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Congress of the United States  
House of Representatives  
Washington, D.C. 20515

January 28, 1982

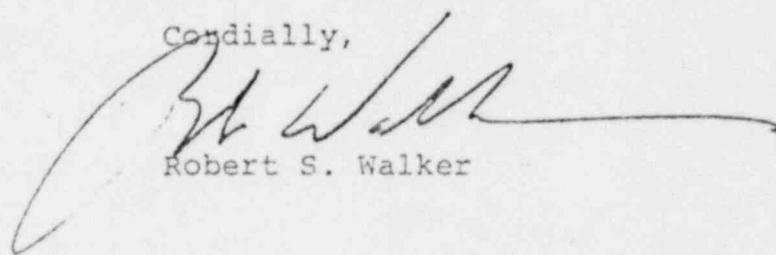
Honorable Annunzio Palladino  
Chairman  
Nuclear Regulatory Commission  
1717 H Street, NW  
Washington D.C. 20555

Dear Mr. Palladino:

I have enclosed a copy of a recent letter of the Union of Concerned Scientists to Governor Richard Thornburgh. Because of the seriousness of the charges made, I feel it would be appropriate to have your response to the issues addressed in the letter. Accordingly, I would respectfully appreciate hearing from you concerning this matter at your earliest convenience.

I look forward to hearing from you.

Cordially,



Robert S. Walker

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2/3..To EDO to Prepare Response for Signature of EDO..Date due:  
Feb 18..Cpys to: RF, OCA to Ack, docket...82-88  
(Note: exparte per OGC)

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UNION OF  
CONCERNED  
SCIENTISTS

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January 26, 1982

Honorable Richard Thornburgh  
Governor  
Commonwealth of Pennsylvania  
Harrisburg, Pennsylvania 17120

Dear Governor Thornburgh:

We are writing in response to the NRC staff's letter to you of January 5, 1982, regarding the restart of Three Mile Island Unit 1. The most charitable interpretation of that letter is that it is grossly misleading. A more frank appraisal is that it is deliberately deceptive.

As you recall, your letter of November 20, 1981 to the Chairman of the Nuclear Regulatory Commission forwarded for review letters you had received from U.S. Rep. Morris K. Udall, dated July 23, 1981, and from UCS, dated October 19, 1981. You urged Chairman Palladino "to conduct a careful and objective review" of the questions surrounding the safety of restarting TMI-1 that were raised by Rep. Udall and UCS. You suggested that if there were "any Unit 1 safety questions that have yet to be satisfactorily addressed, . . . now is the time for the NRC to address them." Finally, you requested "a written response from [Chairman Palladino] or [his] staff reflecting NRC's view of the various points raised by UCS and Rep. Udall."

The NRC staff characterized its reply to your expression of a "paramount concern for the health and safety of the people who live within the shadow of Three Mile Island" as an "interim response." However, it is clear that the NRC staff did not address the questions you posed. There is no evidence that the staff carefully and objectively reviewed the substantive issues raised by UCS and Rep. Udall. The staff avoids saying whether any Unit 1 safety questions have yet to be satisfactorily addressed or, if so, whether the NRC has any plans to address them now. Instead, the staff's letter purports to "summarize Staff positions on the several technical and procedural issues raised."

If the NRC had simply failed to respond to your questions, we would not need to bring that self-evident fact to your attention. Our reason for writing now is that the NRC staff has not only declined to address the safety concerns that you articulated, but in addition has presented you with information that does not reflect the whole truth. In our view, the staff has attempted to create an impression more favorable to restart of TMI-1 than it knows is warranted.

Rep. Udall's Letter

Consider, for example, the staff's response to the issues raised by Rep. Udall. Mr. Udall pointed to the "continuing resistance by GPU to requirements instituted for purposes of correcting deficiencies revealed by inquiries into the accident." He cited as an example GPU's resistance to the requirement to install water level instrumentation for the reactor vessel. Rep. Udall concluded with the following observation:

The reluctance of GPU to meet the NRC requirement, to say nothing of its failure to go the extra mile, suggests that the current TMI management, as did its predecessor, holds that the plant systems as they exist are adequate to cope with anticipated events; they appear to believe that unanticipated events simply will not occur. This is of course the same line of thinking that led to GPU's present predicament.

Thus, Rep. Udall's letter can fairly be characterized as expressing concern primarily about GPU's attitude and only secondarily about water level instrumentation. The staff's response is to acknowledge only the example and not to address the fundamental issue of GPU's attitude.

In addition, even this limited response does not accurately represent the staff's views. In its letter to you, the staff said:

. . . GPU has revised its position on this matter and has now committed to installation of a system in the Reactor [Coolant] System (RCS) hot leg piping which will provide an indication of RCS inventory loss. This system is currently being reviewed by the Staff and some design modifications are expected to be required before the system is installed at the next TMI-1 refueling outage.

