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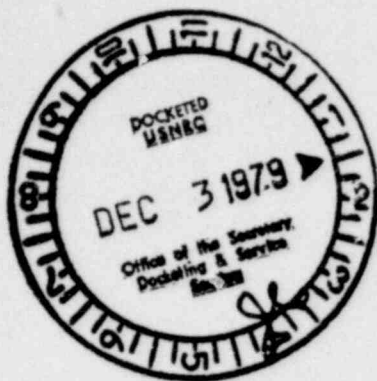
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Stenographic Transcript Of

HEARINGS

Before The

SUBCOMMITTEE ON NUCLEAR REGULATION OF THE  
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS



# UNITED STATES SENATE

THREE MILE ISLAND CLEANUP

WASHINGTON, D.C.

November 8, 1979

MILTON REPORTING, INC.

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TESTIMONY OF:

PAGE

MR. HERMAN DIECKAMP, President of General  
Public Utilities, and GPU Service  
Corporation, Acting President of  
Metropolitan Edison Company

MR. JAMES W. THIESING, Project Manager,  
Bechtel Corporation

MR. RICHARD WILSON, Acting Director for  
Recovery, General Public Utilities  
Service Corporation

MR. HAROLD DENTON, Director, Office of  
Nuclear Reactor Rkgulation, NRC

MR. RICHARD VOLLMER, Assistant Director for  
Systems and Projects, Office of Nuclear  
Reactor Regulation, NRC

9

MAYOR ALBERT WOHLSEN, Lancaster, Pennsylvania

MS. JUDITH JOHNSRUD, Environmental Coalition  
on Nuclear Power

MR. BRUCE SMITH, Chairman of the Board of  
Newberry, Pennsylvania Township

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HEARINGS ON  
THREE MILE ISLAND CLEANUP

- - -

THURSDAY, NOVEMBER 8, 1979

United States Senate,  
Subcommittee on Nuclear  
Regulation of the Committee on  
Environment and Public Works,  
Washington, D. C.

The Subcommittee met at 9:30 a.m., in Room 4200, Dirksen  
Senate Office Building, Hon. Gary Hart (Chairman of the  
Subcommittee) presiding.

Present: Senators Randolph, Hart, Stafford and Simpson.  
Senator Hart. Hearing will come to order.

Today's hearing, and the one that we will hold tomorrow,  
constitute the first Congressional review of the cleanup and  
recovery operations now underway at the site of the Three  
Mile Island nuclear accident.

These are, in my view, extremely important hearings.  
Coping with the radioactive debris of the accident is at least  
as important to the future development and regulation of nuclear  
power as the cause and the events of the accident itself.  
More important, actions now being planned and taken at Three  
Mile Island involve major health and safety questions.  
Although the situation inside the reactor of the damaged plant

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1 is now stable, each step to be taken in the decontamination and  
2 dismantling operation will involve major health hazards that  
3 have to be fully anticipated.

4 It is extremely disturbing, therefore, to learn from the  
5 Subcommittee's investigative staff, in a memorandum being  
6 released today, that "more than seven months have elapsed  
7 since the day of the accident, but there is still no overall  
8 plan for recovery." Our preliminary findings indicate that  
9 the Nuclear Regulatory Commission appears to be withholding  
10 guidelines for such a plan until the utility makes its proposal  
11 while the utility position is that such a plan cannot be  
12 developed until specific regulatory guidelines are provided by  
13 the NRC. So we now seem to find ourselves in a situation where  
14 the NRC and Metropolitan Edison are each waiting for the other  
15 to make the first move. Meanwhile, cleanup at Three Mile  
16 Island proceeds on a step-by-step basis without an overall plan.  
17 This is a situation not likely to generate a high degree of  
18 public confidence, nor perhaps good results either. We will  
19 want to explore the problem closely during these hearings.

20 Recovery from the TMI accident, according to the  
21 investigation staff, presents "challenges and uncertainties  
22 that are unprecedented in the commercial nuclear industry."  
23 Recovery costs, including the cost of replacement power, is  
24 estimated to be as high as \$1.8 billion. The entire operation  
25 will take at least four years and require more than one million

1 man-hours. Unique tools and procedures will have to be  
2 employed for removing, transporting, storing and disposing of  
3 unprecedented quantities of nuclear waste materials, including  
4 up to ten million gallons of radioactive fluids and the highly  
5 radioactive core itself.

6 Clearly, recovery from a nuclear accident is a new factor  
7 in the nuclear power equation. The outcome of the recovery  
8 operation is by no means certain in technical, legal, social  
9 or financial terms. We have a long road to travel before the  
10 plant can be returned to a safe condition. It is crucial that  
11 industry and government representatives work as cooperatively  
12 as possible and not allow themselves to be overtaken by events.  
13 We cannot afford surprises with a severely damaged 900 megawatt  
14 reactor on our hands.

15 We will be hearing today from the principal industry and  
16 NRC technical experts who are responsible for recovery operation  
17 at the TMI site. We also will be hearing from state and local  
18 officials and private citizens regarding their concerns about  
19 how the cleanup and recovery operations are proceeding.

20 I am interested in learning how the utility and the NRC  
21 are dealing with the more immediate problems of decontaminating  
22 water from the auxiliary building and of removing radioactive  
23 gas from the containment building as a first step toward gainin  
24 entry and eventual access to the core. I am also interested in  
25 learning the degree to which the surrounding community is being

1 kept informed of operations at the TMI site and the degree of  
2 confidence that members of the community have in the safety of  
3 these operations.

4 Finally, we will look into the question of long-range  
5 planning and coordination to ensure that all potential problems  
6 are fully anticipated and safely acted upon. In large measure,  
7 the degree of confidence that Americans have in nuclear power  
8 will be contingent upon the success of these operations. Nucle  
9 power must be deemed to be safe in all respects, including  
10 recovery from an accident. The health effects of the TMI  
11 accident, to our knowledge, have been minimal. But the accident  
12 will not be over until the last pound and pint of debris is  
13 safely disposed of. The major issue before us today is whether  
14 cleanup and recovery can be achieved swiftly, economically,  
15 and, above all, safely.

16 Senator Simpson.

17 Senator Simpson. Thank you very much, Mr. Chairman. I  
18 look forward, too, with keen interest in our hearings today on  
19 recovery operations at the Three Mile Island site.

20 Most of the Subcommittee's previous efforts, as well as  
21 those of the other investigations have appropriately, I think,  
22 been principally focused on the accident itself. Of course,  
23 today's hearing provides us an opportunity for hopefully a  
24 clearer understanding of the present situation at the site in  
25 terms of both the existing risks and uncertainties and the

1 status of planning and preparedness for dealing with this  
2 unprecedented cleanup operation. Clearly, there are technical  
3 problems that must be addressed to ensure continued stability  
4 of the Three Mile Island plant and to proceed with the various  
5 steps in restoring the site to use.

6 Our investigation has disclosed that as time passes,  
7 certain equipment now being relied upon to cool the reactor  
8 and to contain the radioactive waste has become more susceptible  
9 to failure and, Mr. Chairman, I'll be interested in hearing from  
10 our witnesses concerning the seriousness of these present  
11 problems and the extent to which they require decisions on  
12 subsequent cleanup actions within the near future.

13 I'm especially interested in hearing of the status of  
14 efforts by both the general public utilities and the NRC to  
15 plan the recovery process. Here, our investigation discloses  
16 that many technical challenges remain, including the removal  
17 of the radioactive atmosphere in the containment,  
18 decontamination of water in the containment and decontamination  
19 of the containment itself, storage, transportation of disposal  
20 of the radioactive waste generated during cleanup, and removal  
21 of the damaged core. It seems to me, that these unique  
22 technical challenges demand a very careful and comprehensive  
23 planning effort to assure that the necessary work is done  
24 properly, within the time period that's required, and with  
25 minimal risks to the health and safety of the surrounding

1 communities and the workers at the site. Mr. Chairman, in that  
2 regard, I'm concerned that adequate progress may not be taking  
3 place in the planning efforts of the utility and the NRC on  
4 these recovery operations.

5 The utility seems to be taking the position that final  
6 plans cannot be made until the NRC's regulatory requirements  
7 are in place. While the NRC staff has prepared just such a  
8 set of regulatory requirements, the Commission has not as yet  
9 acted upon them. I should be interested to hear the views of  
10 our witnesses on the need for a comprehensive plan for cleanup  
11 by the utility and for a definitive set of regulatory  
12 requirements for cleanup by the NRC at the outset of the recovery  
13 activity as well as views of those witnesses on whether adequate  
14 progress is now being made.

15 Recovery process, I think, presents management challenge  
16 of major proportion of both the NRC and the utility and, I think  
17 we should assure ourselves that both are prepared to meet it  
18 fully and efficiently.

19 Mr. Chairman, another challenge presented, certainly both  
20 to the NRC and the utility is the need to establish or at least  
21 to reestablish public confidence and understanding in their  
22 recovery programs. The Kemeny Commission has well documented  
23 the psychological trauma occasioned by the accident as felt by  
24 the members of the surrounding communities. It is essential  
25 then that the recovery program not become a new source of



1 continued public anxiety. As I see it, two essential ingredients  
2 in avoiding further public anxiety would be the avoiding of  
3 further crisis or major situations in favor of a planned  
4 step-by-step approach to recovery, and assuring the full public  
5 review, comment, and acceptance by the public of those recovery  
6 plans in advance.

7 I should like to hear from our witnesses, including those  
8 who reside in the vicinity of the plant, as to what efforts are  
9 now underway to accomplish those objectives and how those  
10 efforts have been.

11 Finally, Mr. Chairman, I look forward to hearing from our  
12 witnesses on the valid financial questions surrounding the  
13 recovery problem, including the cost of these activities and  
14 the ability of the utility to meet those costs.

15 Thank you very much.

16 Senator Hart. Thank you Senator Simpson, Senator Stafford

17 Senator Stafford. Thank you, Mr. Chairman, I have no  
18 statement. I'm here as a very interested member of the Committee  
19 to hear what the witnesses have to say.

20 Senator Hart. Pleased to have you here, particularly as  
21 ranking minority member of the full Committee.

22 We have two panels this morning, first a technical panel  
23 and that will be composed of five individuals representing the  
24 utility as well as the Nuclear Regulatory Commission.

25 Gentlemen, will you come forward; Mr. Herman Dieckamp,

1 President of General Public Utilities and General Public  
2 Utilities Service Corporation, Acting President of Metropolitan  
3 Edison; Mr. Richard Wilson, Acting Director for Recovery, Gener  
4 Public Utilities Corporation; Mr. James Thiesing, Project Manag  
5 of Bechtel Corporation; Harold Denton, Director of the Office  
6 of Nuclear Reactor Regulation of the NRC; Mr. Richard Vollmer,  
7 Assistant Director for Systems and Projects Office of Nuclear  
8 Reactor Regulation of the NRC.

9 The rules of the Committee, gentlemen, of course, this  
10 is an investigation that we have undertaken, is to swear in our  
11 witnesses. With that understanding, if you would all stand to  
12 be sworn.

13 The testimony you are about to give before this Committee  
14 do you each swear and affirm that the testimony will be the  
15 truth, and nothing but the truth, so help you God?

16 Mr. Dieckamp. I do.

17 Mr. Wilson. I do.

18 Mr. Thiesing. I do.

19 Mr. Denton. I do.

20 Mr. Vollmer. I do.

21 Senator Hart. Mr. Dieckamp, staff informs me that you ha  
22 an opening statement on behalf of GPU and Met-Ed and if you wou  
23 be prepared to present that at the present time, we would  
24 appreciate it if you could keep that to ten minutes or so, if  
25 possible.

1 TESTIMONY OF HERMAN DIECKAMP, PRESIDENT  
2 OF GENERAL PUBLIC UTILITIES, AND GPU SERVICE  
3 CORPORATION, ACTING PRESIDENT OF METROPOLITAN  
4 EDISON COMPANY; RICHARD WILSON, ACTING  
5 DIRECTOR FOR RECOVERY, GENERAL PUBLIC  
6 UTILITIES SERVICE CORPORATION; JAMES W.  
7 THIESING, PROJECT MANAGER, BECHTEL CORPORATION;  
8 HAROLD DENTON, DIRECTOR, OFFICE OF NUCLEAR  
9 REACTOR REGULATION, NRC; AND RICHARD VOLLMER,  
10 ASSISTANT DIRECTOR FOR SYSTEMS AND PROJECTS,  
11 OFFICE OF NUCLEAR REACTOR REGULATION, NRC

12 MR. Dieckamp. Senator Hart, since that is submitted, I  
13 think perhaps in the interest of time, we might make this as  
14 brief as possible, if not waive the entire thing.

15 Senator Hart. The text would appear in the record, if you  
16 would care to summarize the principal points, that would be  
17 acceptable.

18 Mr. Dieckamp. Okay. I think the main thing to point  
19 out is that we are faced with a significant quantity of  
20 radioactive materials stored at Three Mile Island site, and  
21 that these are stored in a way that is less reliable than would  
22 have been the case had the plant been operating, and we think  
23 that it's important that we proceed deliberately to; first,  
24 confine those materials or immobilize them; and, secondly, to  
25 completely remove them from the site.

1           Senator Hart. Excuse me, Mr. Dieckamp, would you pull  
2 that microphone --

3           Mr. Dieckamp. We think it's important that these materials  
4 be immobilized first; and, secondly, completely removed from  
5 the site and placed in storage or disposal facilities  
6 specifically designed and licensed for that purpose. We do  
7 not feel that these materials present a specific immediate  
8 threat to the local population, but we do think that prudence  
9 requires deliberate progress towards the reduction and ultimate  
10 elimination of potential vulnerability of the area to future  
11 uncertainty, and we are convinced that the removal of these  
12 materials from Three Mile Island is in the best interest of the  
13 neighbors of the plant.

14           Shortly after the accident, we engaged -- I'm on the  
15 bottom of page three -- we engaged the Bechtel Corporation to  
16 study the entire program for entry in decontamination and  
17 restoration of the plant to surface. In early July, Bechtel  
18 released its preliminary report which really covered just phase  
19 one, which is the decontamination portion. The second phase  
20 report, which would cover fuel removal, is due in about one  
21 month, and we will be continuing that study effort.

22           In terms of overall preliminary study, I would identify  
23 the three major initial conclusions of that study: First,  
24 although a decontamination effort of this magnitude is a major  
25 undertaking, the technology and techniques are known and have

1 been previously demonstrated and can be safely accomplished.

2 Two, the Bechtel estimate of cost of decontamination and  
3 reactivation of Unit 2 is approximately \$320 million. This  
4 figure includes \$80 million for contingencies, but does not  
5 include replacement of the fuel core. At the time of the  
6 accident, the investment in the core was \$35 million, with  
7 increased uranium prices, enrichment and fabrication costs,  
8 a new core would cost \$60 to \$85 million.

9 Thirdly, absent extraordinary legal, political, or  
10 regulatory delays, which could also add to the cost,  
11 decontamination and reactivation should take about four years.

12 I understand that the Committee has a copy of the Bechtel  
13 reports. Based upon this study, GPU is using an estimate of  
14 \$400 million as the cost to decontaminate and recommission, and  
15 restart schedule in Mid '83. The company carried \$300 million  
16 in property damage insurance, which should be available to  
17 offset these costs. None of the foregoing numbers, includes  
18 the cost of replacement power. We must emphasize that the cost  
19 and schedule of recovery of TMI-2 must remain uncertain until  
20 entry and decontamination efforts can provide an experience bas  
21 for any reestimate and until the regulatory and public  
22 acceptance environment has stabilized.

