the present deferred energy surcharge.

Since the completion of our audit work, GPU has submitted new rate filings to the Pennsylvania commission and the New Jersey board. An analysis of the cost elements in the filings indicates that the net effect of restoring the GPU System's earning power, restarting TMI-1, and completing the collection of deferred energy charges would be to increase rates an additional 0.56 cent for Met Ed, 0.45 cent for Penelec, and 1.07 cents for Jersey Central. These increases were estimated by GPU to add 9.0, 8.6, and 12.6 percent, respectively, to the companies' current rate levels.

Some precautions in using these numbers must be noted. The numbers presented are estimates only and subject to change depending on regulatory decisions. If, for example, the regulatory agencies only allow \$100 million in decontamination costs to be charged to rates, the rate increases postulated earlier for this cost element would be reduced by one-third. Likewise, if not all of the companies' requested costs for restarting TMI-1 are allowed in the base rates, the differential between estimated replacement energy costs in 1982 and TMI-1 generation costs will increase and the added savings could serve to reduce rates even more. In addition, the estimated costs are computed as an average rate per kWh. The allocation of these costs among

the various customer classes is a regulatory decision and the amounts charged to residential customers in our estimates could change.

HOW MUCH HAVE THE RATEPAYERS CONTRIBUTED TO DATE
FOR THE MAINTENANCE AND DECONTAMINATION OF TMI-2?

To date the regulatory commissions in Pennsylvania and New Jersey have not allowed any of the cleanup or other costs associated with TMI-2 to be passed on to consumers. As of July 31, 1981, direct cleanup costs amounted to \$201.4 million of which \$198 million was covered by insurance proceeds. The remaining \$3.4 million in cleanup costs and an additional \$43.8 million for O&M expenses at TMI-2 have been paid by GPU from stockholders' earnings.

Although no direct contributions have been made, GPU System customers have had their rates increased as a result of the accident. GPU lost over 20 percent of its generating capacity with TMI-1 & 2 out of service and had to purchase large amounts of electric energy to economically supply the needs of its consumers. Through June 1981, these energy purchases amounted to \$605 million. By regulatory commission orders, these replacement energy costs have been passed on to System customers. The GPU companies had collected about \$528 million of the \$605 million spent for replacement energy with the balance deferred for later collection. However, about \$326 million of this amount were TMI-related costs that would normally have been collected but had been deleted from the rates by regulatory commission orders. Consequently, as of June 30, 1981, GPU System customers had paid

a total of \$202 million more than they would have had the accident not happened. The following table shows how the replacement energy costs have been distributed.

DISTRIBUTION OF GPU'S
REPLACEMENT ENERGY COSTS
April 1979-June 1981

<u>Company</u>	<u>Net consumer costs</u> (in millions)
Jersey Central	\$103
Met Ed	87
Penelec	<u>12</u>
Total net replacement energy costs	<u>\$202</u>

The need to replace the relatively lower-cost nuclear energy from the TMI units with the higher-cost energy purchases increased GPU System customer costs at a faster rate than rate increases experienced by neighboring utilities. During the 1979-80 period, GPU System rates increased at a rate of 14.5 percent while non-GPU companies had an annual increase of 11.64 percent. This was in contrast to earlier years when GPU rate increases were lower than those for other companies.

HOW MUCH HAVE THE OTHER AFFECTED PARTIES SUCH AS THE STATES, THE FEDERAL GOVERNMENT, AND THE UTILITY INDUSTRY CONTRIBUTED TO THE TMI CLEANUP?

Several affected parties such as the States of Pennsylvania and New Jersey and the electric utility industry have had the opportunity to contribute financially to the cleanup costs but no such contributions have been made to date. The Federal Government has been heavily involved at TMI since the accident but no direct financial support for cleanup activities has been

provided. However, the industry has targeted \$17.3 million of its 1981-86 research and development budget for TMI-2-related matters and through 1981, Federal agencies have spent or budgeted a total of \$275 million for accident-related expenditures.

