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## COMMITTEE ON INTERIOR AND INSULAR AFFAIRS

U.S. HOUSE OF REPRESENTATIVES  
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December 6, 1983

The Honorable Nunzio Palladino  
 Chairman  
 United States Nuclear Regulatory Commission  
 Washington, D.C. 20555

Dear Mr. Chairman:

This regards several issues related to consideration of General Public Utilities' request that the Commission approve restart of Three Mile Island Unit 1.

The first issue relates to the Commission's current thinking on the need for holding and completing public hearings on management competence and integrity issues prior to any decision authorizing the restart of Unit 1. On this subject, you said in your July 14, 1983 letter to me that:

I would note that by memorandum dated May 27, 1983 the Commission requested the NRC's Office of Investigations to conduct an investigation into the allegations of leak rate falsification. The Commission does not intend to make a decision on TMI-1 management competency until the relevant portions of that investigation are complete. (emphasis added)

In light of NRC staff's recommendation yesterday that TMI-1 be allowed to operate at 25% power prior to completion of the Office of Investigations reviews of competence and integrity of GPU, should I infer that the Commission policy has changed from that which was expressed to me in your July 14 letter?

On a related matter, I am aware of, and sympathetic with, sentiments expressed by Senator Specter and others to the effect that restart should not be allowed until the hearings are complete. As Chairman of the Committee having primary jurisdiction in the House over nuclear regulation, I do not

The Honorable Nunzio Palladino

December, 6, 1983

believe it appropriate to express a personal view as to when restart should occur. It is, however, appropriate and vital when questions of integrity and competence are involved (as is the case here) that the Commission take account of the views of the elected representatives of Pennsylvania.

Whatever the Commission decides in this matter should be accompanied by a full explanation of the manner in which the Commission took account of the integrity, competence and hardware issues which have been enumerated in the NRC staff studies and by intervenor groups. Among such issues are the falsification of leak rate calculations, and the November 7, 1983 federal grand jury indictment of Metropolitan Edison. Of particular concern is how the Commission weighed the implications of this indictment with respect to management participation in, or awareness of, the leak rate falsification activities.

Finally, I am concerned about the Commission's potential use of the so-called "Sholly Provision" to grant an immediately effective approval of Unit 1 steam generator repairs prior to the completion of requested public hearings on the health and safety significance of those repairs. As you know, I had qualms about the Sholly provision when it was proposed; I supported it with the understanding that it would be used carefully, and only for those license amendments which clearly pose no significant hazards consideration. As the Commission is aware, both the extent of the damage to Unit 1's steam generators, and the means of repairing that damage is unprecedented. Moreover, there is no serious question that the safe operation of steam generators is integral to the safe operation of a nuclear plant. I cannot understand, therefore, how TMI's steam generators can be recommissioned without a public accounting of why their use poses no significant hazard to the health and safety of the public.

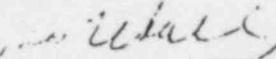
I am somewhat surprised to find that the staff has made a "no significant hazards" determination in the case of the TMI-1 steam generators. The facts available to me do not present the sort of circumstances I had in mind to trigger the Sholly provision when I supported that legislation (i.e. non-safety related, routine, license amendments so that the agency resources could be devoted to significant matters of public concern). I'm certain, members of the Subcommittee and the public would appreciate a full explanation by the Commission as to why the steam generator questions do not constitute "significant hazard" and thus can be considered under the Sholly provision if it is invoked.

The Honorable Nunzio Palladino

December 6, 1983

I appreciate your prompt attention to this matter, and look forward to the Commission's response. As always, in addition to the collegial view of the Commission on each of these questions, I welcome separate and differing views of individual commissioners.

Sincerely,



MORRIS K. UDALL  
Chairman

UCS 12/9/83

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

In the Matter of )  
METROPOLITAN EDISON COMPANY )  
(Three Mile Island Nuclear )  
Station, Unit No. 1 )

Docket No. 50-289  
(Restart)

UNION OF CONCERNED SCIENTISTS RESPONSE TO  
GPU LETTER OF DECEMBER 6, 1983, REGARDING  
EMERGENCY FEEDWATER FLOW INSTRUMENTATION

Introduction

On December 6, 1983, counsel for GPU transmitted to you a document which it characterized as "potentially relevant and material to matters under adjudication in the plant design and procedures phase" of the TMI-1 restart proceeding. The document is a letter from H. D. Hukill, Director of TMI-1, to the NRC, dated November 23, 1983. The letter discloses that the emergency feedwater flow instruments installed at TMI-1 to comply with the short-term "lessons learned" requirements do not meet NRC's criteria or GPU's commitment in the restart proceeding. In essence, GPU requests an exemption from those requirements, although its submission obscures this, as we will describe below. There is no justification for granting such an exemption and UCS therefore urges that you not permit the plant to operate without accurate feedwater flow instrumentation.