23 But, the cleanup is more than a technical matter. It  
24 involves activities which have been perceived by local public  
25 as imposing an unknown hazard. The accident has made some

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1 segments of the public so conscious and fearful of radiation  
2 that there's a great tendency to accept nothing. Federal  
3 regulations and plant technical specs are in place, governing  
4 the handling, transportation and discharge of radioactive  
5 materials. These regulations are the result of extensive  
6 review and study, and all relevant data and health effects.  
7 They have been in place for a long time. We are obligated, and  
8 our employees and management are committed to the full  
9 implementation of, and to the compliance of these regulations.

10 Beyond that, the incentives for cleanup the residuals  
11 of the accident, recovery effort constitutes an important  
12 opportunity to add to the nation's nuclear experience.  
13 Discussions have been underway for some time with the DOE, NRC,  
14 and EPRI. We would urge the nation take full advantage of this  
15 opportunity for learning and that such learning not be limited  
16 by the ability of our company or our customers to endure the  
17 costs. Thank you.

18 Senator Hart. Thank you, Mr. Dieckamp.

19 (Prepared statement of Mr. Dieckamp follows.)  
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1           Senator Hart. Mr. Denton, do you have any opening  
2 comments for the NRC?

3           Mr. Denton. Yes, I would like to make a few comments.  
4 Of the three issues before the Subcommittee today, it's true  
5 that our focus has been on safety of the continuing operations.  
6 We probably could have moved swiftly and we have paid not a lot  
7 of attention economically, perhaps, but right after the accident  
8 when -- I think was in June -- we established a task force  
9 devoted to TMI recovery operations headed by Mr. Vollmer, on  
10 my left.

11           We assigned about 29 individuals to that group, and it's  
12 had first call on our resources since that time. So, all the  
13 operations that have gone on at the site since the accident  
14 have been reviewed and approved by the NRC. The plan for  
15 eventual recovery has been the subject of a lot of informal  
16 discussions between the staff and the licensee, and I think  
17 it's time to formalize those discussions.

18           A meeting has been planned this afternoon to discuss the  
19 options for removing the krypton from the containment. I think  
20 though I agree with the Committee that it's time to get a formal  
21 plan in front of the applicant before it's time for us to set  
22 forth what our requirements will be, I think our efforts during  
23 the summer will focus more on the EPICOR operation and the impact  
24 of those.

25           With regard to the need to keep the public informed in th

1 area, we in the State did agree with this objective some time  
2 ago and initiated a series of bi-weekly meetings in various  
3 communities around the plant in which we, the State, and the  
4 utility discuss our activities in a public forum.

5 That kind of concludes my opening remarks.

6 Senator Hart. Thank you very much, Mr. Denton.

7 Chairman Randolph.

8 Senator Randolph. Thank you Mr. Chairman. I will ask  
9 the privilege of placing my statement in its entirety in the  
10 record and to just speak very, very briefly.

11 Senator Hart. Without objection.

12 Senator Randolph. I believe, Mr. Chairman and members of  
13 the Subcommittee, that the conclusion is inescapable, the  
14 post-accident experience of Three Mile Island will have profound  
15 effects on the nuclear industry and on utilities generally.

16 A number of pending regulatory and judicial proceedings  
17 will tend to shape this experience. The primary concern of  
18 this inquiry in the Subcommittee, and I believe I share the  
19 thinking of other members, but I would rather not have them feel  
20 that I'm joining them with me, but the primary concern of our  
21 own inquiry into the post-accident phase must be always to assess  
22 the performance of the Nuclear Regulatory Commission. That's  
23 the Subcommittee's job.

24 We are Nuclear Regulatory Subcommittee, is that right,  
25 Mr. Chairman. That was the beginning of the Committee itself.



1 And so, as the performance of the Nuclear Regulatory Commission  
2 in this period is being tested, and I think we must assure that  
3 the Commission possesses the powers and the procedures necessary  
4 to protect the public health and safety.

5 I think it's essential that public sentiment certainly  
6 be carefully considered, very, very carefully weighed. The  
7 citizens of the areas surrounding Three Mile Island have  
8 experienced a trauma. Other citizens have been spared at least  
9 as of this date. In addition, both the letter and the spirit  
10 of federal environmental law must be complied with. The many  
11 and varied environmental implications for recovery should  
12 certainly be fully considered before proceeding, I think.

13 I thank you.

14 Senator Hart. Thank you Senator Randolph.

15 (Prepared statement of Senator Jennings Randolph follows.  
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1           Senator Hart. Gentlemen, thank you for your presence her  
2 today. Let me begin by directing a question to Mr. Wilson, who  
3 I understand is the principal responsible official for this  
4 operation.

5           Mr. Wilson, has Met-Ed or GPU approved a comprehensive  
6 detailed plan to clean up Unit 2 that deals with at least the  
7 following four factors:

8           Clean up the radioactive water; removing the krypton 85  
9 gas in the containment building; removing the nuclear core; and  
10 shipment and storage of the water gas in core.

11           Mr. Wilson. The actual planning on all of these subjects  
12 was initially started, I believe, in approximately Mid April  
13 or later part of April, with the engagement of the Bechtel  
14 Corporation to study independently of the activities currently  
15 going on on site the issues of the eventual cleanup of the  
16 plant as restoration to service.

17           Approximately in early part of July, the first phase of  
18 the Bechtel report was issued, which dealt with the  
19 decontamination of the plant.

20           A second phase of the Bechtel study, which deals with  
21 the removal of the fuel and the disposal of the fuel from the  
22 reactor core, is due to be issued in approximately three to  
23 four weeks.

24           The third part of the Bechtel study, which deals with  
25 recommission of the plant, will follow sometime in the future.

1           Of necessity, the technical data which Bechtel had to work  
2 with in developing those claims was extremely limited. The  
3 plans, therefore, represent in our opinion a very conservative  
4 approach to what the problem is on the site.

5           We know, for example, that the contamination and the  
6 radiation levels inside the containment building that Bechtel  
7 used initially are probably about two orders of magnitude higher  
8 than we believe they exist today. For these reasons, the scope  
9 of the technical data that was available in that point in time,  
10 Bechtel is now in the process, as we move forward and gather  
11 additional technical information, of recycling or reviewing the  
12 decontamination technical plan.

13           That review and that recycling will be available  
14 approximately as early as the first of the year. With regard  
15 to the specific cleanup of the material on the site, there is  
16 a plan in effect for the processing and cleanup of water on  
17 the site. There are really two kinds of water that we talk  
18 about on the site. Water which predominantly is contained in  
19 tankage or systems in the auxiliary buildings outside of the  
20 principal containment building for the reactor. This water is  
21 characterized by levels of activity from a few, to 50, 60, or 7  
22 microcuries per milliliter.

23           The system in place, called EPICOR-2, that system was  
24 authorized to begin processing of water approximately two weeks  
25 ago. To date, we have processed, or as of Monday of this week,

1 we'd processed about 19,000 gallons out of the approximately  
2 375 or 400,000 gallons of water, which we characterized by the  
3 activity levels which I mentioned.

4 The performance of EPICOR-2 to date has been as measured  
5 by decontamination factors, which are the removal of radioactive  
6 material from the water, and we only have measurements at this  
7 point in time of cesium. Cesium is the principal contaminant.  
8 The decontamination factors are about two orders of magnitude  
9 better than the design basis of the system. We expect to be  
10 able to continue to process with this system and are putting  
11 in place on the site additional storage tankage for the clean  
12 water.

13 The higher-activity water, which is characterized by that  
14 which is in containment or in the reactor system itself, there's  
15 a -- an additional demineralizer or ion exchange type system  
16 being engineered and developed to handle that water. We call  
17 that the submerged demineralizer system. It's expected to be  
18 available and in operation further on in 1980. That system will  
19 in a very similar manner, process the water from containment.

20 We are being assisted on that system by experts from the  
21 Savannah River Installation, Oakridge National Laboratories, and  
22 by Allied Gulf, who has expertise on their environmental  
23 facility.

24 Senator Hart. Mr. Wilson, I think we're most concerned  
25 about the core and also the procedure of the plans that you have

1 being presented for approval to the NRC. You've stated several  
2 times that the Bechtel Corporation had done part of the plans  
3 and is going to complete the next part. First of all, does  
4 that represent, I guess the GPU or Met-Ed comprehensive plan  
5 for cleaning this plant up, and if so, do you intend to submit  
6 it as such to the NRC for approval? If not, what do you intend  
7 to do with regard to that?

8 Mr. Wilson. It represents the basis for a final ultimate  
9 plan for decontamination, because I indicated the technical  
10 data suggests that modifications should be made in that plan.

11 For example, a part of the plan as originally conceived  
12 by the Bechtel used the containment building spray system as a  
13 means of remote decontamination inside containment prior to  
14 entry. The current data which has been gathered on activity  
15 levels suggest that's not required, so in the process of  
16 interating those types of things, the basic concept of the plan  
17 in terms of sequence of events and the types of activities that  
18 have to be carried out, in fact, does represent our current  
19 plan.

20 Senator Hart. Then has it been submitted to the NRC?

21 Mr. Wilson. It has been made available to the NRC. I'm  
22 not sure it has been submitted as such, directly requesting  
23 approval per se.

24 Senator Hart. When do you anticipate doing that?

25 Mr. Wilson. I would hope to do that after the current

1 iteration, currently underway by Bechtel.

2 Senator Hart. With regard to the core, I think we would  
3 be interested in knowing what the situation is. Our informatio  
4 is that nearly 8 minutes after the accident, it's still giving  
5 off about 450,000 watts of decay heat. To the laymen, I'm told  
6 heat from about 4,500, hundred-watt lightbulbs in a small  
7 confined room. How long will the core continue to give off thi  
8 much heat and are you satisfied of the stability of the present  
9 method of cooling the core?

10 Mr. Wilson. The core will continue to give off heat in  
11 some degree for an indefinite period of time, but as time goes  
12 on, the magnitude of heat will continually decrease, early next  
13 year the power production of the core should be down to somethi  
14 between 300 and 350 kilowatts, and by the end of 1980, will be  
15 down to about 50 to 100 kilowatts of power.

16 So, there is a constant decrease in power. Right now,  
17 we are extracting heat from the reactor core by a dependence  
18 on natural circulation within the primary system to the steam  
19 generators, which are a normal part of the primary system. We  
20 then boil water on the secondary side of the steam generator,  
21 take that boiled water steam to the normal condenser system  
22 and condense the water. Eventually, at some point in time, in  
23 the recovery operation, when it's necessary to secure access  
24 to the core, natural circulation will not function; therefore,  
25 we are preparing a system which we -- mini decay-heat system,

1 mini being a description of the physical size and heat removal  
2 capacity of the system -- which will place the core back into  
3 a very nominal force cooling mode. That system is currently  
4 being installed, and sometime after the first of the year, we  
5 will anticipate switching the cooling load from current situation  
6 to that situation, that will be the mode of cooling until such  
7 time as the head is removed and the fuel extracted.

8 Senator Hart. Well, under the current procedures, is  
9 there any possibility in your judgment for accidental fuel  
10 melting beyond that which has already occurred, and, if there  
11 were, what would be the consequences of that?

12 Mr. Wilson. I don't believe the current heat production  
13 in the core, there's any credible set of circumstances which  
14 would lead to melting of the core. It's not sufficient heat.

15 Senator Hart. Mr. Denton, do you concur in that judgment?

16 Mr. Denton. At these very low heat levels, there's no  
17 possibility that there would be a core melt through the reactor  
18 vessel in the sense that the so-called "China Syndrome" occurred.  
19 I'm not quite so sanguine about whether or not lost all water  
20 and no air flowed through the core, whether or not temperatures  
21 might not approach melting somewhere in the fuel rods themselves  
22 but I'm not concerned about core meltdown in this sense of  
23 reaching the level of containment because of it.

24 Senator Hart. But there could be further damage to the  
25 fuel?

1 Mr. Denton. But this is possibly a complete loss of  
2 cooling, there are certain backup systems that could be brought  
3 into service if the present system were to malfunction, so  
4 I have no concern about the safety of the core today.

5 But, maybe Mr. Vollmer, who is working day-to-day would  
6 like to elaborate.

7 Senator Hart. Mr. Vollmer.

8 Mr. Vollmer. I think what Mr. Denton says is correct.  
9 Most of the products in the core that have high volatility have  
10 already been released from the system or have decayed away.  
11 So even if a small portion of the core were to obtain high  
12 temperatures, it would not pose the usual threat to the public  
13 health and safety. It would be basically solid fission products  
14 which, if released from the core, would likely condense the  
15 primary system or containment and not pose an outside threat.

16 Senator Hart. One final question from me to both you  
17 Mr. Vollmer and Mr. Wilson. As I understand it, the water level  
18 in the core in the containment is rising slowly in the process  
19 of keeping the core cool. Can that slowly rising water knock  
20 out or render inoperative any key valves or other mechanisms  
21 for controlling or monitoring the core?

22 Mr. Vollmer. Well, we have been keeping careful track  
23 of the water level in the reactor building. It's currently at  
24 a level approximately two feet below the nearest valve or piece  
25 of equipment that we would like to keep in an operatable state



1 for a long period of time, that is the decayed heat removal  
2 system valves. Now the leakage rate of about 500 gallons per  
3 day, and I believe it's actually lower than that now, we would  
4 project approximately a foot or so rise in six months. About  
5 two inches or so a month.

6 So, the rapidity of the rise is pretty slow, and we have  
7 fairly good knowledge of each electrical component or each  
8 component that might be jeopardized by the water level as we  
9 go along, and I don't see anything in the near term, say within  
10 a year that would have any influence on the safety of operation.

11 In addition, since a foot only represents about 70,000  
12 gallons, and we do have the capability, if necessary, to order  
13 the licensee to remove some of the water in the reactor building  
14 if it did pose a threat, 70,000 gallons is not a very large  
15 inventory when you consider the capacity of the auxiliary  
16 building. It's about 400,000 gallons, once it's cleaned out by  
17 the EPICOR system.

18 So, I think we do.

19 Senator Hart. Your answer is no to the question of whether  
20 valves or other instruments can be knocked out?

21 Mr. Vollmer. If water was raised, yes, equipment could  
22 be knocked out. As I said, I think we have a considerable amount  
23 of margin. If we were approaching the point in which a valve  
24 could be knocked out, as we already did with one of the decay  
25 removal valves, that valve could be opened and therefore, we

1 would have access to the system to the open valve. We would  
2 rather leave it closed to provide additional assurance of full  
3 containment isolation, but the valve could be open in the event  
4 it needed to be.

5 Senator Hart. Senator Randolph.

6 Senator Randolph. Thank you very much, Mr. Chairman.  
7 I have asked for this opportunity, and I appreciate you, Mr.  
8 Chairman and Senator Simpson, allowing me to just make a  
9 comment and ask a question.

10 First, may I note the presence of Chairman Joseph Hendrie  
11 of the Nuclear Regulatory Commission here today. He sits as  
12 an observer, I'm sure, but I think it's very wholesome -- I  
13 think he indicates his concern by being here personally today  
14 to hear these technical matters discussed.