The lack of direct financial support may be due, in part, to the fact that TMI-2 was insured for \$300 million and the insurance proceeds have been used to cover accident recovery costs to date. However, the insurance money is running out, the GPU has little prospect for obtaining the funding required to complete the project or meet other impending obligations.

The States

The States of Pennsylvania and New Jersey have made no direct contribution towards funding the TMI-2 cleanup costs. Beyond rate actions by the Pennsylvania public utility commission and the New Jersey public utility board that have barely kept the GPU companies solvent, State officials, until recently, have done little to resolve the dilemma at TMI. On July 9, 1981, Governor Richard Thornburgh of Pennsylvania proposed a comprehensive cost-sharing plan for dealing with the TMI cleanup. The proposal was the product of discussions with representatives of the nuclear industry, Congressional and Administration officials, members of the financial community, private citizens, the State of New Jersey, and other relevant State and local groups. The Governor's proposal would share the cleanup costs of TMI on a 50/50 basis, with the burden spread evenly among national and local resources. While not mandating specific

actions to be taken by each party, the proposal clearly outlined what should be done in order to enhance the prospects of funding the cleanup. Among the amounts proposed was a \$5 million annual commitment by Pennsylvania and a \$2.5 million annual commitment by New Jersey.

We believe the Governor's proposal is a good first step toward the cleanup, and is evidence of the type of commitments we envisioned in our report. We hope that the momentum generated by the proposal will continue so that the cleanup at TMI can proceed expeditiously.

The Federal Government

The Federal Government has put no money directly into the cleanup effort, but like the GPU System consumer, has incurred considerable indirect costs in response to, and as a result of, the accident. The involvement of several sectors of the Federal Government has been fairly visible, with five primary Federal agencies spending about \$142.9 million during 1979 and 1980 in direct response to the accident. As might be expected, NRC had the largest involvement at a cost of \$131.5 million for activities such as inspection and enforcement, standards development, and regulatory research. DOE spent \$7.6 million for various support services including providing radiological assistance teams, and atmospheric release advice. The Environmental Protection Agency (EPA) spent \$3.7 million, mostly for off-site monitoring efforts, the establishment of a field office in Middletown, Pennsylvania, and other related support functions. Two other agencies, the Federal Emergency Management Agency

and the Federal Energy Regulatory Commission spent \$47,710 and \$14,000, respectively. Our best judgement is that only about \$26 million of this total amount can be considered directly related to the emergency, with the remaining classified as non-emergency response.

The agencies have estimated that 1981 expenditures will total about \$132.3 million, again led by NRC at \$118.8 million for expanded research related to reactor regulation, as well as a continuation of many of the efforts that were initiated by the accident. DOE and EPA are the only other Federal agencies with major estimates for 1981, with \$6.5 million and \$6.9 million respectively. The total actual and estimated Federal expenditures resulting from the accident through 1981, therefore, is \$275.2 million. A more detailed breakdown of these costs is provided in Appendix I.

The electric utility industry

The electric utility industry, like the other parties with a strong interest in the TMI-2 cleanup effort, has made no financial contribution for accomplishing that effort. However, in a recent meeting of utility executives, the industry endorsed Governor Thornburgh's proposal which included an annual industry contribution of \$31.7 million for 6 years. We are also aware that EPRI has recently increased its nuclear research budget relating to TMI. This proposed 5-year \$17.3 million program will not provide direct cleanup funding, but is designed to obtain generic information about the accident and recovery

effort and make it available throughout the electric utility industry.