This statement does not convey the same message as the report the staff gave the NRC Commissioners on the TMI-1 water level instrumentation only a week before its letter to you. In a memorandum to the Commissioners dated December 29, 1981, the staff said:

A single dp [differential pressure] measurement over the top 10 feet of the hot leg (as proposed for TMI-1) would detect voiding at the top of the candy cane. It will probably track hot leg level for a sufficient distance to distinguish between over cooling transients and a loss of coolant inventory indicative of an approach to core uncover. It would also provide valuable information to support reactor coolant system venting operations and to confirm that natural circulation operation is not interrupted by voiding in the candy cane. However, it would not trend voiding with the pumps running and would not indicate void formation in the reactor vessel head until vessel water level reaches the hot leg nozzle. It would also fail to provide a continuous

indication of coolant inventory loss proceeding to core uncover, and would not track the replenishing of coolant inventory. \* \* \* As presently proposed, the single dp measurement over the top 10 feet of the hot leg is unacceptable to the staff. (emphasis added)

The inability of the proposed instrumentation to detect the formation of a steam bubble void in the reactor vessel and the inability to measure the extent of core uncover are major deficiencies. In view of these deficiencies and the staff's conclusion that the proposed TMI-1 instrumentation design is unacceptable, we believe that the staff's statement to you that "some design modifications are expected to be required" was misleading. The staff's phrasing is akin to saying that a proposed automobile design that does not include wheels and an engine is acceptable although some design modifications may be required.

In sum, the NRC staff's response to the matters raised by Rep. Udall consists of ignoring the principal issue of GPU's attitude and failing to accurately inform you that the staff found GPU's belatedly proposed design changes to be unacceptable.

#### UCS's Letter

Regarding the staff's handling of the safety issues raised by UCS, it is clear that the staff did not address the substance of those issues:

- 1) The NRC's focus on quick, cheap fixes that ignore the more serious problems revealed by the TMI-2 accident;
- 2) The restrictions in the scope of the hearings which prevented consideration of important questions about the safety of restarting TMI-1;
- 3) Reducing NRC's standard of safety to the lowest common denominator by ignoring safety problems that are not unique to TMI-1;
- 4) NRC's repeated extension of deadlines for implementing the TMI-2 "lessons learned" requirements after pressure from the nuclear industry; and
- 5) The retraction or substantial weakening of commitments made by the NRC staff and GPU Nuclear to make improvements directly related to the causes of the TMI-2 accident.

Like the response to the matters raised by Rep. Udall, the staff's answer to the safety questions raised by UCS consists of ignoring the principal issues and providing misleading information on the examples. A brief discussion of just one subject, environmental qualification of safety equipment, will illustrate the deceptive nature of the staff's response to you.

Environmental qualification of safety equipment involves demonstrating that the equipment which is needed to safely shut down the plant in an accident can survive the environment that it will be exposed to during the accident. In our earlier letter to you, we pointed out that the staff's testimony had not addressed accidents such as steam line breaks and, even for small break loss-of-coolant accidents, had been limited to an accident of much smaller dimension than the TMI-2 accident. We also noted that limitations on the scope of the hearings had prevented UCS from presenting evidence that many safety-related components in TMI-1 have not been qualified to survive serious accidents. Finally, we expressed our doubts that the NRC staff and GPU Nuclear would honor their promises to correct the environmental qualification deficiencies at TMI-1 by July 1982.

In its response the staff acknowledges the accuracy of one of our statements, but misleads you on the remainder of the issues we raised. The staff states that its testimony was "directed [rather than UCS's term "limited"] to the ability of equipment to function following a small break loss of coolant accident (SBLOCA) not involving core damage . . ." Since the TMI-2 accident was a small break loss-of-coolant accident that involved substantial core damage, this confirms that the staff analyzed only an accident of the same type as, but less serious than, the TMI-2 accident.

Next the staff states its position favoring "interim operation" of TMI-1 until GPU can "complete the actions required for all operating plants under the Commission's Memorandum and Order CLI-80-21 dated May 27, 1980 to demonstrate that all safety-related electrical equipment will be qualified to withstand accident environments." CLI-80-21 specifies that all safety-related electrical equipment in all operating plants must be environmentally qualified by June 30, 1982. (11 NRC 707, 714, 715) However, the staff neglected to tell you that since July 1981, it has supported a request to extend that deadline. In October and November 1981, the staff prepared proposals for Commission consideration to accomplish that objective. Just two days after the staff's letter to you, a majority of the Commissioners voted for a proposed rule which, if adopted, will extend the June 30, 1982 "deadline" to the end of the second refueling after March 31, 1982. (See Inside N.R.C., January 11, 1982, p. 1) Thus, the situation is now even worse than when we last wrote you. GPU apparently will not be required to correct the environmental qualification deficiencies at TMI-1 until 1984 at the earliest. Furthermore, the proposed rule does not apply to all safety equipment. "Additional electrical equipment important to safety will be covered in a later rule, NRC said." (Id.) It would be pure speculation to attempt to estimate when or even if all the safety equipment in TMI-1 will be required to be environmentally qualified.