15 You, Mr. Wilson, have mentioned the EPICOR-2 system. I  
16 think that I will ask, Mr. Chairman, to place a letter in the  
17 record in its entirety which arrived yesterday, addressed to me  
18 and it comes from a wife and husband, Alice and George Herman.  
19 They're citizens of the area of Three Mile Island. I read a  
20 part of their letter:

21 "We're concerned about the health hazards relating to the  
22 cleanup operations. The EPICOR-2 system used to begin treating  
23 the radioactive water, can filter some, but not all -- " they  
24 have underscored those three words -- "of the radioactive  
25 particles from the water. Radioactivity cannot -- " and they

1 underscore that again -- "be filtered from the water. They have  
2 treated some of the water with the system and are storing it  
3 with the hope that they will be able to dump it in the  
4 Susquehanna River in the future." And then the letter goes on  
5 with favorable whims and unthinkable situations. They end this  
6 paragraph: "We have had enough radiation already."

7 Now, would you comment on such a letter.

8 Mr. Wilson. It's true that the EPICOR system, being ion  
9 exchange system, does not basically affect the tritium levels  
10 in the water, it only affects the ion-type material in the water.  
11 The water is being stored. We are not now, or do we have  
12 immediate plans to discharge that water. In fact, they are  
13 under a probation from the NRC to not do so.

14 There are options of treating that water other than  
15 discharge into the River, although I would note that discharge  
16 could take place technically at concentrations well under  
17 current EPA drinking water standards. But the water can be  
18 solidified into concrete, it can be treated in other ways, such  
19 that it does not become a material which is added to the River.

20 Senator Randolph. Thank you, Mr. Wilson. Thank you,  
21 Mr. Chairman.

22 (Letter referred to by Senator Randolph follows.)

23 COMMITTEE INSERT

24

25

1 Senator Hart. Senator Simpson.

2 Senator Simpson. Mr. Wilson, do you see any  
3 institutional barriers to the efficient and effective cleanup  
4 of the facility, if so, what are those barriers?

5 Mr. Wilson. I think I would characterize the cleanup  
6 operations, part of the cleanup operations at the site into th  
7 two categories of basically technical problems and technical  
8 issues and institutional issues. The institutional issues that  
9 I think are very important for the cleanup of the material at  
10 the site are one, stability of the regulatory process; secondl  
11 a thorough and complete understanding by the local population  
12 surrounding the plant, the local political bodies and other  
13 political bodies in the State and in the country, as to what  
14 the situation is and what has to be done there; and a third  
15 issue, obviously, is the ability to finance that effort.

16 Senator Simpson. What about the public perception of  
17 the recovery process from the general conflict of nuclear  
18 versus non-nuclear?

19 Mr. Wilson. I personally believe that's an issue which I  
20 would hope would not come to bare in terms of the cleanup of  
21 the plant. That issue might come into focus and be part of  
22 the discussion on whether that plant is put back into service  
23 or is not put back into service, but from my point of view,  
24 technically, it's to everyones best interest to effect the  
25 cleanup and the decontamination and the pulling together and

1 adequate and safe disposal of radioactivity currently on that  
2 site.

3 Senator Simpson. Do the risks to the public and to the  
4 workers, to their health and safety, increase if these cleanup  
5 activities are delayed?

6 Mr. Wilson. It's my opinion that if there are unusual  
7 or extremely prolonged delays, I might characterize that as  
8 years in terms of the steps that have to be taken place, it  
9 would be my judgment that that would not be in the best  
10 interest of everyone concerned from a health and safety point  
11 of view.

12 Senator Simpson. How many truck shipments of radioactive  
13 waste will ultimately perhaps be required to remove the whole  
14 of the material from the site?

15 Mr. Wilson. I don't think we have the total number of  
16 that, because to some degree it depends what form it will  
17 eventually be removed from the site, but certainly will amount  
18 to be in the many, many hundreds of shipments.

19 Senator Simpson. Harold Denton, if I might follow up on  
20 what Senator Hart was asking. Something I'm interested in, too  
21 but I would pursue a bit. What is the risk of recriticality of  
22 the boron in the cooling waters not being contained?

23 Mr. Denton. The reactor is kept subcritical by a high  
24 amount of boron in the cooling system. This is an issue we  
25 were concerned about very early on. I have no concern about

1 recriticality at the current boron levels.

2 Let me ask Mr. Vollmer to elaborate on what the levels  
3 are. Recriticality, if it occurred, the core could conceivably  
4 begin generating power again.

5 Senator Simpson. That's the issue I'm addressing. What  
6 is the possible consequence of recriticality in connection with  
7 the boron flow, usage and content?

8 Mr. Vollmer. Well, Senator Simpson, I think we don't  
9 feel that the recriticality could happen, as Mr. Denton  
10 indicated, with the current boron concentrations. If we  
11 wanted to postulate that the boron could be depleted from the  
12 core environment in some way, and if a recriticality of some  
13 sort could occur, then I would suggest the option would be to  
14 charge the core with a high boron concentration using one of  
15 the available decay removal system pumps or the high-pressure  
16 injection. These pumps we have felt should be kept off.

17 I think the licensee also feels that way since the  
18 accident, because of their high flow. Again, we would concur  
19 with current boron concentration, even if control rods were  
20 not present and even if the core was configured in a most  
21 reactive way, but not chance of criticality would occur.

22 Senator Simpson. What would be the possible way in which  
23 the boron might be lost, what is the most --

24 Mr. Vollmer. Well, there is the possibility of boron  
25 precipitation, which usually occurs on the holder portions of

1 the surfaces in the primary system of the core environment  
2 being the hottest part of the primary system. It's not likely  
3 that it could occur there.

4 In addition, solubility of boron that is needed to  
5 sustain the core set critical is significantly lower than the  
6 temperature, or significantly lower than the amount which that  
7 temperature of water can sustain in solution. In other words,  
8 for the temperatures that we're talking about in the boron  
9 concentrations, they represent a situation that would not be  
10 expected to precipitate out the boron. It should be expected  
11 to stay in the solution.

12 Senator Simpson. A couple of other questions. Is there  
13 any nuclear waste storage or disposal facility that has agreed  
14 to accept the various nuclear wastes which have been or will  
15 be generated from this cleanup operation and recovery, and  
16 what efforts are underway by the NRC to make sure that there  
17 will be adequate storage and disposal facilities for those  
18 wastes, and how significant is that problem?

19 Mr. Denton. Senator, that's an institutional barrier that  
20 I wanted to add to Mr. Wilson's list. Some of the waste will  
21 be high-level waste, as opposed to low-level waste. And I'm  
22 sure you're aware there's considerable difficulty in the  
23 country today with disposal of low-level waste. It's not  
24 clear to me that the depositories for high-level waste will be  
25 available in the time frame of cleanup, and it may become

1 necessary that some of these wastes be stored on site till  
2 that issue is resolved.

3 Senator Simpson. What measures has the NRC adopted either  
4 on its own or in conjunction with State government or the  
5 utility to assure that the local population around the area  
6 is fully informed and consulted and participates in the full  
7 spectrum of knowledge as to what is going on in that facility  
8 near them?

9 Mr. Denton. Let me mention a few areas we've tried and  
10 then I'll let anyone else add their own. We're acutely aware  
11 of the need to keep the local citizens and governments informed  
12 We are still in the progress of acquiring an office building  
13 in Middletown and our intent would be to hold most of our  
14 meetings with the licensees and others in facilities where the  
15 public could observe and participate.

16 I mentioned the bi-weekly press meetings with the State  
17 and utility that are publicly attended. We are continually  
18 searching for ways to be sure that the public can observe and  
19 judge for themselves the adequacy of our actions there.

20 Mr. Vollmer. I would like to add to that. I think it was  
21 mentioned before that we have had a series of by-weekly meetings  
22 which the state acts as the moderator and the Met-Edison has  
23 been giving the public press and local officials the planning  
24 operations for the next few weeks or months to apprise  
25 everybody of what is going on.



1           Also, I think myself and my staff have taken advantage  
2 of many opportunities to participate in public meetings, town  
3 meetings, and even small groups, to answer people's questions  
4 and to try to understand their concerns and to factor those into  
5 our regulatory considerations.

6           Mr. Dieckamp. Senator, I would like to add that we  
7 certainly recognize that there's a great need to inform the  
8 public and in the process, to hopefully regain some public  
9 confidence in the operation of what's going on there. The  
10 briefings that have been underway now on this bi-weekly basis  
11 held in Harrisburg, I think, have been very useful. They've  
12 covered EPICOR in detail and several other subjects.

13           I would also like to mention that at the time that the  
14 Bechtel report was issued in early July, we immediately held  
15 a press conference that included public officials and members  
16 of the press and had made both volumes of the Bechtel study  
17 available, and I think I would estimate that as of today, we have  
18 probably distributed somewhere in the range of 100 to 150  
19 copies of that report in the hope that it would indeed give  
20 people some insight into the kinds of activities that we're  
21 going to have to undertake and what the time scale would be.

22           Senator Simpson. It would seem to me that from what some  
23 of the comments, and certainly from my reading, that the  
24 Bechtel report might be outdated even at the present time,  
25 even though it's very helpful, assuredly, but what are your

1 thoughts on that?

2 Mr. Dieckamp. Well, I think that's essentially true,  
3 and I thought about injecting some views to Senator Hart's  
4 earlier question about the formalness of that plan.

5 I think it's important to understand that that plan has  
6 a preliminary plan, that plan is going to be a dynamic plan  
7 because there are many elements of that plant that can only be  
8 refined as we progress and gain more detailed information  
9 so that we can firm up succeeding steps.

10 I think also, relative to the formality of that plan  
11 that's being submitted to the NRC for approval, I think one  
12 needs to think in terms of an overall plan which sort of lays  
13 forth the principal activities in their time scale, but then  
14 also think that as we approach each major segment of that plan,  
15 there will be a need for considerable expansion of the level  
16 of detail in the plan and, in my mind, it's at that level  
17 where the real meaningful kind of approvals take place.

18 I don't mean to suggest by that that we are reluctant  
19 about setting forth the plan, but I think the meaningful part  
20 of the approval comes when we get down to the real specifics,  
21 what are we going to do, how are we going to do it, and what's  
22 the impact on the public, what are the alternatives.

23 Senator Simpson. I think one of the most interesting  
24 sentences in that report was this language: It says, "Findings  
25 could be much different from these conditions assumed at this

1 time and could result in lower or higher costs and/or shorter  
2 or longer schedule than shown." That certainly gives a free  
3 range of action to say the least.

4 Mr. Dieckamp. Well, I'm sure that's an important caveat  
5 in there. I'm not sure how many times any of us experience  
6 opportunities for greatly reduced cost. But some of the things  
7 that have been going on recently at the site have been directed  
8 at this very issue of providing a better base point or a better  
9 characterization.

10 For example, the water samples that have been withdrawn  
11 from the containment building have been for that purpose, to  
12 verify the conditions of that water so that we'll have better  
13 information. One of the next steps that will be taken and one  
14 of the things where activities are pointing towards now, is to  
15 gain visual access to the containment building. Some people  
16 have said what are you going to see? We're hoping that we don't  
17 see anything that's far different than what we thought we  
18 should see, but on the other hand, we feel that it's  
19 important as we go along to provide verification of the  
20 assumptions as we move forward.

21 Senator Simpson. I read with interest that you're going  
22 to find something I think described as "flocculent and green"  
23 when you see it. I want to see that myself.

24 I have some other written questions, Mr. Chairman, and  
25 I'll submit those for the record. Thank you.

1           Senator Hart. Thank you Senator Simpson. Mr. Dieckamp,  
2           let me see if I can accurately interpret your answer.

3           You do not foresee a time when a comprehensive cleanup  
4           plan will be submitted to the NRC for approval, but rather,  
5           there will be sort of, to use your word, dynamic, peacemeal  
6           submissions for peacemeal approval of various elements of  
7           that. Is that correct?

8           Mr. Dieckamp. Well, I say that only in this sense that  
9           at any point along the way, we will have a plan available.  
10          That plan will reflect our best knowledge at that time. If  
11          it's felt meaningful or important to approve that plan at its  
12          various stages of progression, we from the point of view of the  
13          company, have no problem with that whatsoever. I do suspect  
14          that people would be concerned about whether approval of a  
15          plan which lacked considerable detail might be construed as a  
16          blank check and would be undesirable. But we will, I think,  
17          see a dynamic progression of this plan.

18          Senator Hart. To what degree is the absence of detail,  
19          the problem of just not having enough time, and to what degree  
20          is the problem of not having the guidelines from the NRC, as  
21          I indicated in my opening remarks? It seems to us a chicken  
22          and egg problem here. I'm trying to pin it down. You don't  
23          want to be locked into specific procedures that new facts may  
24          prove to outdate. On the other hand, the NRC can't approve  
25          the set of procedures until they're submitted to them.

1           You're talking about making something available. I'm  
2 trying to find out whether you feel you have to submit a  
3 plan or a date certain, and if you do, that you need NRC  
4 guidelines to pin down what it is you're supposed to submit.  
5 I want to find out from Mr. Denton whether he feels he is  
6 obligated to provide you some guidelines and if so, when he is  
7 going to do that. It's all too vague right now is, I guess,  
8 what I'm saying.

9           Mr. Dieckamp. For our own needs or any other needs, there  
10 has to be a plan, I think we recognized that early on when we  
11 initiated Bechtel study just a couple of weeks after the  
12 accident. I think certainly, the plan today probably lacks  
13 most from the amount of time and efforts that we have been  
14 able to put into it.

15           It's my understanding right now the work towards the  
16 second phase portion of it, namely the core removal, it's being  
17 pursued at a level of about 60 men within the Bechtel  
18 organization in addition to whatever people we have applied to  
19 it.

20           Now, with respect to the question of criteria, we have  
21 been preceding on the assumption that the existing regulations  
22 whether they are Appendix I or whether they are the specific  
23 in-place technical specifications of the plant, are the  
24 criteria that would pertain.

25           I was surprised to note the comment in your opening

1 statement that the company had expressed concern about the  
2 absence of criteria. I'm sure we have expressed concern about  
3 the need for criteria and the need for them to be stable, so  
4 that the plan has a good basis. But I know of no aspect of our  
5 effort or our relationship with the NRC that is today hung up  
6 because of a Alphonse/Gaston question about the criteria.

7 Now, on the question of --

8 Senator Hart. Excuse me, I'm told by the staff, Mr.  
9 Wilson has told our staff that he's been waiting criteria or  
10 guidelines, now, I just want to find out what's going on here.

11 Mr. Dieckamp. Well, let's ask Mr. Wilson.

12 Mr. Wilson. I had a discussion with your staff, I think  
13 the latter part of October, and the gist or the thrust of that  
14 discussion was really basically the one of stability of  
15 regulatory guidelines, not the fact that they do or do not  
16 exist.

17 Senator Hart. That they might be changed?

18 Mr. Wilson. That they might be changed. We're looking  
19 for a long-term plan for the restoration of that plant. For  
20 example, fuel removal might be a year and a half or more in  
21 the future. Many, many things have to take place prior to  
22 actually moving fuel and it's necessary that the stability of  
23 the regulatory guidelines be in place such that we can make  
24 those plans, and when it comes time to execute, we don't have  
25 a different environment.

1           Senator Hart. Is it your understanding that the NRC is  
2 in the process of upgrading or changing its criteria or  
3 guidelines?