We believe that an aggressive industry role in the cleanup can produce long-term benefits which would flow throughout the industry and its customers. For example, through participation in the cleanup, the utility industry may have the opportunity to assist in the development of more precise and effective regulatory programs which could be applied to future accidents should they occur. Such programs should help reduce the accident recovery time and cost for utilities. The utilities could also contribute personnel to assist in the decontamination process. Utility workers from throughout the country could receive training which could be used as a foundation to develop more effective procedures for working in high-radiation areas in other accidents or for eventual decontamination of retired nuclear generating plants at other locations. From the direct knowledge obtained from the TMI cleanup program, accident recovery timeframes should be reduced which would benefit customers who would have to rely on expensive purchased power for a shorter period of time in the event of an accident at another utility.

One major hurdle exists, however, which could preclude industry participation in the TMI cleanup. EEI officials believe that State utility commissions responsible for the actions of the contributing utilities will be reluctant to allow them to voluntarily expend financial and personnel resources to assist GPU at the expense of their customers. Shareholders of the

utilities may also object to their utility making a contribution from its earnings. It is fairly evident, therefore, that many thought-provoking questions and issues will have to be resolved before a major commitment by the electric utility industry can be made.

IS IT ADVISABLE TO REMOVE THE REACTOR CORE?

It was the concensus of officials that we contacted as part of gathering information for our recent report that the reactor core should be removed as quickly as prudently possible in order to minimize potential future problems. While no present danger exists, the elements for additional problems do exist at TMI, and these should be removed and isolated so that additional problems do not have a chance to occur. It was also pointed out that although the cleanup at TMI will not require new technology, the application of existing technology on a scale that has never been experienced is a factor that will be explored at TMI.

The accident created its own unique set of unknowns, particularly as to what happened to the nuclear fuel core and the reactor vessel itself. Some new techniques for inspecting and handling the core in its damaged condition will undoubtedly be required. Work is already underway to design and construct some of the specialized equipment needed.

We do not see the core removal process as a health and safety hazard. From a public safety standpoint, the reactor containment building did what it was designed for--it contained the radiation resulting from the accident and limited its dispersion to the outside environment. From personal observations

and the amount of effort and expense allocated to radiation protection measures during the proposed cleanup effort, we believe that appropriate precautionary measures will be taken to protect the health and safety of workers during the core access and removal process. Present plans call for DOE to transport the core off the island once it is removed from the reactor vessel, thereby eliminating the use of the island as a nuclear waste repository.

NRC regulations will apply to each phase of the core removal process. Normal fuel handling and storage procedures are well established, but the uncertain condition of the core at TMI-2 may well require the application of different procedures. Each of these procedures will require NRC approval, but with the on-site staff available, NRC sees no problem with ascertaining that all applicable regulations are adhered to. Removing the core could greatly benefit NRC and the utility industry by increasing their knowledge of what happened and what regulatory actions need to be taken to improve safety conditions at nuclear reactors. Leaving the core in place would continue the uncertainties surrounding the accident and this could lead to either under-or over-regulation by NRC.

From an economic standpoint, it is imperative that GPU remove the core as soon as practicable. Once the containment water is processed, the fuel core remains as the major source of additional radiation. As long as the core remains in the reactor vessel, continuous monitoring, surveillance, and maintenance is required. Furthermore, no final decisions will

be made on the future of the reactor unit until the core is out, the coolant system is decontaminated, and the reactor vessel and steam generators can be closely examined and tested. Until a decision is made on the future of the unit, GPU will continue to have difficulty in securing external financing and future System reliability and customer service could be jeopardized.

DOES GAO HAVE ANY RECOMMENDATIONS FOR
DEVELOPING MECHANISMS TO FINANCE ACCIDENTS
AT OTHER REACTORS IN THE FUTURE?

We believe that the most practical method for avoiding the financial hardship resulting from a major nuclear accident is to provide an adequate level of property damage insurance coverage so that the recovery/cleanup process is not hindered by the lack of money. This insurance coverage can be provided by an electric utility mutual insurance company, by private insurance carriers, by a quasi-Governmental insurance corporation--as envisioned in H.R. 2512--or by a combination of these. The coverage can either be obtained voluntarily or it can be required by NRC.