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## Background

The NRC's TMI-2 Lessons Learned Task Force noted that "the need for an emergency feedwater system of high reliability is a clear lesson learned from the TMI-2 accident."<sup>1/</sup> The Task Force recommended, among other things, that safety-grade indication of emergency feedwater flow be provided for each steam generator and that such instrumentation be installed by January 1, 1980.<sup>2/</sup> This requirement was later clarified to require, for TMI-1 and other Babcock and Wilcox plants, two emergency feedwater flowrate indicators for each steam generator. The implementation schedule was extended such that final design information was to be submitted to NRC by January 1, 1981, and installation completed by July 1, 1981.<sup>3/</sup>

During the restart hearing, the NRC Staff testified that: 1) each instrument should have "an accuracy on the order of +10%," 2) the licensee had committed to installing two safety grade sonic flow devices on each of the two emergency feedwater pipes, and 3) the licensee indicated that these new flow devices would have "an accuracy of better than +5%."<sup>4/</sup> The Staff concluded, on that basis, that TMI-1 was in compliance with all the short-term requirements applicable to the emergency feedwater flow indicators, subject only to the submittal of environmental qualification certification.<sup>5/</sup>

In a letter dated May 24, 1983, GPU advised the NRC Staff that two of the four installed emergency feedwater sonic flow devices would be replaced with

<sup>1/</sup> NUREG-0578, "TMI-2 Lessons Learned Task Force Status Report and Short-Term Recommendations," July 1979, p. 10.

<sup>2/</sup> Id., pp. 11, A-32, and B-2.

<sup>3/</sup> NUREG-0737, "Clarification of TMI Action Plan Requirements," November 1980, pp. II.E.1.2-4, -5.

<sup>4/</sup> Staff Ex. 1, NUREG-0680, "TMI-1 Restart," June 1980, p. C8-39.

<sup>5/</sup> Id., p. C8-40. See also NUREG-0680, Supp. No. 3, April 1981, pp. 38-39.

differential pressure transmitters. On August 25, 1983, GPU notified the NRC Staff that further testing had shown the remaining sonic flow devices to be unsatisfactory and that, by restart, all of the sonic flow devices would be replaced with differential pressure transmitters.

In a letter dated September 22, 1983 (copy attached), the NRC Staff informed GPU that the change to differential pressure transmitters was acceptable to meet the short-term lessons learned requirements pertaining to emergency feedwater flow indication.<sup>6/</sup>

#### Discussion

In its November 23, 1983 letter, GPU discloses that its August 25, 1983, assurance that the differential pressure instruments for measuring emergency feedwater flow "are reliable and accurate and are designed to monitor the full range of system flow requirements," is incorrect. Tests have disclosed that with emergency feedwater flow less than 100 gpm, oscillations cause the indicated flow to be inaccurate by more than 10%. (GPU does not say how far outside the +10% accuracy requirement the flow indication lies.) Nevertheless, GPU concludes that the emergency feedwater flow system as currently installed and tested at TMI-1 "is acceptable and meets the requirements of NUREG 0737 and our commitment as reflected in the Partial Initial Decision of December 14, 1981."

<sup>6/</sup> We note the sharp contrast between the Staff's letter approving the differential pressure instruments and its earlier approval of the sonic flow devices in NRC EG-0680, p. C8-39, 40. The earlier approval describes the sonic flow devices in great detail, which creates the impression that the Staff reviewed the design. The recent approval of the differential pressure transmitters provides neither a description of the design nor a basis for the Staff's approval. However, this contrast may not be significant because the earlier Staff testimony in NUREG-0680 is little more than a rewording of the material supplied by GPU. See Lic. Ex. 1, Report in Response to NRC Staff Recommended Requirements for Restart of Three Mile Island Nuclear Station Unit 1, p. 2.1-23.

Paragraph 1029 of the Licensing Board's December 14, 1981 Partial

Initial Decision is as follows:

The original EFW system design did not have any provision for indication in the control room of emergency feedwater flow. Safety-grade, redundant indication of EFW flow to each steam generator will be provided in the control room prior to restart. Licensee has committed to perform a functional test of the new EFW flow instrumentation prior to restart. Based upon the Staff's review of the Licensee's design for providing safety-grade EFW flow indication in the control room and on the information that the flow transducers are qualified for operation in the assumed environment from a postulated main steam line break in the Intermediate Building, the Staff has concluded that Licensee is in compliance with the NUREG-0578 recommendation, in item 2.1.7.b, for emergency feedwater flow indication to the steam generators. The Staff will verify that the flow devices are installed and suitably qualified prior to restart. [Citations omitted.]

Based on the information provided in GPU's November 23 letter, UCS concludes that the short-term lessons learned requirements for emergency feedwater flow indication have not been met at TMI-1. The basis for this conclusion follows.

GPU claims that its admittedly inaccurate emergency feedwater flow instrumentation does "not affect the functional capability of the EFW system or the ability of the operator to take proper action." We agree that lack of reliable flow indication does not directly affect the functional capability of the emergency feedwater system, but it can (and during the TMI-2 accident did) affect proper operator action. During the TMI-2 accident, the lack of EFW flow indication did not, in fact, affect the functional capability of the EFW system. However, there was no EFW flow initially because two valves were closed, and the lack of EFW flow instrumentation delayed proper operator action for about 12 minutes.

GPU also claims that, if the EFW system is automatically initiated, "accuracy of flow rate is not necessary at low flows." GPU apparently overlooks the fact that the EFW pumps are cooled by that flow. If the EFW flow control

valves are closed, a failure of the pump recirculation flow paths could require prompt operator action to prevent failure of the EFW pumps.