4           Mr. Wilson. I think the NRC could answer that better  
5 than I can.

6           Senator Hart. But you have some reason for insecurity on  
7 this issue.

8           Mr. Wilson. I have some reason for concern because of the  
9 very large commitment of planning and resources which will  
10 result in actions substantially in the future.

11           Mr. Dieckamp. Senator, if I could suggest, it may not  
12 necessarily just be a matter of the NRC. If you look, for  
13 example, at the question of water release from the plant. If  
14 we were to be able to proceed on the basis of existing  
15 regulations and specifications, one would be able to proceed  
16 to discharge some of the water which was contaminated in the  
17 accident after having been processed. But the whole process,  
18 institutional process, has, in effect, frustrated that.

19           So, I think one of our concerns indeed is how confident  
20 can we be that in a set of criteria or regulations not only  
21 will be there as the basis for our planning and design effort,  
22 but will, in turn, be supported and allowed to function when  
23 it comes time to do something.

24           Senator Hart. Mr. Vollmer.

25           Mr. Vollmer. Yes, I want to mention Senator Hart, that at

1 a meeting in Hershey, which was attended by the public and  
2 local officials, on May 16, I stated at that time that we  
3 would require the licensee to meet the environmental  
4 regulations for the release of gaseous and liquid effluence  
5 from the cleanup and decontamination phases of the accident.  
6 These releases would, are those that are allowed under the  
7 technical specifications and under Appendix I, Part 50 for  
8 a normal operating plant.

9 I think at that time, we felt that even in the accident  
10 situation, that the technology permitted us to restrict release  
11 to this level. I think as Mr. Dieckamp has just mentioned  
12 however, that there may be some question in the -- there is  
13 some question in the minds of the citizenry as to whether or  
14 not these type of releases are adequate even though they would  
15 be allowed for a normally operating plant.

16 Senator Hart. Let me see if I can summarize the  
17 situation. I'm afraid we're about -- it looks to us anyway  
18 almost like an impasse, and tell me if this is an accurate  
19 or inaccurate statement of the case:

20 There are rules and regulations for the operation of  
21 reactors under normal conditions that permit, on some occasions,  
22 releases of gas and water. We have had an accident. The  
23 operating utility is trying to figure out how to clean up that  
24 accident, and some of the attempted cleanup involves the  
25 releases of gas and water. The NRC, however, has now said that



1 you can't release gas and water under certain conditions, and  
2 is trying to figure out how to clean up the plant, but doesn't  
3 know how many other changes the NRC is going to make in its  
4 normal operating procedures, rules, and regulations that might  
5 prevent it from cleaning up the accident.

6 Is that a fair assessment of where we stand, Mr. Denton?

7 Mr. Denton. That's a fairly accurate characterization.  
8 I guess I'd say a little bit differently is a goal -- I thought  
9 we had made great technological strides when we found that we  
10 were able to get the releases from this plant following the  
11 accident within those of established normal operating plants.  
12 Then we were being sued by several communities not to permit  
13 releases that would otherwise be acceptable within -- if the  
14 plant had never had an accident.

15 So, we decided as a matter of policy to look further to  
16 see if there was technology available which would further  
17 reduce the impact of releases on the environment. So I think  
18 the only area which the guidance is perhaps a little unclear  
19 to the utility and it's -- would have been the subject of  
20 today's meeting, is to what extent should we attempt or should  
21 we require the utility to do better in cleaning up releases  
22 from this accident than our regulations governing normal  
23 operation would require, and we wanted to delay the release  
24 of the krypton from the containment or water from the plant  
25 until alternatives could be explored and environmental

1 assessments could be prepared to really be sure that we have  
2 looked hard at the technology that might further reduce  
3 whatever the public impact would be of release of this gas.

4 And that, I agree with the utility, is an area that we  
5 have not come down on and he has done studies, for example,  
6 of the present kind of various approaches to removing the  
7 krypton from the containment. Once we attain this report,  
8 evaluate it, we will, I hope, come promptly to a decision of  
9 what standards will be in that area.

10 But I think they are the only two areas in which the  
11 standards are --

12 Senator Hart. Well, one factor I did leave out is public  
13 opinion, I meant to calculate that in. There's concern in the  
14 area, obviously, we'll hear about that shortly. About those  
15 releases that might not be there if there hadn't been an  
16 accident. And, now, people are sensitized so you're trying to  
17 do better with your normal standards, and that's causing the  
18 utility to be uncertain as to what you are going to permit them  
19 to do, and you're uncertain because of the pressure of public  
20 opinion.

21 Mr. Denton. And the absence of some technical information  
22 where we have required the utility to perform studies of various  
23 ways to do better, and if those studies that we need to  
24 understand before coming to a final decision --

25 Senator Hart. Well, if we got this much trouble in

1 handling gaseous and wastewater, what in the world are we  
2 going to do when we get to the damaged and highly radioactive  
3 core material. When that time comes, isn't that really going  
4 to be a headache, and what can be done about the transporting  
5 or removing that highly radioactive core material?

6 Mr. Denton. I think they will present some very  
7 interesting technical questions. In what form the waste, these  
8 high-level wastes, should be solidified. How should this real  
9 high-level waste be contained, and, you really, in order to  
10 make the proper decision, you need to know the ultimate  
11 disposal of those wastes, what type of environment are they  
12 expected to be in over their lifetime, in order to put them  
13 in the proper form to begin with.

14 That's the area that I mentioned that's not clear. Where  
15 those wastes may ultimately reside in the U. S. So, I'm sure  
16 those wastes will be solidified, they'll no doubt be held on  
17 site until some, until the country comes to grips with how to  
18 dispose of wastes that are in these categories.

19 Senator Hart. How long can they be held on the site, and  
20 what do you expect public reaction for that to be?

21 Mr. Denton. I think the local public reaction would be  
22 against holding them at the site. It's somewhat a natural,  
23 just to the situation with spent fuel. There are approximately  
24 15,000 spent fuel centers in this country being held in fuel  
25 storage pools because of a lack or no depository for those

1 fission products anywhere else.

2 Mr. Dieckamp. Senator, can I comment that indeed the  
3 question of public attitude or public acceptance is a critical  
4 one. But, I also think that in order to assist in that public  
5 acceptance issue, it's important that we sort of determine the  
6 appropriateness of the regulations and the criteria that we're  
7 using and then officially come in and stand up and be counted  
8 or be heard, so that the public has someone to look to as their  
9 source of confidence that these regulations are appropriate  
10 and indeed, will protect their health and safety.

11 Senator Hart. Senator Stafford, do you have a question?

12 Senator Stafford. Not at this time, Chairman.

13 Senator Hart. Senator Simpson.

14 Senator Simpson. Mr. Dieckamp, the President of the  
15 Kemeny Commission indicated the cleanup of the operation might  
16 run to a figure, including power replacement costs, of course,  
17 would amount to as much perhaps as \$1.8 billion. What are  
18 the present assets of Met-Edison?

19 Mr. Dieckamp. The total assets of Met-Edison, I'm just  
20 sort of speaking roughly now, I'll check, about a billion  
21 dollars. Now, I might point out a couple of things, the bulk  
22 of the replacement power costs or a significant fraction are  
23 being paid currently by customers, we're instituting a  
24 proceeding now to further bring that into register and we're  
25 hopeful that that can occur even though it has not yet occurred

1           The other comment that I would make is that I have not  
2 been able to see enough information yet to be able to  
3 understand fully the basis of the present Commission's  
4 statement.

5           Senator Simpson. If the cleanup should run to a figure  
6 of \$1.8 billion, can Met-Ed afford it?

7           Mr. Dieckamp. Well, again, I think it's important to  
8 segregate that accident cost number into its components. The  
9 replacement power portion is the biggest one. And I think I  
10 can say very directly that Met-Ed cannot afford to pay, to  
11 provide power to its customers and not be compensated for  
12 that power. So that's just something that I think has to occur

13           When you look at the cleanup portion of the estimate, if  
14 you use the \$400 million that we're using, or even if you use  
15 the number that the Kemeny Commission suggests as a high, which  
16 I think is on the order of \$500 million, then I would point  
17 out that there is \$300 million of property damage insurance  
18 which should be available to offset that cost. We would expect  
19 that further treatment of those costs in terms of rate making  
20 or recovery is something that can be dealt with by the State  
21 utility commissions.

22           We would also hope that as we go forward, the opportunities  
23 for learning in this situation, the opportunities for, in  
24 effect, expanding our base of nuclear technology, will provide  
25 a reasonable basis for some fairly significant participation

1 by the government, and perhaps, by the utility industry itself.  
2 For example, in this area of the core, that we speak of,  
3 certainly the damaged core, the fuel, the structure, the  
4 materials, constitute almost an invaluable base point to use  
5 for validating the kind of analytical models that are used to  
6 assess severe reactor accidents.

7 So I think it's important that we arrive at a situation  
8 to make sure that we, indeed, are able to gain access to that  
9 information and utilize it for the benefit of the program.

10 Senator Simpson. Thank you. In that statement, I sense  
11 a desire that the Federal Government participate because we have  
12 come upon something that is so fascinating to the entire world  
13 to assess. What is your feeling about that?

14 Mr. Dieckamp. Well, again, when you look at the kinds of  
15 things that the accident has left us with, there are indeed  
16 significant opportunities for learning there. You start right  
17 out with the decontamination process itself, will result in a  
18 lot of experience. And a lot of the knowledge relative to the  
19 health physics or radiation protection challenges, and the waste  
20 disposal problems and the like.

21 You move on then to some of the major components of the  
22 system, the instruments, the electrical components, some of the  
23 materials, they've been exposed to extreme environmental  
24 conditions of heat, steam and radiation, and their behavior, or  
25 their ability to withstand those environments can be critical

1 information to our future design of plants or assessment of  
2 plants and, again, I think the core is a very valuable data  
3 point that we should not lose.

4 Senator Simpson. Harold, Mr. Denton, what plan has been  
5 made by the NRC to assure that there are sufficient trained  
6 operating personnel at this facility enabling it to continue to  
7 be maintained properly in a safe manner regardless of what might  
8 happen? Too, the problems with regard to financial distress of  
9 Met-Edison or any possible decisions by the State Public  
10 Utilities Commission which is bringing the Show Cause Order at  
11 this time. And, I guess, the second part of that, does the NRC  
12 feel it has sufficient authority at this time to protect the  
13 public, operate the plant as required? Where are we with that  
14 situation?

15 Mr. Denton. The advice I get from counsel is that even  
16 in the event of bankruptcy of the company, the responsibility  
17 for operation of a plant within approved procedures would still  
18 lie with whatever entity would reconstitute. So, it's our  
19 understanding in event of failure of GPU, there would still be  
20 some organization who would have a responsibility for generating  
21 power and meeting federal standard.

22 We intended to focus on the managerial and technical  
23 confidence of the utility people as it is presently constituted.  
24 We have, for example, Blue Ribbon Panel of health physicists at  
25 the site this week doing their plans and organization for entry

1 into the containment and open reactor vessel. We've also  
2 surveyed their management organization to establish the depth  
3 of their technical confidence and that of their contractors,  
4 we've obtained from the Board of Business to help us in this  
5 evaluation. But, I think it's fair to say that we are proceeding  
6 on the basis that we will not have to actually take possession  
7 of the unit and maintain it with NRC personnel, even in the  
8 direst of physical problems.

9 Senator Simpson. I think one of the concerns with me is  
10 the issue of the fact that the planning is going on, but it  
11 doesn't seem to have a coordination that I would hope we would  
12 have had by now with regard to Met-Edison doing planning, the  
13 NRC doing planning, and then coming up against whatever it is,  
14 even terminology, such as "institutional barriers," which is  
15 now a new word of art apparently in our efforts. I'll have to  
16 find out exactly what interpretation I'll put on that.

17 Meaning, I guess, "rock-headed" agency or Congress doing  
18 what we want to do perhaps. But this concerns me that there is  
19 no coordination planning goes on. The question coming as to  
20 whether to live under the existing regulations, nothing we  
21 knowing we need new regulations, the utility knowing that if  
22 there are new regulations, it's going to take them a long time  
23 to figure out how to interpret them themselves, on we go.

24 Mr. Denton. I agree with you Senator. I think we can  
25 bring this to a much better focus and lay out for the public



1 inspection general plans so that everyone can understand what  
2 are the steps and still provide flexibility for adjusting and  
3 modifying the plan as new knowledge is gained.

4 I agree we need to move ahead in that direction.

5 Senator Simpson. Well, you have displayed throughout the  
6 incident, a very great and uncommon degree of common sense and  
7 I think that that's what keeps us in this process, we get back  
8 into technique and technology and dribble and we don't deal  
9 with the issue that the people want to know; what's going to go  
10 on?

11 We ought to start feeding it to them so they can get their  
12 fears under control, because that's what we're dealing with.  
13 Everything here, and the reason we're paralyzed in America, with  
14 this issue is simply fear. So, we just deal with it, let people  
15 know. They handle that pretty well, they do that in their lives  
16 every day. They can do this very nicely if they have all the  
17 data.

18 Mr. Dieckamp. Let me just add from the point of view of  
19 the company, we would welcome any kind of a mechanism that  
20 would somehow break down some of those barriers to easy  
21 communications and that would let us work with the NRC or any  
22 other entity, more effectively employ the total resources that  
23 are available to do the job. Because I think the job demands  
24 the best.

25 Senator Hart. Mr. Denton, follow up immediately on a

1 question about what would happen in the event of bankruptcy or  
2 some forfeiture of control by the utility. The law on the  
3 matter from the Atomic Energy Act states as follows:

4 "Upon revocation of the license," presumably which would  
5 occur at the time of bankruptcy or maybe it wouldn't, but let's  
6 assume it did, 'the Commission may immediately retake possession  
7 of all special nuclear material held by the licensee. In case  
8 it is found by the Commission to be of extreme importance to  
9 national defense and security, or to the health and safety of  
10 the public, the Commission may recapture any special nuclear  
11 material held by the licensee or may enter upon and operate  
12 the facility prior to any of the procedures provided under the  
13 Administrative Procedures Act, and then use compensation."

14 The question here is, assuming the possibility of  
15 bankruptcy or forfeiture by the operating utility, and the  
16 operation of that section of the law, do you believe that the  
17 NRC and its staff is capable and competent to run this plant  
18 through the recovery phase?

19 Mr. Denton. I think the answer is yes, if we were able  
20 to hire the present force of workers at the plant who are the  
21 ones who are trained in the details of the plant operation.  
22 I do think the NRC operation could assume a managerial,  
23 technical direction of the plant, but this is only an assumption  
24 that many of the employees of the plant who are skilled in  
25 operating individual pieces of equipment could be transferred

1 and somehow paid by the NRC. We don't have the operational  
2 capability to replace those individual employees that are  
3 actually manning the equipment today.

4 And to do that, would require a massive rearrangement  
5 of our own priorities and assistance from other government  
6 agencies.

7 Senator Hart. How many people were you talking about,  
8 several dozen?

9 Mr. Denton. No, I'm talking about the case where we  
10 would replace everyone that's presently employed by GPU.

11 Senator Hart. But if you, in effect, hired the GPU  
12 employees, how many are you talking about, roughly?

13 Mr. Vollmer. Several dozen.

14 Mr. Dieckamp. Well, Senator the total population on the  
15 site now of GPU employees and contractor personnel runs 12 to  
16 13 hundred sort of range. The normal complement for TMI-2  
17 alone would have been on the order of 250 people on site and  
18 then beyond that, some other technical support people.