The next point in the staff's response which we believe is misleading is the statement that "[a]lthough qualification of all of the equipment has not been fully demonstrated, many of the inabilities to fully demonstrate compliance involve a lack of documentation of confirmatory test results to support a finding that the equipment is qualified." This statement creates the false impression that most of the remaining problems involve only a few missing pieces of paper or the performance of some perfunctory tests that will not provide any new information. In reality, the situation is far worse and the staff knows it. In urging the Commissioners to extend the June 30,

1982 deadline, the staff informed the Commissioners that "licensee submittals to date do not satisfactorily identify all deficiencies or provide complete justification for interim operation . . ." (Staff Recommendations Concerning Extension of June 30, 1982 Deadline for Environmental Qualification of Safety-Related Electrical Equipment, July 31, 1981, p. 2) The staff also informed the Commissioners that its "review to date has determined that full qualification has not yet been demonstrated for approximately 80% of the equipment in a harsh environment" and that it estimated "that 15-40% of the equipment in a harsh environment will need to be replaced." (Id.)

The staff's own "Safety Evaluation Report for the Environmental Qualification of Safety-Related Electrical Equipment at Three Mile Island Unit 1," dated March 24, 1981, discloses that environmental qualification deficiencies exist in the following safety systems: Emergency Core Cooling; Core Flood; Containment Spray; Auxiliary Feedwater; Nuclear Service Water; Containment Isolation; Decay Heat Removal; and Containment Cooling. The equipment involved includes pump motors, valve motor operators, pressure switches, electrical distribution centers, solenoid valves, limit switches, instruments to measure various temperatures, pressures and levels, cables for instrumentation, control and power circuits, electrical connectors, terminal blocks, containment electrical penetrations, and heat shrink tubing used as an insulator. The deficiencies range from some equipment that may be inadequate "only" because of aging effects to other equipment that may be inadequate due to the effects of temperature, pressure, humidity, chemical spray, radiation, and aging. Thus, relying solely on the staff's own documents, it is clear that the staff's letter to you is decidedly incomplete. Numerous important safety systems at TMI-1 have not been shown to be capable of functioning during an accident and, under the extension proposed by NRC, the deadline for demonstrating adequate assurance of safety will be postponed for years.

The staff successfully prevented UCS from introducing this same safety evaluation report into evidence during the restart hearings, a ruling that the Licensing Board now regrets. (Partial Initial Decision, December 14, 1981, paragraph 1162) The staff's objection to the introduction into evidence of its own safety evaluation report on environmental qualification of TMI-1 safety equipment should be contrasted with its statement to you that "[t]his issue was litigated in the TMI-1 restart proceeding." The fact is that this issue was not fully litigated.

Despite the barriers which the staff and GPU erected to preclude a complete review of the environmental qualification issue, the Licensing Board nonetheless concluded that UCS "prevailed to the extent that UCS has demonstrated that all of the safety equipment at TMI-1 will not meet all of the [environmental qualification] criteria in Regulatory Guide 1.89 at the time of restart." (Partial Initial Decision, paragraph 1181) Unfortunately, the Board declined to face the issue of whether "interim operation" of TMI-1 should be denied, in part because it also was misled into believing that the issues would be addressed by June 30, 1982. (Id.)

In sum, the staff's response regarding the safety significance of the environmental qualification issue is grossly misleading. It creates a false impression that the issues were fully litigated, that the remaining

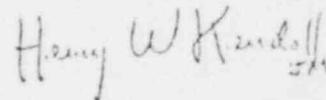
environmental qualification deficiencies are minor, and that they all will be corrected by June 30, 1982. On all these points, nothing could be further from the truth.

Conclusion

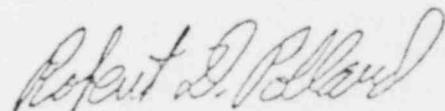
We have discussed only two of the safety issues in the staff's letter and concluded that on both the staff attempted to mislead you. The bases for this conclusion are, we believe, amply explained in the discussion above. If you would like copies of any of the referenced documents, we would be pleased to provide them. We repeat our offer to brief you or your staff on these and other safety issues relevant to restart of TMI-1 if you so desire.

We believe it is important to address one other point you made in your letter to Chairman Palladino. You commented that it would be foolish for you, as a layman, to substitute your judgment for the NRC's on whether there is adequate assurance that Unit 1 can be operated safely. We do not agree entirely with that view. It certainly would be unreasonable to expect you to become involved in analyzing the details of water level instrumentation design or the adequacy of an environmental qualification test for a particular piece of safety equipment. On the other hand, we believe that the judgments involved in assessing whether the Nuclear Regulatory Commission has conducted a careful and objective review of the relevant safety issues are well within your capability and, more importantly, your responsibilities to the residents of central Pennsylvania. In these latter areas, you need not be concerned about substituting your judgment for the Commission's. We believe that your independent review of the record will clearly show that the NRC failed in its responsibilities and that TMI-1 should not be restarted in these circumstances.

Sincerely,



Henry W. Kendall  
Chairman  
Board of Directors



Robert D. Pollard  
Nuclear Safety Engineer

cc:

Rep. Morris K. Udall  
Sen. John Heinz  
Sen. Arlen Specter  
Rep. Allen Ertel  
Rep. Robert S. Walker  
William J. Dircks