During manual control of EFW flow, GPU claims that the operator's attention would be focused on the indication of steam generator level and pressure, not on EFW flow indication. Again GPU's memory is short. During the TMI-2 accident, the operators focussed their attention on a few instruments and ignored others, to the detriment of core integrity. Does GPU now propose to stand on its head the lesson learned that operators should not focus their attention on only a few instruments?

GPU's claim that the operators do not need to use EFW flow indication to control steam generator level also directly contradicts the lessons learned requirements. The requirement to install two EFW flow indicators for each steam generator in B&W plants like TMI-1 stemmed from the need "to provide the capability in the control room to ascertain the actual performance" of the emergency feedwater system.<sup>7/</sup> This requirement was relaxed, for Westinghouse and Combustion Engineering plants, to the extent that only one EFW flow indicator for each steam generator was required "for PWRs with U-tube steam generators because flow indication is of secondary importance in assuring steam generator cooling capability for steam generators of this design."<sup>8/</sup> Because TMI-1 uses a once-through steam generator design, EFW flow is of primary importance.

GPU's proposal also ignores the experience of the TMI-2 accident in another respect. During the TMI-2 accident, the operators ignored indications of extremely high temperatures in the core because they knew the instruments were not safety grade and thus potentially unreliable. Now GPU proposes to operate

<sup>7/</sup> NUREG-0737, p. II.E.1.2-4.

<sup>8/</sup> Id.

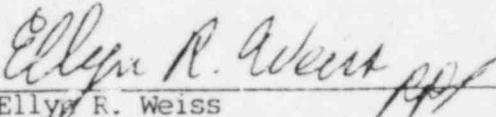
TMI-1 with unreliable EFW flow indication and "assist the operators in understanding how the EFW flow devices are expected to perform under various EFW flow conditions," i.e., inaccurately.

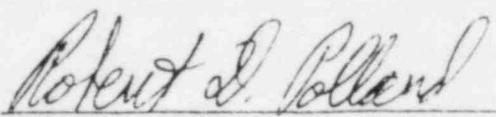
Conclusion

The short-term lessons learned of NUREG-0737 specifically require for B&W reactors precisely what TMI-1 does not have: emergency feedwater flow instrumentation meeting strict, detailed performance criteria to ensure that operators can rely on them. These requirements can not be met by installing faulty instruments and telling the operators to ignore them. To even suggest such a response is disingenuous in the extreme. Because GPU has failed in two attempts over a period of several years to design an accurate, reliable EFW flow indication system, it is reasonable to conclude that this further demonstrates the licensee's technical incompetence.

Since the industry-wide deadline for installing this instrumentation was July 1, 1983, we assume that all other operating plants have met the pertinent requirements. There is no reason to exempt TMI-1. Therefore, TMI-1 should not be permitted to restart until it also complies with this "short-term" requirement.

Respectfully submitted,

  
Ellyn R. Weiss  
General Counsel

  
Robert D. Pollard  
Nuclear Safety Engineer

Dated: December 9, 1983



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

September 22, 1983

Docket No. 50-289

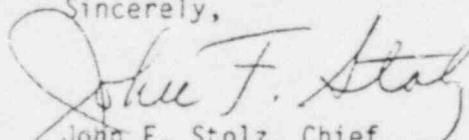
Mr. Henry D. Hukill  
Vice President  
GPU Nuclear Corporation  
P. O. Box 480  
Middletown, Pennsylvania 17057

Dear Mr. Hukill:

By order dated August 9, 1979, the Commission required, in part, that GPUN provide indication in the TMI-1 Control Room of emergency feedwater system (EFW) flow to each steam generator prior to any subsequent restart. To satisfy this requirement, GPUN committed to install two safety-grade sonic flow devices on the flow path to each steam generator to provide Control Room indication of EFW flow. This commitment was reviewed and found acceptable by the NRC staff as documented in the TMI-1 Restart Safety Evaluation (NUREG-0680) pages C1-5 and C8-39, 40 and NUREG-0680, Supplement 3 pages 38-39.

Recently by letters dated May 24, 1983 and August 25, 1983, you advised us that, due to signal interference problems between the sonic flow devices and other unsuccessful test results, you have decided to remove the sonic flow devices and replace them with differential pressure transmitters. We have received the information provided in your submittals and, based upon that review, we conclude the changes you propose satisfy the requirements of Part 2, to NUREG-0737 Action Item II.E.1.2 "Auxiliary Feedwater System Automatic Initiation and Flow Indication" and are therefore acceptable.

Sincerely,

  
John F. Stolz, Chief  
Operating Reactors Branch #4  
Division of Licensing

cc:  
See next page

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# UNION OF CONCERNED SCIENTISTS

1346 Connecticut Avenue, N.W. • S. 1101 • Washington, DC 20036 • (202) 296-5600

The State of the Nuclear Industry and the NRC:

A Critical View

A presentation of the Union of Concerned Scientists  
to the Nuclear Regulatory Commission

November 17, 1983

Eric E. Van Loon

Executive Director

Ellyn R. Weiss

General Counsel

Today marks an unusual occasion. After more than a decade of UCS criticisms of the nuclear power program, many reports on nuclear safety, repeated appearances before Congress, years of litigation, and several debates in public forums, this is the first time that the Union of Concerned Scientists and the five NRC Commissioners have taken the opportunity to sit down together to discuss nuclear fundamentals. UCS appreciates this opportunity for a frank exchange of views. Today, we wish to address briefly the condition of nuclear power in the United States, and then focus primarily on the role of the Commission and its regulatory responsibilities.