19 Mr. Denton. To just be clear, I think we do have the  
20 staff capable of replacing the managerial components, but not  
21 of the 1,200.

22 Senator Hart. Day-to-day operations. Now, Mr. Dieckamp,  
23 correctly or incorrectly, there has been discussion in the  
24 press about the possibility of a Met-Edison bankruptcy. If  
25 that were to happen, will GPU commit its resources to ensuring

1 that the Three Mile Island Number 2 Unit is completely cleaned  
2 up?

3 Mr. Dieckamp. Senator, I'm not sure that I know how to  
4 answer that question, because there are so many dimensions  
5 to it, and so many uncertainties that it certainly impacts on  
6 the outcome of whatever we were able to do. We clearly at this  
7 point, are doing everything that we know how to make the  
8 resources available to manage the situation at Three Mile  
9 Island.

10 Since the accident, let me just give you a feeling for  
11 the magnitude of the things that have occurred there.  
12 Immediately after the accident, the manning on the site  
13 reached a level of 1 order of 3,000 people, and it's now down  
14 to about 1,200 level. The interval expenditures to date,  
15 since the accident, have been about \$100 million. The normal  
16 operating maintenance costs for TMI-2 alone, would have been  
17 in the range of \$15 to \$20 million.

18 We have drawn on all of our resources in terms of  
19 financial capability and bank credit in order to make sure  
20 that those financial resources were there. I do have to say  
21 that as we go forward, it will be important that there be  
22 recovery, reasonably rapid recovery of the insurance coverage  
23 for the damages to the plant, and secondly, that the Public  
24 Utility Commission recognize the cost on the sufficient and  
25 current basis that we do not run into a cash shortage problem.

1           Senator Hart. In round numbers, Mr. Dieckamp, what are  
2 the assets of GPU?

3           Mr. Dieckamp. The total assets of GPU are in round  
4 numbers, four and a half to five billion dollars. Now, keeping  
5 in mind those assets are all plant and equipment and those  
6 assets are not in the form of paid-off mortgages, they're in  
7 the form of mortgages, long-term financial instruments.  
8 Bonds, preferred stock, and common equity. So, even though we  
9 have those assets, and those assets largely represent also  
10 continuing obligations.

11          Senator Hart. They're not easily to make liquid?

12          Mr. Dieckamp. That's right. We might find somebody to  
13 convert them to cash. And if we did, the first thing we would  
14 have to do would be to pay off the investors who made the money  
15 available to build those facilities.

16          Senator Hart. Will there come a time when you will have  
17 to come up with a yes or no answer to the question that I asked  
18 about the commitment of GPU to the survival of Met-Ed?

19          Mr. Dieckamp. Well, I think the first piece of that  
20 relates almost totally to the manner in which the Public Utilit  
21 Commission handle the problem and their perception of what is  
22 fair and proper.

23          I might point out that if we just look at Met-Edison,  
24 despite these problems, and if one takes into account the  
25 request for fuel costs recovery, Met-Edison's rates will still

1 be about 4th lowest in the State of Pennsylvania. So, on the  
2 one hand, we would not appear to be in the situation of pushing  
3 beyond some reasonable bounds on the cost for the energy that  
4 we are supplying to our customers, but I think the place where  
5 we encounter problems is if the Commission think that this  
6 problem can be handled by very simple application of their  
7 perception of regulatory procedures and precedents and do not  
8 wish to think in terms of how do we jointly manage the problem  
9 of risks in an enterprise of this sort.

10 Senator Hart. Senator Stafford.

11 Senator Stafford. Thank you, Mr. Chairman. On that  
12 point, Mr. Dieckamp, it seems to me the Commission has already  
13 crossed the Rubicon as far as recovery of costs are concerned,  
14 because I think I am looking at the PUC order dated June 15,  
15 following a public meeting on June 15 and the Commission says  
16 that Commission is of the view that none of the cost of  
17 responding to the accident, including repair, disposal of  
18 waste, and decontamination are recoverable from rate payers.

19 Has that not resolved the matter and does that not  
20 indicate that Metropolitan Edison will not be able to recover  
21 those costs?

22 Mr. Dieckamp. Again, that speaks just to the cost of the  
23 plant refurbishment that recognizes, I think also in that order  
24 that there is \$300 million of insurance available to offset  
25 those costs. If we were faced only with differentials between

1 the cost of refurbishment and insurance, the problem would be  
2 clearly manageable.

3 The big problem relates to the cost of replacement power.  
4 And, I think, you will notice also in that order it says that  
5 the customers should be no worse off and no better off than had  
6 this accident not occurred, and indeed, the basis for the rates  
7 that were put into effect for Met-Ed put the Met-Ed customers,  
8 at that time, in the position where they were paying no more  
9 than had the plant never been built.

10 Now, the additional increment that we require now,  
11 relates to the fact that the public hearing SLB process for  
12 TMI-1's return to service can be expected to stretch its return  
13 from a previously assumed 1/1/1980 to somewhere, let's say  
14 in the late fall and winter of 1980, and it's that increment  
15 and additional cost due to that delay that is forcing us to ask  
16 for additional relief for Met-Edison.

17 Again, even with that in palce, assuming that there was  
18 in place, Met-Ed's customers are fourth lowest in the State in  
19 terms of cost of electricity.

20 Senator Stafford. Let me ask you this: I understand  
21 that Met-Edison is a wholly-owned subsidiary of General Public  
22 Utilities, which you're the President?

23 Mr. Dieckamp. That's right.

24 Senator Stafford. What would be the impact on GPU of a  
25 bankruptcy of Metropolitan Edison?

1           Mr. Dieckamp. Again, that's an extremely complicated  
2 question, and I would respectfully wish to not attempt to answer  
3 that question, because it involves so many complex legal  
4 questions that, frankly, I'm not able to answer it in a simple  
5 meaningful way.

6           Senator Stafford. Well, let me just express my personal  
7 opinion then that it would appear to this Senator that  
8 Metropolitan Edison could be cut off and allowed to go bankrupt  
9 and that might likely be what GPU would do if it appeared to  
10 GPU that it's existence was otherwise prejudiced by the  
11 bankruptcy of Metropolitan Edison.

12           Mr. Dieckamp. Well, let me go so far as to say this. We  
13 do not, have not to this date, and I guess we don't see the  
14 situation where we perceive to have bankruptcy of Met-Ed to be  
15 in the best interest of GPU. Let me also point out that when  
16 we speak of that plant and the obligations for the health and  
17 safety of the public and the necessary stewardship of the plant  
18 we're not speaking of just Met-Edison. Met-Edison's only 50  
19 percent owner of that plant. Our other two subsidiaries,  
20 Pennsylvania Electric Company and Jersey Central Power and  
21 Light own 25 percent of that plant.

22           Let me go on to say that while I don't feel capable of  
23 discussing bankruptcy in great detail, I just want to assure  
24 you that we have been giving it considerable study so as to  
25 understand what the ramifications are, or at least to attempt



1 to understand what the ramifications are.

2 Senator Stafford. Nothing that's been said this morning  
3 that I've had an opportunity to hear discussed in connection  
4 with recommissioning of the TMI-2. The possibility I saw  
5 suggested in the press recently that you might be considering  
6 going to a coal-fired system there instead of nuclear. I only  
7 bring that up to ask you if the ramifications expensewise would  
8 be greater or lesser than those you project to recommission the  
9 plant as a nuclear plant?

10 Mr. Dieckamp. The plan that results or is imbedded in the  
11 Bechtel Study moving forward, is on the basis of recommission  
12 TMI-2 as a nuclear plant.

13 Let me add further then, that if we look internally to  
14 that plan, the first piece of it, namely that of cleaning up  
15 the plant, be respected with request to recommissioning, has a  
16 cost associated with it of at least \$200 million out of that  
17 estimated \$320 million for the total cleanup aspect, costs.  
18 So that is there irrespective of the return to service.

19 Now, with respect to the study of alternatives to  
20 returning it as a nuclear plant, we have felt that as we moved  
21 downstream and got to the point after cleanup, where that  
22 decision had to be made, we felt that it was going to be  
23 important for us to have good solid detailed studies that had,  
24 indeed, evaluated the options. And so, we have been looking at  
25 an option that would convert the plant to coal firing.

1 I think that the thing to keep in mind is that once  
2 having cleaned up the radioactive residuals of the accident,  
3 I think it's probably true that the incremental cost to get the  
4 next 900 megawatts of power is probably less if one reconverts  
5 or maintains it as a nuclear plant. If one wants to convert it  
6 to a coal plant, you are faced with a bigger capital investment  
7 you're faced with a problem of trying to preserve some fraction  
8 of the vessel, namely the turbine generators, the switch gear,  
9 the transmission, a number of the auxiliaries, the free water  
10 system, the heat rejection system, the like.

11 However, those components are all far from optimum for  
12 a coal fired station. The turbine, for example, would produce  
13 about 30 percent efficiency whereas the modern coal fire plant  
14 is in the 35 to 40 percent efficiency. This means that in  
15 order to make an effective coal plant, one has to put high  
16 pressure turbines in front of the coal pressures nuclear  
17 turbine. It becomes possibly a very complex wieldy  
18 configuration, and perhaps, not a very productive plan.

19 We are also looking at the environmental constraints, the  
20 capacity of that local air basin to handle coal firing, and in  
21 addition, there are the problems of handling ash and scrubber  
22 sludge because certain hazards of the scrubber and things of  
23 that sort, but again, our feeling has been that when it comes  
24 time to make that decision, we will need to be armed with or  
25 have available the best possible study that truly reveals the

1 different options and their merits.

2 Senator Hart. Mr. Dieckamp. Just another way of  
3 cleaning up one matter relating to the consumer rate base,  
4 rate-payer matter, if I can read, it's a rather complicated  
5 equation, if I can reconstruct your statement, you said: "Even  
6 if the Pennsylvania Public Utility Commission granted the rate  
7 increase to accommodate the cost of cleanup, the increased  
8 cost to the consumer would not be any greater than if the plant  
9 had not been built." Is that an accurate restatement of what  
10 you said?

11 Mr. Dieckamp. No. I made that in reference to the  
12 replacement power, still absent the cleanup. Again, the  
13 cleanup component is not --

14 Senator Hart. Replacement power, ther., if the  
15 Pennsylvania Public Utility Commission granted the rate  
16 increase that you've requested to accommodate the cost of  
17 replacement power, the cost, the increased cost to consumers  
18 would be no greater than if the plant had not been built?

19 Mr. Dieckamp. That's correct, because what is simply  
20 happening is the customer is being supplied with purchase power  
21 on what we call interchange power from within the power pool  
22 and that is energy that is available at certain cost levels and  
23 that, in turn, is passed on directly to the customer with no  
24 markups on the part of the company, no adders of any sort.

25 So, as a result, you're in a configuration of cost which

1 is exactly what it would have been had the plant never been  
2 built.

3 Senator Hart. That's part of the equation I want to  
4 pursue, because I think you got a rate increase to build the  
5 plant.

6 Mr. Dieckamp. We were on the threshold of a rate  
7 increase, to recognize the fixed cost in the plant. That was  
8 denied at the same time that the June 15 order was entered to  
9 recognize the fuel cost.

10 I think it's important to note that with respect to our  
11 Pennsylvania customers, they have not contributed one penny  
12 towards the direct construction cost of the plant or the fixed  
13 charges associated with the construction of that plant. Prior  
14 to placing the plant into service, all of those fixed charges  
15 were capitalized to be recovered through rates into the future,  
16 and those rates have not been put into place.

17 What is simply the effect at this point is that across  
18 the three GPU subsidiaries that own this plant, their  
19 stockholders, GPU stockholders are now absorbing costs, roughly  
20 \$10 million a month, and those costs are made up of the fixed  
21 charges on the bonds, the preferred dividends, operating and  
22 maintenance cost, depreciation, and the absence of any return  
23 on their equity investment.

24 So, as of right now, the GPU stockholder is carrying the  
25 full burden of that \$800 million vessel, with no contribution

1 whatsoever today from any rate payer in either Pennsylvania  
2 or New Jersey.

3 Senator Hart. Now, on the issue, Mr. Vollmer, of  
4 confidence of citizens in the area. The Mayor of Lancaster  
5 in his prepared testimony, which we'll shortly receive, speaks  
6 of credibility gap and crisis of confidence, phrases that have  
7 worked their way well into the public dialogue in the last few  
8 years. And that credibility gap and crisis of confidence, he  
9 says in his City, is the cause of what he calls inaccuracies,  
10 inconsistencies, and misinformation supplied by Met-Ed, and  
11 the Nuclear Regulatory Commission.

12 He specifically cites the NRC Commission that this  
13 Subcommittee was mistaken, I think that was the NRC's position  
14 when we disclosed that storage capacity was running out for  
15 contaminated water in the auxiliary building. Only to have  
16 the NRC reverse its position and to urge the startup of the  
17 EPICOR-2 water treatment system precisely because of inadequate  
18 storage capacity.

19 Now, you are identified by the Mayor as the one who  
20 changed this position from ample storage to inadequate storage,  
21 what is your explanation for that?

22 Mr. Vollmer. Well, I think that for some time when we  
23 were pursuing the assessment for the use of EPICOR, assessing  
24 its adequacy, we were concerned about the lack of storage  
25 facility in the auxiliary building, and always at that time,

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1 we had recognized that additional capacity, if need be, was  
2 available by transferring these radioactive wastes over into  
3 the Unit 2 auxiliary building, or Unit 1 building. I think that  
4 without going back and looking at the specifics of what was  
5 said, I think that we felt it important for the general public  
6 health and safety, and particularly to reduce exposures to  
7 operating personnel, that the radioactive waste generated by  
8 the accident be confined in the minimum amount of locations  
9 and that it be solidified and put on resins and immobilized,  
10 as far as an activity point of view, as quickly as possible.

11 So there was always available that contingency for  
12 transferring the waste Unit 1. I think that was recognized at  
13 all times. Again, I think the overriding concern was that in  
14 the best interest of the operators, best interest of potential  
15 spills, that it be confined to Unit 2 and not be transferred  
16 to Unit 1.

17 Senator Hart. Well, just to nail the issue down, whether  
18 there was a shortage of capacity or not, we issued our, I don't  
19 think we issued a statement, I think we made an inquiry of the  
20 NRC as to whether or not there was, in fact, a shortage of  
21 storage capacity, based on information supplied to us by the  
22 NRC, which in turn was supplied to the NRC by Met-Ed. You, or  
23 someone in the NRC then made a statement that our impression  
24 that there was a shortage was a mistake.

25 So, if there was a mistake, it was either on the part of

1 NRC people we talked to, or the information they were getting  
2 from Met-Ed. What is the situation?

3 Mr. Vollmer. Well, I believe, in our first letter from  
4 the Commission to you, I think we described the roughly 40 day  
5 of available capacity that was left in the Unit 2 facility  
6 itself, but I think that letter also recognized the fact that  
7 if need be, if the EPICOR process could not be started, that  
8 those waters would eventually have to go to Unit 1. And so,  
9 at that time, I think we felt that yes, there was 40 days or so  
10 capacity left for storage of contaminated water in Unit 2, but  
11 if that runs out, the alternative was either processed through  
12 EPICOR or start transferring water to Unit 1.