Property insurance coverage has always been voluntarily obtained by utility companies and is obtainable through either the Nuclear Mutual Limited insurance company (a utility mutual company) or through American Nuclear Insurers-Mutual Atomic Energy Reinsurance Pool (private insurers). Although all utility companies with nuclear reactors will undoubtedly make arrangements to obtain increased property damage insurance coverage as it becomes available, we believe it would be in the best interests of the public if such coverage were mandatory, possibly even made a condition of the utility's operating license. We also believe

that to the extent adequate levels of coverage can be provided, the private sector should be encouraged to continue providing property damage insurance coverage.

In recognition of potential problems by the insurance carriers of increasing insurance coverage to a level determined to be adequate by NRC, we have recommended that NRC closely follow the actions taken to upgrade insurance coverage. If NRC finds that adequate levels of coverage cannot be obtained from the private sector, it should suggest to the Congress what Federal action may be appropriate to overcome the deficiency. One action might be to legislatively require the second-layer coverage proposed in H.R. 2512 by authorizing NRC to mandate a retrospective premium adjustment in the amount needed to cover accident recovery costs beyond that provided by the primary carrier. This would be comparable to current provisions in the Price-Anderson Act for off-site insurance coverage. These retrospective premium assessments could be provided to the utility incurring the loss through the primary insurance carriers, negating the need for a Federally-sponsored corporation to handle such funding.

From GPU's experience to date with TMI-2, it is clear that time is money in an accident recovery effort. Long delays mean escalating costs, greater use of replacement energy, and difficulty in retaining qualified personnel. Although not a direct mechanism for financing future accident recovery efforts, we believe that a determined effort by NRC and State regulatory commissions to establish a responsive regulatory climate for the utility could reduce the accident recovery time and thereby

the cost--both to the utility and its customers. Consequently, we have recommended that NRC develop appropriate guidelines for utility use in preparing cleanup/recovery procedures for NRC approval. We believe that if these guidelines are updated to reflect acceptable standards and state-of-the art technology for decontaminating air and water effluents produced by a nuclear accident, NRC can respond to the needs of the utility more quickly and adequately protect public health and safety.

We recognize that one of the primary functions of State regulatory commissions is to set consumer rates that are reasonable and not excessive. State commissions also have a responsibility, however, to insure the financial viability of their jurisdictional utilities. It is important that they recognize the impact that a major nuclear accident can have on a utility's cash needs and its ability to obtain financing to meet continuing operating, maintenance, and other expenses. We do not believe that the rate treatment accorded the GPU companies for example, has enhanced their ability to adequately deal with the pressing current problems much less those of the future. As a result, GPU has been forced to continually cope with the complexities of the accident recovery effort and maintain system reliability with very limited financial resources. This has required the companies to impose some rather austere constraints on their operating units. We find it somewhat paradoxical that regulatory commissions are quick to take advantage of utilities' efforts to reduce consumer

costs by constructing nuclear units with low operating costs but are reluctant to have the consumers that benefitted from the lower cost energy share the risk with the companies and participate in a recovery effort when an accident happens. The company, in effect, is financially penalized as a result of efforts taken to keep rates low. We do not believe that the interests of equity are well served by this "one-way street" type of rate treatment. We further believe that this is an important lesson that all State regulators can learn from the TMI experience and, if appropriately applied, would help mitigate the adverse consequences of any future accident.

Let me close on one final note regarding GPU and the hurdles it faces in the near future. Several events will soon occur which could have a dramatic effect on GPU as a long-term provider of electricity in its service area. These events are closely tied to the rate treatment afforded the company by the State regulators.

In our report we noted that we do not believe that bankruptcy is a desired option for dealing with the problems at TMI. We also noted that the rate of return on shareholder's investments in both units has been eliminated, with all dividends to shareholders suspended. Finally, we noted that the company has been operating on short-term borrowings, and has over \$400 million in long-term debt which comes due between 1981 and 1985. Most of the redemption for this indebtedness occurs between 1983 and 1985. If responsive regulatory actions are not taken to restore

GPU's financial viability, the undesirable option of bankruptcy could become a real and serious threat in early 1983, if not before.