There is little doubt that nuclear power is in trouble in America today. The basic facts are familiar to us all: the five year de facto moratorium on new orders, the cancellation of virtually every plant ordered since 1974, the unpromising outlook for reactor sales for the rest of this decade. And while lowered demand forecasts, soaring construction costs, and high interest rates have doubtless contributed to this picture, something more, something particularly related to nuclear power is at work. Since 1979, 26 coal plants have been ordered nationwide. According to the National Coal Association, 21 new coal-fired units went into operation last year, providing 10,400 megawatts of power, compared to 3000 megawatts from new nuclear units. These figures tell us that utilities continue to require new capacity, but they are declining to choose nuclear energy to meet these needs.

The underlying reason for this direction, UCS believes, is that nuclear power has lost the public's as well as the investors' confidence. Two years ago this month, an NBC News/Associated Press poll signaled a fundamental shift in public attitudes:

A majority of the public--56%--do not want more nuclear power plants built in the United States. This opinion is the reverse of our findings four and a half years ago, when nearly two-thirds of the public favored new nuclear power facilities (Poll #72, 24 November 1981).

Industry polls taken in the past six months confirm that majority opposition to nuclear power continues today. The American Nuclear Society's Nuclear Report found in May 1983 that the 33% public support for nuclear power in a Cambridge Reports poll constituted "the lowest level of support nuclear power has ever had, including immediately after Three Mile Island, and represents a steady decline from overwhelming support in the early 1970's."

4. Why has the public become disenchanted with nuclear power? UCS sees four principal reasons. First, nuclear power, unlike most other forms of electricity generation, entails a risk of catastrophic accidents. Second, the public is justifiably concerned about the continued production of extremely toxic and long-lived radioactive wastes which no one has yet isolated from the environment. Third, industry operations have been marred by repeated instances of ineptitude that would be comic if they were not so potentially disastrous. The Diablo Canyon blueprint reversal, Zimmer's and Midland's quality assurance problems, and GPU operators' cheating after the accident -- to name a prominent few -- are examples of repeated industry lapses which undermine the fervent assurances that in the area of nuclear safety, nothing serious can go wrong.

The fourth factor affecting public confidence is equally important, and is more directly within your purview: the public, in our view, believes that it is no longer being protected by its government -- that there is no tough, effective cop on the nuclear beat. A consistent pattern of Commission actions broadcasts the message, intended or not, that safety is not this Commission's highest priority.

While nuclear's economic problems are largely beyond your control, the public's safety -- and the public's faith -- are clearly in your bailiwick. In order to restore a significant measure of confidence, the Commission must insist on safety first, institute measures to reinforce the "safety first" mandate within the NRC staff, and act firmly toward an industry sorely in need of discipline. Only a firm and steady hand can restore the credibility necessary for you to regain public confidence and, in our view, the respect of the industry you are charged with regulating.

With this prescription on the table, let me return to a diagnosis of the problem. In our view, the agency's shortcomings in its regulatory role have fallen rather consistently into three categories:

(1) The NRC has been unable or unwilling to resolve fundamental reactor safety problems;

(2) The Commission has repeatedly tolerated a slow, reluctant or obscuring response to known safety hazards; and,

(3) The Commission and its staff have been hostile to those raising safety concerns.

I will present several examples of Commission actions which illustrate the first two points, and UCS General Counsel Ellyn Weiss will follow with our views on the handling of public participation at the NRC.

The first example we wish to highlight -- the agency's reaction to the Bingham Amendment, introduced by Congressman Jonathan Bingham after the Three Mile Island accident -- casts doubt on how much the NRC knows about the level of safety at operating reactors. This amendment to the 1980 NRC authorization act directed the agency to identify which operating nuclear plants meet current safety requirements, and which generic unresolved safety issues have technical solutions. A majority of the then-NRC Commissioners (Ahearne, Hendrie and Kennedy) objected to this task, indicating that the resources required to collect the data showing which plants met Commission licensing requirements would strain the agency's manpower. The Commission majority conceded, in essence, that its staff was unable to determine which safety requirements had been applied in its licensing reviews. Commissioners Bradford and Gilinsky called this disclosure evidence of a "stunning disarray in the status of NRC knowledge of operating plants..." As you know, the Bingham amendment was never implemented.

Sadly, such delay and obfuscation has become a familiar pattern, and the Commission's enforcement of safety standards has failed at crucial moments. In recent months, we have seen two striking examples in the NRC's handling of the Indian Point emergency preparedness issue in June and the BWR pipe cracking controversy in July.

Of Indian Point, little need be said. A Commission majority selected the plant upwind from the nation's most densely populated area to announce, in effect, that it would not stand behind its emergency planning regulations. And the BWR pipe-cracking sequence, with the Commission's quick reversal of an initial firm stance by the Staff undermined enforcement in this and future cases. The pipe-cracking problem deserves a brief elaboration.

Two decades ago, an Oak Ridge research report disclosed the potential for cracking in stainless steel. Stress-corrosion cracking was listed in 1975 as an unresolved safety problem slated to be resolved in 1976. The discovery of widespread cracking in primary and emergency piping systems in many plants has brought immediacy to the issue. It is now apparent that current inspection techniques are grossly inadequate, and the cracks may be deeper and more numerous than inspections have indicated.