13 Senator Hart. How did you verify the Met-Ed data, 40  
14 day capacity?

15 Mr. Vollmer. Well, our people at the site have, as Mr.  
16 Denton indicated, we have 15 to 20 people on the site, including  
17 around-the-clock coverage, we have verified and have been  
18 involved in all of the radwaste operations, and to the best of  
19 our ability, certainly verified that the tanks, those major  
20 tanks were indeed full and indeed based on the rate that we  
21 were accumulating wastes at the site, roughly 40 days of  
22 additional accumulation would run out of tankage.

23 Senator Hart. You're satisfied, based on your own  
24 independent assessment that there was a genuine enough storage  
25 capacity problem to necessitate the useage of the EPICOR system

1           Mr. Vollmer. Yes, sir, I'm convinced of that. I'm  
2 convinced that the shortage was indeed there, in Unit 2, and  
3 the alternatives between use of EPICOR and Unit 1 were the  
4 only viable ones.

5           Senator Hart. So, back to the present question. Was  
6 the Subcommittee correct or incorrect in its concern?

7           Mr. Vollmer. My belief that the Subcommittee was correct  
8 in its concern that space was running out in the Unit 2 complex  
9 and that the best interest of operator exposure and potential  
10 for spills would not be served by transferring into Unit 1  
11 tankage.

12           Senator Hart. You have stated, others have stated there  
13 is an effort to publicize and make public the deliberations  
14 step-by-step in the cleanup activities. Are there any other  
15 efforts under way to improve the credibility of both the  
16 government and the utility with the people of Lancaster and  
17 other nearby residents besides just these public and press  
18 meetings?

19           Mr. Dieckamp. Senator, I think the kinds of things that  
20 we are doing are trying to make as many of our people and our  
21 senior people as available as possible to appear before the  
22 public and not just carefully selected audiences, but also  
23 to meet directly with some of the local groups who are directly  
24 in opposition to the plant and its future operation. We have  
25 felt very strongly that the most important thing that we could



1 do would be to let these people, these organizations, see our  
2 management individuals directly and gain a personal and direct  
3 impression of their confidence and their dedication to doing  
4 the job right.

5 I think we have to admit though, that's a slow process,  
6 there are a lot of people that we have to get to on that kind  
7 of a basis. We certainly had very high level of activity in  
8 the Visitors Center just adjacent to the plant. I think over  
9 the summer and the fall, the attendance through the Visitors  
10 Center ran in the neighborhood of 20,000 people. But I think  
11 its a long haul and a process to try to regain that confidence

12 We do think that with these aspects of the bi-weekly  
13 briefings, in Harrisburg to identify what we are doing, discuss  
14 what we're doing, are a key part of that. For example, the  
15 day after the Kemeny Commission report, Mr. Koons, the Chairma  
16 of GPU, myself, Mr. Arnold, our senior man at the site, made  
17 ourselves available all Wednesday morning. First for a briefi  
18 and question-and-answer session with local and state officials  
19 and immediately following that, for a press briefing.

20 Again, it's been our feeling that we need to make  
21 ourselves available and address the issue.

22 Senator Hart. Mr. Wilson, one final question on health  
23 physics. How many workers will receive maximum allowable dose  
24 of radiation during the cleanup and recovery of Three Mile  
25 Island and where do you believe these workers to come from?

1 Mr. Wilson. We don't yet have a total estimate of what  
2 we might expect of what I would characterize as a total  
3 man-rated dose of the recovery operation. I would expect we  
4 would anticipate there would be no workers in the absence of  
5 any incident that would receive what's called a maximum  
6 allowable dose.

7 Workers will come from many places. Let me describe,  
8 for example, what we're doing in the decontamination of the  
9 auxiliary building right now, where workers are in place and  
10 in performing the decontamination efforts. The very large  
11 bulk of those workers are volunteers from elsewhere within the  
12 GPU system, they're linesmen, truck drivers, all kinds of  
13 people. They have volunteered to work in the environment the  
14 well over 90 percent, and they volunteered for a two-week period  
15 of time -- then they go back to their normal duties for a while  
16 well over 90 percent of those people have volunteered to come  
17 back to the site.

18 In all cases, except one, where one person was not willing  
19 to come back, it was for personal reasons, rather than concern  
20 about the radioactive environment that they're in, so workers  
21 will come from the GPU system, workers will come from organized  
22 labor, other groups of that nature.

23 I'm confident that while the management of that dose to  
24 that total worker population is one of the substantial  
25 technical and management tasks on the site, I believe it can

1 managed and managed well within the current guidelines.

2 Senator Hart. Well, I hope there are procedures, for  
3 example, to accommodate people who have worked in other nuclea  
4 facilities and come there and receive any kind of exposure at  
5 all, some central registry or some other facility so that the  
6 total accumulation can sort of follow the worker, if that's  
7 a problem.

8 Mr. Dieckamp. Our plants do have in place, Senator,  
9 that kind of a mechanism for keeping track not only of the dos  
10 received at our plant, but also the doses received on other  
11 sites for roving workers. Our procedures of this date have  
12 not included keeping track of medical or other contact.

13 Let me also say that there can be no question of what  
14 the radiation protection of the personnel, radiological,  
15 health physics, whatever you want to call it, is a critical  
16 matter. We are having difficulties getting up to the full  
17 level and speed that this job is going to require. I think  
18 that's certainly part of the background for the Blue Ribbon  
19 Committee that the NRC has on the site right now. There's no  
20 question in our mind of what we have to put in place the  
21 necessary controls, and in the meantime, I think we are just  
22 going to have to control the level of activity to be within  
23 whatever capacity the organization can handle.

24 Mr. Vollmer. Senator Hart, I might mention that as far  
25 as the NRC staff that is at the site full-time, a major

1 fraction of those are expert in health physics areas, it's  
2 an area that we're watching very closely also in trying to  
3 provide the licensee with whatever assistance we can in meeting  
4 the objectives and keeping those goals.

5 As far as the occupational exposures are concerned, I  
6 would like to point out that the achievement of a quarterly  
7 maximum dose does not necessarily represent a deficiency in  
8 operation because often, the person who is best trained for  
9 an operation will accomplish much more efficiently than sending  
10 a number of people through to do not so efficient a job, and  
11 we look toward a minimizing the total exposure by the use of  
12 the maximum extent of the most trained and most proficient  
13 people.

14 So, in many cases, one might need to have a worker achieve  
15 his maximum quarterly dose, but in so doing, minimize the total  
16 exposure to a group of workers.

17 Senator Hart. Achieve, I'm puzzled by your use of the  
18 word achieve a dose.

19 Mr. Vollmer. Well, I think the basis of our regulations,  
20 the basis of what we look for is trying to assure that whatever  
21 dose is received, it's as low as possible for the operation  
22 being performed, all measures are taken to reduce that dose.  
23 In certain circumstances, a good example which is taking reactor  
24 cooling system samples early in the accident, it was necessary  
25 to have workers take that with full knowledge that they would

1 reach doses that were close to their quarterly maximum, yet  
2 the operation needed to be done.

3 Senator Hart. I was just commenting on the use of the  
4 term. I would have thought suffer or something like that would  
5 have been better than achieve.

6 Mr. Vollmer. I think suffer would be better.

7 Senator Hart. Gentlemen, thank you very much for your  
8 participation here today. We appreciate your testimony. It's  
9 been extremely helpful.

10 Our next panel of witnesses include Mayor Albert Wohlsen  
11 Jr., Mayor of Lancaster, Pennsylvania; Miss Judith Johnsrud,  
12 Environmental Coalition on Nuclear Power; Bruce Smith, Chairma  
13 of the Board of Newberry, Pennsylvania Township.

14 STATEMENTS OF MAYOR ALBERT WOHLSEN,  
15 LANCASTER PENNSYLVANIA; JUDITH JOHNSRUD,  
16 ENVIRONMENTAL COALITION ON NUCLEAR POWER;  
17 AND BRUCE SMITH, CHAIRMAN OF THE BOARD OF  
18 NEWBERRY, PENNSYLVANIA TOWNSHIP

19 Senator Hart. These are investigative hearings. The  
20 rules of the Committee provide for sworn testimony, so if the  
21 three of you would stand and be sworn.

22 The testimony you are about to give before this Committee  
23 do you each swear and affirm that the testimony will be the  
24 truth, and nothing but the truth, so help you God?

25 Mayor Wohlsen. I do.

1 Ms. Judith Johnsrud. I do.

2 Mr. Bruce Smith. I do.

3 Senator Hart. Be seated.

4 Mayor Wohlsen, we'll start with you, I understand you  
5 have a prepared statement. In the interest of time, and to the  
6 degree possible that you could summarize the salient points of  
7 that, the Committee would appreciate.

8 Mayor Wohlsen. Senator Hart, Senator Simpson, I would  
9 like to read what I consider appropriate paragraphs from my  
10 prepared statement that you have received. So I'll do that  
11 immediately.

12 On February 17, 1979, I was appointed interim Mayor of  
13 the City of Lancaster, Pennsylvania, by the City Council to  
14 serve the balance of the unexpired term of my predecessor who  
15 was appointed to a cabinet position with Governor Richard  
16 Thornburg. Our City charter provides for a strong Mayor form  
17 of government. My background has been in the Lancaster business  
18 community as president of the area's largest construction  
19 company. I have not had previous involvement with political  
20 life and my term in office will expire in January, 1980, as I  
21 did not seek to become a candidate for election to the office  
22 of Mayor.

23 The City has about 60,000 residents with a county  
24 population of 445,000. Based on the testimony given this  
25 morning, I presume I'm the head of an institutional barrier.

1 Before I proceed further, I do want to emphasize that I do not  
2 oppose commercial nuclear power. I realize there has never  
3 been an accident like the one at Three Mile Island, and because  
4 of the uniqueness of this accident, government and utility  
5 officials were understandably treading on new ground and facing  
6 problems never before faced.

7 For this reason, I want it to be understood that my  
8 criticisms are leveled in a constructive sense; so that, if  
9 such an accident should ever happen again, the mistakes will  
10 not be repeated.

11 The City of Lancaster's concern and involvement with  
12 events at Three Mile Island began as we learned through the news  
13 media of the existence of a potentially serious problem at the  
14 site. Because of Lancaster's proximity to Three Mile Island,  
15 a distance of approximately 23 miles, it was apparent from  
16 the outset that the rapidly changing events that took place  
17 in the days immediately following March 28 could have a  
18 substantial and direct effect upon our community.

19 Few people can appreciate the scope and extent and concern  
20 by this accident. Unaware of the inherent dangers of nuclear  
21 power, this threat was invisible and people were upset.

22 Since Lancaster City provides a municipal water service,  
23 a service for approximately 110,000 customers, city officials  
24 recognized the need to assure the integrity of our water supply.  
25 The Susquehanna River is the principal source of supply for the

1 City. We draw and treat some 8 million gallons daily from a  
2 point 8 miles downstream from Three Mile Island. We had to  
3 assure that the environmental impact of the cleanup would be  
4 carefully evaluated for the area generally, and with particula  
5 awareness to concern for the City of Lancaster's water source.

6 Because decisions were being made with no opportunity  
7 for Lancaster's participation, the City decided to file suit  
8 against the NRC in the United States District Court for the  
9 District of Columbia to compel compliance with the National  
10 Environmental Policy Act.

11 I firmly believe that the only reason the water is not  
12 being discharged into the Susquehanna today is in view of the  
13 suit that we have entered. It seems clear that the public,  
14 those residents in the area directly affected by this nuclear  
15 accident, the national public, and even the nuclear industry,  
16 will be served by a careful environmental impact statement.  
17 Caution dictates a broader view of all issues and technologies  
18 involved in the cleanup operations necessitated by the Three  
19 Mile Island accident. Any further problems at Three Mile  
20 Island not only jeopardize the lives and health of the public,  
21 but also cloud the country's energy future.

22 The public must be fully involved and informed so that  
23 it can be confident that reactor accidents are openly and  
24 properly analyzed and resolved.

25 Some scientists claim that there are serious long-term



1 hazards in the discharge of contaminated water to the  
2 Susquehanna River while others maintain that this discharge wi  
3 present no significant risk. Since the scientific community  
4 is split on this issue, it is the City's position that the  
5 burden of proving that discharge would be safe must rest with  
6 Met-Ed and the Nuclear Regulatory Commission.

7 The City's position is not one of total opposition to  
8 nuclear power. It is our belief that this country must contin  
9 to address and assess it's energy problems, including nuclear,  
10 as expeditiously as possible, but we also must recognize that  
11 whatever decisions are made will have far reaching effects.  
12 Whatever lessons may be learned from Three Mile Island must  
13 be given full consideration in future planning for the nuclear  
14 power industry.

15 Restoring public confidence in nuclear power and our  
16 governmental ability to safer control, both in Lancaster Count  
17 and elsewhere, will require more effort in the future than has  
18 been demonstrated by Met-Ed and the NRC in the past.

19 My firm opinion that environmental impact assessments and  
20 environmental impact statements should be performed by  
21 consulting firms independent of Met-Ed and the Nuclear  
22 Regulatory Commission. Additionally, there should be  
23 monitoring and on-site inspections by outside firms. There  
24 must be a thorough and considered review of existing  
25 regulations and standards, radioactive discharge standards

1 for Three Mile Island established before the accident should  
2 not necessarily apply to Three Mile Island after the accident.

3 Because of the large releases of radioactivity and  
4 severe psychological stress inflicted on the people in the  
5 area, the only way to help those who live near Three Mile  
6 Island is to make Three Mile Island's discharge standards  
7 more restrictive. This is appropriate under NRC's own  
8 regulations which require that, "As low as reasonably  
9 achievable" standards taken into account economic and  
10 psychological considerations.

11 The Federal Government must have a community network  
12 capable of delivering the local governments information that  
13 they have to plan effectively for the safety and welfare of  
14 their communities.

15 In conclusion, I think it is imperative that NRC be  
16 capable of quickly delivering accurate information to local  
17 governments in areas affected by nuclear operations.  
18 Additionally, the NRC must concentrate on public safety and  
19 not operate as a promoter of nuclear power in partnership  
20 with the utilities.

21 The Lancaster community continues to be concerned by the  
22 Met-Ed and NRC approach of designing and developing systems  
23 first and then evaluating their environmental impact. Since  
24 an approach precludes an objective, environmental or safety  
25 review, if the citizens of Lancaster cannot rely on the trust

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of NRC to protect our water supply, then, who can we turn to?

Thank you very much, Mr. Chairman.

Senator Hart. Mayor Wohlsen, thank you very much for taking your time to come down. We'll have some questions.

(Prepared statement of Mayor Wohlsen follows.)

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1           Senator Hart. I want to ask Chairman Smith if he will  
2 give us his statement.

3           Mr. Smith. Thank you Senator.

4           First of all, I would like to make a slight correction,  
5 I'm Chairman of Newberry Township, Board of Supervisors,  
6 which is in York County, Pennsylvania.

7           March 28, 1979 changed my life and my attitude toward  
8 nuclear power. Until that day, I gave very little thought  
9 toward the nuclear power plant that had been built just two  
10 miles from my home. Why should I worry? The United States  
11 Government was involved in the licensing process and nuclear  
12 power is foolproof, fail-safe, and perfect. We even boated on  
13 the Susquehanna River, water-skied past the cooling towers, and  
14 proudly took guests on an admiral's tour which always ended  
15 with a close-up look at modern-America's marvel, Three Mile  
16 Island. I would invariably compare the cooling towers to the  
17 pyramids.