The most serious and apparent problems face Met Ed. The company faces a tax payment of about \$25 to \$30 million in April 1982. In addition, about \$11 million in payments to DOE have been deferred several times. Due to shrinking credit availability there is a deficiency of at least \$21 million which must be resolved in the next nine months. If another tax payment crisis occurs in the Spring of 1982, as it did in the Spring 1981, Met Ed will not have the lines of credit available to it to meet these needs. Even if the Spring of 1982 obligations are met, however, the financial problems are not solved because Met Ed has a bond issue of about \$50 million maturing in the Spring of 1983, as well as its tax payment for that year. Therefore, the total additional capital required in April 1983 will be about \$80 million. The company anticipates having to meet these obligations from internally-generated cash resources.

Rate relief is clearly needed by GPU in order to generate the necessary cash to meet its needs. And this rate relief can come only from the State regulatory commissions of Pennsylvania and New Jersey. These commissions, therefore, literally have the future of GPU and its customers in their hands. Given the past regulatory actions of the commissions, there is no reason to expect that lenders would be willing to come to the aid of GPU. These commissions will have to give a strong, clear signal that they are willing to restore the financial viability of the companies

before anyone will be willing to extend GPU the lines of credit it needs for its operations. Since the financial rebuilding of GPU will take time, we believe it is imperative that the commissions immediately begin to restore the companies' financial viability.

Fortunately, there is sufficient time to take corrective action. The time should be used as advantageously as possible to allow the company to regain its financial health, thereby ensuring continued power supplies to its customers. We cannot over-emphasize the critical importance of the state commissions to act as an integral part of this rebuilding process.

Mr. Chairman, this concludes my prepared statement. I will be happy to answer any additional questions you might have on this matter.

SCHEDULE OF FEDERAL AGENCY
COSTS IN RESPONSE TO THE
THREE MILE ISLAND ACCIDENT

Department of Energy			
March 28, 1979 to July 15, 1979	\$	1,623,000	
1980		5,988,000	
1981		6,500,000	
Subtotal - DOE			\$ 14,111,000
Federal Energy Regulatory Commission			
1980		14,000	
1981		5,040	
Subtotal - FERC			19,040
Environmental Protection Agency			
Region			
1980		6,500	
1981		6,500	
Headquarters			
1980		3,700,000	
1981		6,980,000	
Subtotal - EPA			10,693,000
Nuclear Regulatory Commission			
1979		24,400,000	
1980		107,100,000	
1981		118,800,000	
Subtotal - NRC			250,300,000
Federal Emergency Management Agency			
1979 - Short-term Response		12,710	
1979 - Overall Planning Effort		10,000	
1980		25,000	
1981		25,000	
Subtotal			72,710
Total			
1979 - 1980 Actual Expenditures	\$	142,879,210	
1981 Estimated Expenditures		<u>132,316,540</u>	
Total Expenditures			<u>\$275,195,750</u>

SCHEDULE OF FEDERAL ENERGY
EMERGENCY AND NON-EMERGENCY
COSTS FOR THREE MILE ISLAND

<u>AGENCY</u>	<u>COST</u>		<u>TOTAL</u>
	<u>Emergency</u>	<u>Non-emergency</u>	
Department of Energy	\$ 1,623,000	\$ 12,488,000	\$ 14,111,000
Federal Energy Regulatory Commission	-	19,040	19,040
Environmental Protection Agency	-	10,693,000	10,693,000
Nuclear Regulatory Commission	24,400,000	225,900,000	250,300,000
Federal Emergency Management Agency	<u>12,710</u>	<u>60,000</u>	<u>72,710</u>
Total	<u>\$26,035,710</u>	<u>\$249,160,040</u>	<u>\$275,195,750</u>