Our focus is directed, however, to the events of July 14th and 15th. Harold Denton, not a frequent advocate of plant shutdowns, called on July 14th for closing five BWRs within 30 days for inspection. The very next day, the Commission met with industry representatives and rescinded the order -- an action not likely to inspire public confidence in the agency's commitment to safety. Indeed, as Richard Vollmer of the Staff explained the rescission to a reporter, "Industry gave them [the Commissioners] a good enough story that said [safety] ... was outweighed by the costs of downtime to the utilities." Neither EPRI's round robin test results nor the August 9th Advisory Committee on Reactor Safeguards rebuke have moved the agency to take the action that is so clearly prudent -- closing the plants quickly to check each of them thoroughly for potentially dangerous cracking.

## Environmental Qualification: A Case Study in Delay

A prime example of the NRC's failure to resolve a safety issue promptly -- indeed, at times, to obstruct safety progress -- is the "environmental qualification" of electrical equipment needed to mitigate an accident.

Nuclear plant safety systems must be able to function during an accident. A regulation requiring environmental qualification has been on the books for many years. In a 1978 ruling, the Commission acknowledged that environmental qualification is "fundamental to NRC regulation of nuclear power reactors." On October 8, 1982, more than four years after this statement, the Staff informed the Commission that more than 80% of the safety equipment in operating plants still had not been shown to be capable of functioning properly when exposed to the harsh environment caused by an accident. Equally disturbing is the fact that the NRC delayed this information coming before the public until last month when it was released in response to one of our Freedom of Information Act requests.

UCS first brought the environmental qualification issue before the Commission in November 1977 when we concluded that results from NRC-sponsored environmental qualification tests demonstrated the inadequacy of NRC's standards. The day after we raised this issue, the NRC staff issued a statement claiming that UCS had misconstrued the safety significance of the test results and that none of the equipment which failed the tests was used in safety systems in any operating plant. (Both these claims were later shown to be totally unfounded.)

Shortly thereafter, the NRC nonetheless asked nuclear operators to supply information concerning the environmental qualification of equipment in operating plants. In 1980, after two and a half years of the utilities largely ignoring the NRC requests, the Commission gave the industry almost two more years -- until June 30, 1982 -- to demonstrate that their safety equipment was qualified to operate in an accident environment. The Staff subsequently amended the license of each operating plant to incorporate the 1982 deadline to ensure its enforceability. (No licensee requested a hearing to oppose this license amendment.) In its 1980 order, the Commission also established a new and stricter set of qualification criteria, conceding the clear inadequacy of the prior standards.

A year later, in June 1981, a group of utilities asked the Commission to postpone the June 30, 1982 "deadline" another year on the sole ground that they could not meet it. Without an extension, they claimed, they would have to shut down their plants. Remarkably, the NRC staff responded to this request with a far more generous proposal - a two year extension -- and the Staff added exceptions that could, potentially, allow unlimited delay. In arguing for this proposal, the Staff disclosed that its evaluation of about 20% of the equipment essential to safety in operating plants, led it to estimate that 15 to 40% of the equipment was "unqualified" and would need to be replaced. The Staff argued, in effect, that the plants should be allowed to remain in operation until it determined which equipment was defective.

When the June 30, 1982 deadline arrived, the Commission published an immediately effective rule waiving the "deadline" altogether, but provided no

opportunity for public comment or hearings on this action. On October 8, 1982, the Staff provided the Commission with a report (SECY-82-409) which showed that its 15 to 40% estimate of unqualified equipment had been optimistic: 1) 44.6% of the equipment in operating plants has to be replaced, physically modified, relocated, shielded, or tested further; and 2) 31.1% of the equipment lacked documentation to determine whether it was environmentally qualified or needed to be replaced, modified, relocated, shielded, or tested. Altogether, 84.8% of the electrical equipment relied upon to protect the public in the event of an accident was not shown to be environmentally qualified and only 6.6% of the equipment was fully qualified. (The remaining 7.6% of the equipment did not need to be qualified because it did not provide a safety function or was not, because of its location, exposed to the harsh accident environment.)

This status report, five years after the Commission began its efforts to get licensees to demonstrate the qualification of safety equipment, showing that only 6.6% of the safety-related electrical equipment was a sorry statement. However, the Commission apparently did not recognize how sharply it contradicted the assurances given by the Staff in the spring of 1982 before the Commission suspended the June 1982 deadline. The impression created by the Staff was that most equipment was qualified and that adequate justification for continued safe operation had been obtained for the equipment which was not shown to be qualified. Unfortunately, the Staff neglected to tell the Commission that neither the Staff nor its contractor had independently verified the licensees' claims concerning equipment identified as environmentally qualified. It was only afterwards that the Staff began reviewing those claims. Apparently, it was this subsequent review which led the Staff to conclude that only 6.6% of the equipment was actually fully qualified.