18           I must point out at this time that I am a high school  
19 English teacher, I have been teaching for 22 years; I served  
20 two years in the Army; I am happily married and the father of  
21 two wonderful girls who are 14 and 11 years old. I became  
22 involved in local government when I became dissatisfied with  
23 the job being done by my local government officials. I then  
24 became involved in anti-Three Mile Island activity when I  
25 observed first-hand what the accident did to my community.

1 First, a brief geography lesson about my community. It  
2 is a second-class township located in the northern section of  
3 York County. It is the largest municipality within the five  
4 mile radius of Three Mile Island, on the west shore of the  
5 Susquehanna River. Newberry Township completely surrounds  
6 Goldsboro; in fact, all roads into Goldsboro must pass through  
7 Newberry Township. We have 8,500 residents, more than 31 squa  
8 miles of land, more than 114 miles of roads, and one single,  
9 solitary civil defense siren.

10 Of course, we all know that the entire municipality cann  
11 possibly hear that one civil defense siren. Of course, we all  
12 know that the civil defense evacuation plan failed miserably  
13 during the crisis on March 30. That's the reason that York  
14 County created this brand new evacuation plan which was  
15 published after the accident at Three Mile Island. The fatal  
16 flaw in the new evacuation plan is the initial reliance on the  
17 same civil defense siren in which the public has no faith.  
18 I live just two miles from the siren, yet I didn't always hear  
19 it. It depends which way the wind is blowing. In that  
20 regard, the siren is like radiation; it depends which way the  
21 wind is blowing..

22 During the proposed clean-up activities, which may pose  
23 some additional danger for residents living close to Three  
24 Mile Island, the public must be reassured that there is a  
25 viable, improved, evacuation plan. Local leaders should have

1 input; local residents' fears should be allayed. Long-range  
2 proposals should be prepared so that long-range preventitives  
3 may be planned. More than seven months have passed and  
4 Newberry Township still has only one civil defense siren for  
5 31 square miles. Our community cannot afford to purchase,  
6 install, and maintain additional sirens even if the danger  
7 level were to increase as a result of the clean-up activities  
8 on Three Mile Island.

9 A long-range step-by-step plan could better prepared the  
10 community as well as the community leaders with the problems  
11 and dangers to be confronted with the clean-up process.  
12 Met-Ed's present piecemeal approach is driving Newberry  
13 Township residents batty. I personally attended the news  
14 conference when Met-Ed announced their desire to release  
15 krypton into the atmosphere. Met-Ed officials seemed mystified  
16 when local citizens protested; after all the krypton only had  
17 half-life of the more than ten years. It was little  
18 consolation to the people of Central Pennsylvania to know that  
19 Met-Ed was going to select the days when the wind direction  
20 and velocity were best for release of the krypton. Lost  
21 confidence is like lost virginity; it is impossible to regain.

22 The American people lost confidence in nuclear power  
23 because of the accident at Three Mile Island. As an example  
24 of how much confidence and faith have been lost in Newberry  
25 Township, I submit to this panel a copy of a study which was

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1 incorporated in the Kemeny Commission report. This was a  
2 study which was completed in September, at least one month  
prior to the release of the Kemeny Commission report. This  
3 was a telephone survey within the township, done by township  
4 residents. Only 13 percent of the persons surveyed thought  
5 the report would be complete; only 25 percent thought the  
6 report would be truthful; only 30 percent thought the report  
7 would be factual. The reason that the survey was taken was  
8 to learn of community interest in a health monitoring program  
9 for the municipality as a result of the accident at Three Mile  
10 Island. Eighty-three percent of those surveyed indicated that  
11 health monitoring was a worthwhile project.

12  
13           Significantly, regardless of Presidential Commission  
14 findings, 85 percent want more study done on the effects to  
15 their health. Another significant indication of the present  
16 thinking in the community is that the Health Committee of the  
17 township which undertook the telephone survey, is applying for  
18 private funding to complete the study. Distrust of the funding  
19 by the Federal Government for nuclear power has resulted in lack  
20 of faith in the Federal Government because of the conflict of  
21 interest.

22           The bottom line of the thought that I want to leave with  
23 you today is that I am an average citizen fighting to correct  
24 a wrong that has been committed. I am so conservative that I  
25 supported Barry Goldwater in 1964; I am so idealistic that I

1 extolled Spiro Agnew's attacks on the press; and now I am so  
2 angry about Three Mile Island that I have become one of the  
3 leaders in the movement to close TMI forever, as a nuclear  
4 plant.

5 Why? All of my reasons are psychological, and they  
6 relate to the residents of my community and what they have  
7 already gone through. And that's only half of the picture  
8 because all of the residents who live near Three Mile Island  
9 realize that we are now the control group for nuclear power  
10 accidents. As you know, the word control group is the social  
11 acceptable way of saying we are guinea pigs. Just yeasterday  
12 afternoon, I met with three women from the Pennsylvania  
13 Department of Health, who will be starting a special survey  
14 in December on a small select group from communities surroundi  
15 Three Mile Island.

16 On November 1st, another control group began its study  
17 on three segments within Newberry Township; plant workers,  
18 mental health patients, and mothers of young children. This  
19 study will compare our group to a similar group near a nuclear  
20 facility that did not experience an accident. Again, this is  
21 a state study. The plan is to compare attitudes on March 28th  
22 to what they are now.

23 In addition, numerous telephone surveys have been  
24 conducted by various organizations. The State of Pennsylvania  
25 also has conducted an in-depth population control study which



1 was completed this summer. It is my job as an elected official  
2 and the leader of my community to urge that citizens cooperate  
3 with everyone conducting legitimate, necessary surveys in an  
4 effort to learn from the March 28th accident. The inherent  
5 problem is similar to that of a hypochondriac who learns of  
6 too many potential diseases. It becomes a psychological  
7 problem which depresses the interviewer and the interviewee.  
8 I have even heard of accounts where both were crying during an  
9 interview. The psychological impact of the accident at Three  
10 Mile Island is immeasurable, but it is there, in many homes.

11 Senator Hart. Thank you for a very fine statement,  
12 Mr. Smith.

13 Miss Johnsrud, if it would be possible, if you could  
14 summarize, in the interest of getting some questions in.

15 Ms. Johnsrud. I have to summarize. I have a lengthy  
16 statement for you and I do hope that you and the staff will have  
17 an opportunity to examine the specific points.

18 Senator Hart. We will indeed, and the entire statement  
19 will appear in the record.

20 Ms. Johnsrud. There are attachments that were delivered  
21 to the staff persons. I hope they are before you.

22 Senator Hart. Yes, they'll be entered into the record  
23 also.

24 Ms. Johnsrud. Thank you. My name is Judith H. Johnsrud  
25 I am Co-Director of the Environmental Coalition on Nuclear

1 Power (ECNP), a non-profit public-interest organization of  
2 individuals and citizen groups throughout Pennsylvania and  
3 adjoining states, founded in 1970, composed of citizen groups  
4 and individuals who are very much concerned about nuclear  
5 energy and its expansion.

6 I had hoped that our legal representative, Dr. Chauncey  
7 Kepford, who is a radiation chemist, could be with us today.  
8 However, as I'm sure you know, Met-Edison, Three Mile Island  
9 Unit 1 reopening hearings are getting underway in Harrisburg  
10 today and we are intervenors in that proceeding to attempt  
11 to keep Unit 1 closed as well as having participated since 197  
12 as the sole public interest intervenors in the licensing  
13 proceedings for Three Mile Island Unit 2.

14 I would like to be able to point out to you some of the  
15 ways in which that proceeding compiled a record that we believe  
16 might well form the basis for criminal charges against certain  
17 officials of the company with respect to testimony that we now  
18 believe cannot have been true at the time.

19 I would, however, point out that the license proceedings  
20 for TMI-2 are incomplete. We go back to hearing on two major  
21 issues in February of 1980. Issues that should have been  
22 resolved before the license had ever been issued and indeed, h  
23 those issues been handled, one of them being radon-222 from  
24 uranium mill tailings, a problem you're well acquainted with,  
25 had those issues been resolved prior to the granting of a

1 license, as should be proper, we believe the accident might  
2 never have taken place.

3 I would respectfully urge that at some later date you  
4 try to make an opportunity to hear Dr. Kepford in his  
5 discussion of social and technical problems relating to the  
6 restart of either Unit 1 or 2. I have attempted to address  
7 in this statement, that was very hastily prepared, which I  
8 apologize, some six issues which I will skim over quickly.

9 Naturally, the ongoing nature of the accident; aspects  
10 of the regulatory posture of the NRC since the accident; third  
11 the inter-relationships of TMI-1 and 2; four, the health  
12 effects of the accident as they relate to the problems of  
13 recovery for Unit 2; fifth and sixth, the attitudes that we  
14 as a public interest organization devoted to education in  
15 Pennsylvania, public service among the residents, and what  
16 I find very troubling, potential for sabotage in the event  
17 that either Unit is permitted to go back on line.

18 First, with respect to the accident still being in  
19 progress: I find that outside the immediate area of  
20 Pennsylvania, there is very little understanding that problems  
21 remain with gaseous releases, krypton, with still accumulating  
22 radioactive water within containment and elsewhere in the system.  
23 With the problem that lies ahead once the water and gas problem  
24 can be solved, if indeed they can, namely the problem of  
25 controlling radioactive dust, in the process of cleaning up the

1 interior of the containment building, and the reactor system  
2 itself.

3 Here, in particular, we are much disturbed by the  
4 potential for the release of stontium cesium 137 contaminants  
5 which we believe could have a very substantial impact on the  
6 agricultural lands of Southern Pennsylvania. And, finally,  
7 among those ongoing problems, is the concern expressed among  
8 citizens of the possibilities for damage to Unit 1, which, in  
9 turn, might affect Unit 2 during the cleanup or conversely,  
10 further accident conditions at Unit 2 that might require the  
11 use of TMI-1 facilities particularly, for the storage of  
12 materials in an emergency situation.

13 However, I feel the public has not understood the ongoing  
14 nature of this accident, and I would like to suggest several  
15 reasons for this to you. On pages three and four; first,  
16 is the impression that has been given by virtually all official  
17 sources and the utility that only minimal doses of radiation  
18 were actually received by the public, despite what we believe  
19 certain evidence that suggests the contrary.

20 Secondly, there has been a distressing lack of  
21 availability of reliable information from official sources.  
22 We have heard today about the closing down and now, perhaps,  
23 the reopening of public information facility in the Harrisburg  
24 Middletown area. Citizens have found very uncooperative  
25 attitudes on the part of the regional public relations office

1 of the NRC, and, very disturbing to us are the facts that the  
2 NRC staff and Met-Edison Company ceased, following the accident  
3 to provide virtually any information to Dr. Kepford and me as  
4 the legal intervenors and still incomplete licensing proceeding  
5 for that plant, despite repeated requests for data, for  
6 documents, for briefings, we have received virtually nothing  
7 from the NRC or the utility.

8 And, finally, as perhaps you are aware, in recent months  
9 and weeks, the Nuclear Regulatory Commission has attempted to  
10 restrict public access to documents, issuances of the Commission  
11 even notices of meetings and availability of documents, through  
12 the installation of the Publication Sales Program and the  
13 restriction of these documents to the public, documents where  
14 a commercial charge of 10 cents a page was levied, a charge  
15 which perhaps the utilities can pass through to their customer  
16 but we citizens simply cannot afford.

17 And, finally, I would point out to you in particular,  
18 those documents and the appendices that relate to the efforts  
19 of the NRC to restrict information, it's especially troubling  
20 that this appears to be lessons learned from the Three Mile  
21 Island accident.

22 I would like to skip now to a few instances of the nature  
23 of the regulatory posture in addition to this information  
24 cutoff. We find it especially disturbing, as I think they  
25 apply to the livelihood of the care and regulation of the

1 cleanup proceedings that we feel would be appropriate.

2 First; just within the last few days, the NRC has  
3 announced changes in its procedures with respect to generic  
4 proceedings, such as to restrict the participation of citizens  
5 and in particular, to essentially destroy the potential for  
6 meaningful discovery in such proceedings. The intent appears  
7 to be to reopen proceedings on radioactive waste management  
8 in order, so far as we can ascertain from the notice of  
9 hearing, to remove the entire question of the disposition of  
10 spent fuel in a reactor from the license proceedings.

11 Now, in Pennsylvania, we're faced with the possibility  
12 that the Public Utility Commission intends to cut off Met-Edis  
13 Company as an operating utility in the State. We wonder what  
14 provisions are being made by the Regulatory Commission for the  
15 management of spent fuel that hasn't already accumulated at  
16 that site, and in which might do so in the future. What  
17 analyses, for example, have been conducted on the integrity of  
18 the spent fuel storage of TMI-1 relative to cleanup operations  
19 at Unit 2.

20 Secondly, with respect to regulatory posture, I would  
21 point to the handling that the NRC is now using for the Class  
22 accident such as was declared at Unit 2. The Class 9, of  
23 course, is that accident vaguely defined as exceeding the  
24 capacity of safety systems, and yet, when the issue was raised  
25 by our organization at the Three Mile Island Unit 1 proceeding

1 where it obviously, a similar Class 9 disaster could impact  
2 heavily on the TMI-2 cleanup, we were told by the NRC staff  
3 that there was nothing to litigate in that the events, the  
4 sequence of events that we might propose had not taken place,  
5 and therefore, would be considered only hypothetical and  
6 speculative and not to be considered in the licensing  
7 proceeding.

8 It appears to us that nothing, in fact, again, has been  
9 learned about the need for careful examination of all potential  
10 accidents at the nuclear reactor despite the severity of Three  
11 Mile Island.

12 I would like to skip now to the health effects. For  
13 here, I think in particular, we have a problem that relates  
14 intimately to the future cleanup activities. We have all been  
15 assured in the population dose assessment report back in May  
16 10, that there would be only one or two or possibly up to ten  
17 cancer deaths. I would draw your attention to the two graphs  
18 that accompany, are appended directly to this statement,  
19 lettered A and B, following the notes. On these graphs, which  
20 are taken from the NRC's data, in the ad hoc report, May 10,  
21 we find a plotting of the sectors, I'm sorry, of the dosimeter  
22 readings of the NRC by sector for the week following the  
23 accident, March 31, onward. And these are compared with the  
24 curved line on the graph that shows the dose model that was  
25 used by the NRC and HEW and other agencies to predict that onl

1 one or two cancer deaths would be experienced at that distance  
2 up to 50 miles from reactor. If you'll note, please, on graph  
3 B. The plot for the sector to the northwest of the plant, which  
4 is indeed the area including Harrisburg, shows that although  
5 there was an initial drop of dose, between two miles and  
6 approximately six miles from the plant, where the two dosimeters  
7 were located, that at eight miles and especially at ten miles  
8 from the reactor, the dose had actually risen higher than it  
9 was close to the plant.

10 Now, this piece of information when taken in conjunction  
11 with the NRC's admission of the release of some 13 million  
12 curies of radioactive xenon gas in the first days of the  
13 accident plus some 14 or 15 curies of Iodine 131, indicate to  
14 us that there is indeed a potentiality that the doses actually  
15 received were far higher than the nuclear industry and the  
16 regulators have lead us to believe.