The most recent development in this tortuous saga is a June 30, 1983 D.C. Circuit Court of Appeals decision (in a suit filed by UCS) that the NRC had violated the Atomic Energy Act, the Administrative Procedure Act, and its own rules when it suspended the June 30, 1982 deadline without providing opportunity for public comment. NRC lawyers argued to the Court that the NRC rule requiring an opportunity for public comment "in the manner stated in the [Federal Register] notice" had been met because offering no opportunity to comment was one way of regulating the manner of commenting. The Commission's lawyers also argued that NRC's safety determination - that continued operation of the plants pending completion of the environmental qualification program will not present undue risk to the public health and safety -- was an insignificant "ancillary finding" or "explanatory background remark" which was not "not a part of the rule." Of course, without such a finding the Commission could not allow the plants to remain in operation.

Since the Appeals Court ruling, NRC resistance has taken still another tack. More than four months after the Court ordered the Commission to "provide an opportunity for comment on the sufficiency of current documentation purporting to justify continued operation pending completion of environmental qualification of safety-related equipment," no opportunity for public comment has been provided. This is perhaps not surprising, however, since NRC attorneys told UCS after the Court ruling that even though UCS prevailed, NRC could exercise its discretion by doing nothing.



The handling of the environmental qualification problem thus presents a glaring example of NRC's disregard for its statutory mandate. The Commission staff plainly failed to protect the public health and safety. It repeatedly yielded in the face of industry nonperformance. The agency refused to meet the minimum legal requirements for public participation. It has ignored the express direction of a Federal Court. And the Staff has kept important information about the safety of nuclear power plants from the public and, at times, from the Commissioners themselves.

#### The CRGR: A Safety Bottleneck?

More currently, the entire "backfitting" controversy -- and particularly the role of the Committee to Review Generic Requirements (CRGR) -- raises additional questions about the NRC's priorities and performance. As the Commission has acknowledged, establishment of a backfitting rule involves "a number of broad policy questions", all of which, in our opinion, are extremely complex, and none of which have yet been adequately analyzed. We appreciate the Commission's effort to gain a better understanding of these issues by asking a number of thoughtful questions in its Advance Notice of Proposed Rulemaking. We will not now repeat our analyses of these issues, which we submitted in our comments of October 28.

Although in our view an inordinate amount of time has been spent on resolving a backfitting problem that has neither been clearly defined nor proven to exist, UCS supports the concept of creating a more "rational" backfitting process which assures that requirements are well-considered and justified, and that licensees do not receive conflicting signals that could be detrimental to safety from different organizations and levels of Staff. However, both the CRGR, and the backfitting proposals to date, aim less toward this goal and more toward establishing an irrational system in which licensees can avoid backfitting.

Part of this irrationality derives from CRGR's use of cost-benefit analysis and probabilistic risk assessment (PRA). While cost-benefit analysis has a certain superficial appeal (who is opposed to preventing wasteful expenditures?), this initial attractiveness cannot withstand close scrutiny. The most fundamental problem is that benefits cannot be fairly quantified. The "benefit" side of the ledger is the reduction of accident risk. This reduction can only be measured by the use of a PRA. However, as you know, the bottom-line results of any PRA are enormously imprecise for the most serious accidents; the uncertainty bands range to a factor of 100 or more. This inherent lack of precision makes a quantitative balancing of costs against benefits essentially meaningless. Cost-benefit analysis, like PRA, becomes a tool that can be manipulated to produce a preselected result.

Second, cost-benefit analyses done to date do not properly factor in the cost of all accidents. Risk reduction is measured by the avoidance of public radiation dose, with an arbitrary monetary amount set for each man-rem. The full economic costs of a serious accident, ranging in the billions of dollars, are not accurately incorporated.

Cost-benefit analysis, therefore, does not provide an objective basis for nuclear safety decisionmaking. It is very likely to be used to forestall safety improvements indefinitely. The Army Corps of Engineers' cost-benefit

analyses, in which it juggled and rejuggled the figures to justify a predetermined conclusion, were legendary. Protection of the public from nuclear accidents is too important to be relegated to the same treatment.

The legality of NRC's use of cost-benefit analysis is also questionable. The Atomic Energy Act requires the Commission to assure protection of the public health and safety, and any step necessary to fulfill that mandate must be taken. NRC case law is remarkably consistent in its acceptance of the principle that costs are not a legitimate factor in safety decisions. Adoption of a cost-benefit approach represents a dramatic departure from the guiding principles NRC and AEC have always enunciated.

Nor can a process to assess the need for safety improvements be rational if it is not accessible to all sides in the debate. CRGR is almost completely insulated from public scrutiny, with limited access to relevant documents and only sketchy minutes of meetings. There are no transcripts by which the public can ascertain how CRGR arrives at its decisions. The best picture one can get from such a restricted view of CRGR is that of a black hole, into which issues fall and never emerge. Many items forwarded to CRGR are sent back to the staff for more review and/or modifications which, although it is difficult to tell, appear to significantly weaken their effectiveness. CRGR requires extensive, time-consuming cost-benefit analyses, and demands new analyses if it is not satisfied with the results of the first ones. The result is a bottleneck where items sent back to the staff sometimes never resurface, with no date in sight for the next CRGR review, much less a deadline for final agency resolution. Clearly, CRGR's interest in cost-benefit analysis is not balanced with an equally strong interest in resolving safety problems.

Cases where CRGR appears to have caused long delays include:

\*Regulatory Guide SC78-4, "Qualification and Acceptance Tests for Snubbers Used in Systems Important to Safety". CRGR held two meetings on this topic, in March and again in May 1982. CRGR asked the staff at Nuclear Regulatory Research (RES) to analyze a number of aspects of the benefits of this Guide in light of an expensive estimate of implementation costs (supplied by utilities). RES is still working on this item, with no date scheduled for another CRGR review.

\*USI A-43 "Containment Emergency Sump Performance", where CRGR supported two Nuclear Reactor Regulation (NRR) proposals which would reduce requirements on future OL applicants, but disagreed with one proposal requiring utilities to perform plant-specific analyses. At two meetings, in November and December 1982, CRGR complained that NRR's analysis of this requirement overstated the benefits (which NRR claimed outweighed the costs) and understated the costs. At the second meeting, CRGR told NRR to "review their risk reduction analysis in light of the analysis performed by the Deputy Executive Director for Regional Operations and Generic Requirements (DEDROGR) staff with the objective of developing the most realistic assessment of averted radiological dose." We understand that the package has gone out for comment, and NRR, in addition to considering the comments, is still doing cost-benefit work in anticipation of another CRGR review.

\*The Anticipated Transient Without Scram Rule, where in November 1982 CRGR requested an extensive cost-benefit analysis, which RES performed before CRGR's second meeting on the rule in January 1983. However, at the January meeting, CRGR decided that it was unable to determine the total safety benefits and costs of implementing all the modifications identified by the staff, and RES agreed that the ATWS rulemaking package would attempt to address them all. At the next meeting, after the Salem plant suffered two ATWS incidents, CRGR continued to look for ways in which utilities could avoid full implementation of the requirements, suggesting that, for example, a plant may reach an age where the benefits of full implementation may not justify the costs. Four meetings later, in May 1983 CRGR was still requesting additional cost-benefit justification.

A case where the mere prospect of the CRGR-required cost-benefit analysis seriously delayed progress is "Systems Interaction", an Unresolved Safety Issue which was later turned into Action Plan item II.C.3. According to an NRC Staff member, in October 1981 approval was given by DST to a proposal for initiation of the methodology demonstration phase of the post-TMI systems interaction program. NRR's approval was needed for final selection of the pilot plants which would be used, but NRR took no action, and "the effort stalled at that point, apparently over concerns that developed in connection with cost-benefit estimates required for the expected review by [CRGR] of any NRR approval action on this proposal." The emphasis on achieving cost-benefit advantages (to help in gaining acceptance from CRGR), led to a proposal to combine the systems interaction program with an already envisioned NREP/SEP combined review program, to eliminate duplicative aspects of the three programs. This delayed NRR approval of the October 1981 DST proposal again, as the new proposal was explored further. The original proposal was eventually dropped altogether, and we understand that no approval has been given by NRR for implementation of any systems interaction methodology demonstration studies under any option. The same Staff member concludes that "...the basic error involved was in RRAB, DST and NRR management (i) not taking a more aggressive posture with CRGR in presenting the II.3.C related program proposal on its own merits, i.e. as a necessary program for timely resolution of a USI, and (ii) not resisting the post-facto imposition of cost-benefit criterion in a way that...delayed excessively the progress of that necessary program." Thus, the NRC has made virtually no forward progress on systems interaction, which has been an unresolved safety issue for years, and is now further away from its ultimate resolution.

Finally, we were utterly amazed at the Staff's triumphant boast (in a Summary and Assessment of CRGR Activities To Date of February 28, 1983) that:

There has been a substantial reduction in the number of new generic requirements imposed on reactor licensees since the inception of CRGR. For instance, the staff had projected there would be 1900 new operating reactor licensing actions generated in FY-1982, whereas the actual number was less than 900 new actions. Most of this reduction was in the number of multi-plant actions and can, I believe, be attributed to the existence of CRGR. Thus, the CRGR had a major impact in the staff's achievement of reducing the operating reactor licensing backlog from about 5400 to 3600 actions during FY-1982.

Until then, we had been unaware that CRGR's purpose was to clear the agency's regulatory docket. This by-the-numbers approach to safety regulation, with its attendant bias against any new requirements, is hardly compatible with the mandate of the Atomic Energy Act.

The Commission, in its struggle to promulgate a backfitting rule, has acknowledged that many complex problems arise in determining what standards and methods should be used to justify backfits. Yet the Commission is ignoring these problems altogether in allowing CRGR to operate as it does.

#### The Hartman Allegations: Unanswered Questions

It has been over a week since indictments were handed down against the Metropolitan Edison Company for intentionally and systematically falsifying leak rate calculations at TMI-2 for months before the accident. Because we are sensitive to the ex parte restrictions on discussing the merits of this matter which is before the Commission, we will not deal with the substance of the charges beyond what is now widely available publicly. But we will raise several questions about the NRC's handling of this matter which you as Commissioners need to address because they go to the heart of your agency's effectiveness and credibility.

The first question is: Considering that this agency was informed in May 1979 of the facts underlying these indictments, how can it be that 4 1/2 years later, NRC has not taken any action? Indeed, these charges have not even been brought before the Licensing or Appeal Boards, nor has your own investigation been concluded.

How can it be that, in its only official communications to the TMI Restart Licensing Board on the matter, the Staff obfuscated the charges, failed utterly to disclose the evidence which it had in hand and, in fact, (and I believe this is the most serious) actively misled the Boards and the public by downplaying the significance of the charges?