17 In particular, we have the evidence of uncertainty  
18 that is shown in the testimony of EPA officials back in June,  
19 namely testimony that states that the thermoluminescent  
20 dosimeters, the ground level monitors that were in place at  
21 the plant were not designed to pick up the bulk of the beta  
22 radiation that was omitted and secondly, the very disturbing  
23 testimony of one Albert Gibson of the NRC staff who when asked  
24 in late June by Commissioner Gilinsky if the staff radiation  
25 monitor was off scale, replied that it was. And, in response



1 to Commissioner Gilinsky's next comment, "So we don't really  
2 know what went up there," Mr. Gibson replied, indeed, "That is  
3 correct."

4 This gives us then to understand that nobody really does  
5 know what the doses received were. Our concern for the  
6 residents of central Pennsylvania at this stage and for the  
7 years in the future during the cleanup activities, is that  
8 there will be further errors, there will be unanticipated  
9 releases of radiation and the consequence will cumulative  
10 doses above and beyond what has already been received.

11 You will note --

12 Senator Hart. Excuse me, if you can summarize, it would  
13 be very helpful.

14 Ms. Johnsrud. Let me turn to my final point then. I  
15 think we can classify the attitudes of groups of people in  
16 Pennsylvania, some are apathetic, some are furious, some are  
17 not sleeping at night, some are calling us at all hours of the  
18 night every time there is a siren or a, any incident at all  
19 at Three Mile Island itself. There is a sense of deep pervasive  
20 uneasiness among the citizens.

21 As we have examined, I would ask you to turn here to page  
22 17 and 18 at the bottom, as we have examined the response of  
23 the citizenry to the ongoing nature of the accident, and when  
24 we've considered the likelihood of the restart of Unit 1 within  
25 a year's time, we must say that we see a very real possibility

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1 that there may emerge some quietly angered Pennsylvania or  
2 Pennsylvanians, people who have not been so identified as  
3 nuclear opponents, who will out of their frustration and their  
4 anger, manage in some way to cause damage to that reactor.  
5 Damage that may, in fact, result in the release of radioactivity  
6 in substantial quantities. And I would call your attention to  
7 the illustration that's based on our own experience some four  
8 years ago when an ex-Green Barret came up to Dr. Kepford and  
9 me and said, will you people draw an X on a reactor designed  
10 for me, I can get a hold of a missile, I'm not going to have  
11 them building a nuclear reactor near my home.

12 I am deeply concerned about the potential for that kind  
13 of response. I'm also concerned in another political realm  
14 about the possibility of increased police response, political  
15 surveillance, destruction of civil liberties as the other form  
16 of expressed opposition may begin to take place in the area of  
17 TMI-1 and 2, namely civil disobedience.

18 We feel that there is a continuing state of very deep  
19 distress among the citizens of Pennsylvania. That will be  
20 ameliorated only with the assurances that TMI-2 will never be  
21 put back on line and indeed, I would surmise that the vast bulk  
22 of the residents from our State would like to see TMI-1 cut off  
23 as well.

24 Thank you for your attention and I'd be glad to answer  
25 questions.

(Prepared statement of Ms. Judith H. Johnsrud follows.)

1           Senator Hart. Thank you Dr. Johnsrud. Thank you all  
2 for your statement. I personally believe that the statements  
3 offered here this morning by the elected officials may be among  
4 the most important that this Subcommittee has received since  
5 I have had the privilege of chairing it. I believe and have  
6 repeatedly stated, that when asked about the future of nuclear  
7 power, that it's directly related to the confidence of the  
8 American people in that source of power, and particularly, in  
9 its safety, therefore, you, as not only representatives of your  
10 communities, but I think a cross section representatives, if  
11 anything, tending more perhaps to the conservative than the  
12 liberal elements of our society, are very important witnesses.

13           Mr. Smith, is a little more categorical, he says in his  
14 first sentence, March 28, 1979, changed my life, and my, at  
15 that time, attitudes towards nuclear power. That is a very  
16 important statement, particularly to the degree that it's  
17 reflective broadly to citizens in this country.

18           Mayor Wohlson is somewhat less categorical, but he  
19 renders some very, very serious charges. The days of late  
20 March and early April were the most agonizing and frustrating  
21 that I have ever experienced, not just as Mayor, but I presume  
22 as a citizen of the country, and then you go on particularly,  
23 Mayor, to comment on the absence of information and the,  
24 perhaps the misinformation.

25           Mayor, let me ask you, is there any particular reason

1 why you have not been as traumatized in this respect as  
2 Mr. Smith?

3 Mayor Wohlsen. Could be because of the, our location as  
4 relates to the Island. And, of course, we did focus in on the  
5 water. Are you referring Senator to during the period  
6 immediately following the accident?

7 Senator Hart. I'm referring to your statements which  
8 seem to be related both to that as well as more recently.

9 Mayor Wohlsen. Yes. We were very much concerned  
10 immediately following the accident because at that point in  
11 time, there was an indication that they were considering an  
12 evacuation in a radius of 20 miles and, of course, Lancaster  
13 being within 22, 23 miles, City Government and the citizens  
14 were extremely upset and could have developed, that I would  
15 have been called upon to order an evacuation of our City.

16 That's when I refer to the most agonizing period of my  
17 time. We felt in Lancaster that because of the source of our  
18 water, and the protection of the integrity of the water, that  
19 we should focus our view on that. We feel that the overall  
20 result of the cleanup concerns not only the City of Lancaster,  
21 but also the surrounding towns and also our State Government,  
22 and we feel that maybe the leadership as to the response to  
23 what's happening at Three Mile Island should come from the  
24 State level or by county level. I might add that it's my  
25 personal view that leadership has not been forthcoming.

1           Senator Hart. How would you characterize, if you can,  
2 the attitudes of the people of your community generally,  
3 towards nuclear power after the accident?

4           Mayor Wohlsen. Our people are very concerned. I believe  
5 I can say that of the mail that's been received in my office,  
6 relating to one single incident, this far outnumbers any mail  
7 received on a single issue, I would presume, of any Mayor who  
8 ever served in that capacity.

9           It would be 99 and 9/10 percent in support of the City's  
10 position on the discharge of the water into the Susquehanna  
11 and many of the others. The vast majority of the letters are  
12 very concerned and I would say relatively anti-nuclear energy.

13          Senator Hart. Would you say that that reflects in any  
14 appreciable degree a shift in opinion generally?

15          Mayor Wohlsen. I could not say that there's been a  
16 shift in opinion since, in the period after the accident.

17          Senator Hart. Mr. Smith, what is the distance between  
18 the plant and your house?

19          Mr. Smith. Approximately two miles.

20          Senator Hart. Is there any direct correlation, in your  
21 opinion, between the proximity of one's residence and the degree  
22 of concern?

23          Mr. Smith. Absolutely. I've found that the closer people  
24 live to Three Mile Island, the more they care and the more  
25 anti-nuclear or anti-Three Mile Island they become. The closer

1 you are, the greater the concern.

2 Senator Hart. Well, I would just make a comment and the  
3 defer to Senator Simpson. We are hearing increasingly in  
4 the Congress these days about the criticisms of those who are  
5 alleged to espouse the so-called risk-free society, and the  
6 over abundance of health and safety regulations, and the  
7 so-called environmentalist blockade of progress in economic  
8 growth. But I think that's a little too retractive and also  
9 a little too simple. It is an issue of confidence. That's  
10 why I think your testimony is so important here.

11 For those of us who try to figure out a way and continue  
12 to continue a source of energy that some parts of this country  
13 are vitally dependent upon, but at the same time, reduce the  
14 risk, I think it does not help for anyone in industry or  
15 anywhere else, to put down those legitimate concerns. And I  
16 think you've stated them as well as anybody I've heard about  
17 risks, about danger, about public health, about public safety.  
18 We're all going to have to work together, I don't think the  
19 polarization of these issues, either way; all anti-nuclear or  
20 all pro-nuclear are very, very helpful at all.

21 This was a serious accident, and it ought to change the  
22 way we think about things and I don't know, I guess just  
23 listening to your statements, particularly you Mr. Smith, real  
24 makes me unhappy personally about those who put down or  
25 mischaracterize others who they say are trying to create a

1 risk-free society, I don't think there is such a thing, I don't  
2 know of any responsible public official in either political  
3 party at any level that believes there is a risk-free society  
4 or ever will be; but progress I think has to be measured in  
5 the degree to which we try to eliminate risks and hazards and  
6 unsafe conditions and while that's never possible completely,  
7 it's still, I think, a worthwhile goal, and it seems to me if  
8 we're ever going to have continuing nuclear industry in this  
9 country, particularly degree of risk in that industry, and  
10 it is different in kind and degree from other kinds of risk,  
11 and all of us are going to have to strive to make it as  
12 risk free as we can.

13 Senator Simpson.

14 Senator Simpson. Thank you very much, Mr. Chairman.

15 I, too, was very intrigued by testimony of all three of  
16 you. I guess I make more continual references than anyone on  
17 the Committee to the American citizens who are "out there."  
18 Perhaps, that's just because I've been most recently through  
19 the electoral fires. I know they're out there. And they're  
20 asking questions about regulations in their lives, health and  
21 safety, and those things. And you represent the very important  
22 at least partial cross section of the people in your community  
23 and I appreciate your sharing those views.

24 I gather from you, Mr. Smith, that you must be in the  
25 category that is know here as a Republican, is that correct?

1 Mr. Smith. You guessed.

2 Senator Simpson. Formerly an endangered species, now,  
3 I think in the area of repopulation.

4 We talk like that, we actually use phrases like batty  
5 and guinea pigs and we actually call institutional barriers  
6 municipalities in my country.

7 I think that one of the things, and the Chairman I think  
8 has handled it, because he sets the tone of our investigation,  
9 as Chairman, and I, hopefully, add some tonal quality to it  
10 as ranking minority member. We've tried to stay away from  
11 high drama in this situation. Because there's so much of it  
12 there. And, so we try to restrain our comments which can easi  
13 excite and overwhelm and arouse the public, so easy to do, just  
14 using the term core meltdown about once every ten minutes is  
15 enough to get everybody's juices going in America.

16 So, I think that from that standpoint, I think you'll  
17 want to be careful about inflammatory commentary. It's not  
18 helpful in my mind and I try to strike at it wherever I find  
19 it on both sides. I think that it's far removed from what  
20 we're up to. We're far removed from drama and hysteria.

21 Well, I have a couple of questions. I think you have  
22 discussed some of the local public reaction. I think that  
23 you're definition of that local public reaction would differ  
24 as to each of you. But back to the issue of plain old recover  
25 What are the people saying, Mr. Smith, I'm asking you and then



1 ask each of you to respond, what are the people saying about  
2 simple question, I wonder what they're going to do with that  
3 place out there? Would you answer that, please?

4 Mr. Smith. That's a very difficult question to answer.  
5 I'll try. One of the things that it relates to Senator Hart's  
6 observation is that because the Harrisburg and York areas are  
7 very, very close to Three Mile Island, there are articles almo  
8 on a daily basis about the activities at Three Mile Island.  
9 And people are very, very much abreast, if they want to be, on  
10 what's occurring. I know there are problems relating to  
11 communication between the utility and the public. The problem  
12 that I find is that yes, they do have those daily meetings,  
13 they have meetings during the day, not daily, but when they  
14 have the announcement, but I'm a school teacher, they have the  
15 in the daytime, I can't get to them, so I have to do the same  
16 thing that occurred during the crisis, I have to watch  
17 television and read the newspaper to find out what they said,  
18 and, I guess, the bottom line of what most people say is due  
19 to their unique experience, they don't quite believe everything  
20 that they're told.

21 And it's back to what you said, mentioning the word core  
22 meltdown. That was bandied about quite a bit during the  
23 crisis. You heard also two different things on television. So  
24 the people don't know what to believe, and they're told that  
25 everything is being done safely and within the guidelines and  
acceptable limits. Even the word acceptable limits becomes

1 laughable when you've been through what people in Central  
2 Pennsylvania feel that they've been through.

3 Senator Simpson. Could you comment just briefly.

4 Ms. Johnsrud. I think that there is a very strong  
5 denial syndrome among many of the residents of the area. They  
6 don't want to have to think about the ongoing nature of the  
7 accident. They're trying to restore some assemblance of sanit  
8 to their own lives. There certainly seems to be no sense of  
9 genuine stand locally as to what Met-Ed does intend to do with  
10 cleanup, we've been given virtually no information about it,  
11 despite that report.

12 There is, I think, however, an increasing understanding  
13 that transcends the logicalness of the accident. Namely, that  
14 there are some problems of justice involved. The accident has  
15 taken place in Central Pennsylvania, people want the hazardous  
16 material out of there. But where is it to go? Who deserves  
17 to get it? By what routes and who takes the risks there?

18 I think that in that respect, the understanding of the  
19 total system of production shot through with imperfections,  
20 has expanded immeasurably among people of Central Pennsylvania  
21 No, we don't know what Met-Ed intends to do, I hope you people  
22 will be able to find out.

23 Senator Simpson. Mayor, what were your thoughts on that  
24 general and tough question?

25 Mayor Wohlson. Number one; the people in our community

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1 say keep the waste water out of the Susquehanna, that's number  
2 one; but we also recognize that the reactor must be cleaned up.  
3 It would seem to us that it's appropriate that rather than plan  
4 for the cleanup and the analysis of how to be accomplished that  
5 this should be put on the basis of a full-scale study, rather  
6 than on a piecemeal, as suggested early this morning.

7 We would suggest that the water not be discharged into  
8 the Susquehanna, that a complete study is prepared with total  
9 cleanup of the reactor in conjunction with that, and an  
10 environmental impact statement, be prepared and that outside  
11 and private engineering and inspections and testing laboratories  
12 be involved, maybe with Met-Ed, through the NRC, for their  
13 input.

14 I would like to take the opportunity this morning to raise  
15 the banner for private enterprise, however, it would seem to  
16 me that the demonstration of Met-Ed makes that a little  
17 difficult for me, but I would like to say to you, sir, that  
18 I believe the private sector can be called in to provide backup  
19 and good input into this issue.

20 Ms. Johnsrud. I have one point, Senator.

21 Senator Simpson. Yes.

22 Ms. Johnsrud. I think that it would help immeasurably  
23 if there were a far fuller independently operated and widely  
24 publicized monitoring system for both potential gases and water  
25 releases and ultimately, solids as well. People want to know

1 just as they want to know the temperature before they walk out  
2 of the house, they would like to know what's happening with  
3 radiation levels.

4 Senator Simpson. I think that you've touched on all the  
5 things that we have grappled with since March 28, credibility,  
6 public confidence, knowledge, furnishing information to the  
7 American citizen so they can make their determination, the  
8 private sector, it's responsibility, and certainly, one thing  
9 that we'll be forever with, will be the safety of these  
10 facilities is either there, or invested capital will not come  
11 to them. It's that simple.

12 So, they are most interested, and that's the way the  
13 system should work, private enterprise is most interested in  
14 safety, will be increasingly so, or they'll never get anybody  
15 to cough up any chips to go along with them.

16 So, thank you so much. I have further question, I'll  
17 submit in writing, you have been very patient all of you, and  
18 your testimony has been very helpful. Thank you for taking  
19 the time.

20 And the hearing is concluded.

21 (Whereupon at 12:25 the hearing was adjourned, to  
22 reconvene at 9:30 a.m. on November 9, 1979.)  
23  
24  
25