Why is there no discussion of this issue in NRC's official accident investigations, either that prepared by I & E or the so-called "Rogovin Report," although the facts were known to both Staff groups at the time?

Why did NRC take no action whatever on the charges for almost a year, from May 1979 until April 1980, until a television reporter discovered and publicized them?

How could the Staff have continued to enthusiastically endorse GPU's management competence and integrity until the spring of 1983, when it had evidence three years earlier that these charges were true?

What happened in the spring of 1983 to trigger the Staff's belated withdrawal of its endorsement and its desire to confirm the existence of "procedures for procedure compliance" at TMI? Was it fear of being embarrassed by the issuance of indictments?

The answers offered to these questions thus far are weak and unsatisfying. We are told that the Staff advised the Commissioners "orally" of the seriousness of the charges. If the Commission was secretly told that

Hartman's charges were substantiated while at the same time the ASLB, which was adjudicating GPU's management competence on the record in public hearings, was led to believe that there were no serious questions about the utility's competence and integrity, that makes the adjudicatory process a charade. It also constitutes an egregious violation of the statutory prohibition against secret, off-the-record contacts by the Staff to the decision-makers. \* \*

It is possible that some -- even at NRC -- may not understand why the agency cares about the integrity of its licensees. You have no choice but to care. Your inspectors and technical staff are humanly capable of reviewing only a tiny fraction of the work done on these plants during construction and operation. A string of recent cases -- including South Texas, Zimmer, Midland and Diablo Canyon -- confirm that it is only too possible for a plant to be virtually completed with NRC approval all along, only to discover through a whistleblower or otherwise that your rules have been flouted.

In addition, hardly a week passes without an I & E Circular or Notice informing licensees of some operational problem or equipment failure, directing licensees to investigate, but requiring no response. You trust the licensees to do what is necessary. That is why you must be able to have total confidence in their integrity. In the nuclear safety context, integrity cannot be separated from competence.

It is no less necessary to insist upon the highest standards from your own Staff. There are many honorable and highly competent people in this agency. They will give you what they believe you want. If you want effective and forceful regulation, we suggest that you will need to take action in this case to hold accountable those who were responsible for this failure of enforcement.

#### RECOMMENDATIONS: A Question of Mindset

From UCS's perspective, these examples illustrate an agency which has lost sight of its mandate. On the face of this record, what can be done to begin to restore confidence in the agency charged with being the public's protector, the firm cop on the nuclear beat?

Proposing a cure is difficult, since this is not a problem of rules or statutory authority. Instead, consistent with the central finding of the Kemeny Commission, it is a problem of mindset. Unfortunately, the agency has a short institutional memory, and the strength of that insight has greatly faded in the past 4 years. As a guiding principle, we cannot do better than to reiterate Kemeny's finding that "fundamental changes" are "necessary" in NRC's attitude, which must change from one of complacency to "one that says nuclear power is by its very nature potentially dangerous, and, therefore, one must continually question whether the safeguards already in place are sufficient to prevent major accidents."

You as Commissioners may well feel and believe that changes have been major and that tough-minded vigilance is now the NRC norm. Whatever your intentions, however, your actions speak louder -- and convey an opposite pattern. As one Commissioner has publicly observed, senior staff which rushed in the months following TMI to propose newer, stricter safety requirements have switched in the meantime to suggesting ways to roll back what are now

viewed as unnecessarily overzealous measures. The Commission's decisions have set the norm, and your actions in recent years have not set a standard of vigilant public protection.

As critical to public confidence as the actual decisions you make is the manner in which the Staff carries out its extensive responsibilities. The standards of integrity and carefulness you demand of the Staff are as important as the standards you set for yourselves. Arguably, they are even more important, because you depend heavily on the Staff to carry out your responsibilities. The arcane nature of this technology, the relative brevity of the Commissioners' terms, the sheer volume of paperwork that nuclear regulation entails -- all create a situation in which the Staff plays a central role in regulatory decisions. You must depend on them for full and honest reporting to you, and unblemished integrity in dealing with the industry you regulate.

In addition to the cases already discussed -- the Staff treatment of the Hartman allegations and the handling of information about environmental qualification -- we could cite many examples of Staff actions which undermine NRC's integrity as a regulatory agency. The Staff giving an early draft of the TMI Lessons Learned report to GPU and later deleted statements critical of the utility; a similar early "review" of the quality assurance study on Diablo Canyon by the licensee, with the Staff accepting many of its proposed changes; the pattern of conduct described in the Hoyt report on the Applegate allegations -- these are some of the most publicized but unquestionably not the only (and in our view, not atypical) examples of, to put it in the vernacular, Staff "~~misconduct~~" with the ~~intention~~ it is supposed to keep at arm's length.

While this is not the proper forum to review specific instances of individual conduct, suffice it to say that Staff members heavily involved in these sorts of activities should not be rewarded with promotions, citations or financial bonuses, regardless of their other contributions to the regulatory process. To do so sends a message that such conduct is accepted, even encouraged, when it should be punished. Your ability to influence the behavior of your large, long-entrenched Staff is not unlimited, and the signals you send down the ranks should never be ambiguous.

You will need to maintain an attitude of questioning skepticism as you proceed to issues on your regulatory agenda, some of which involve the central premises of nuclear regulation. For your performance to inspire public confidence, you must avoid the old patterns of backdoor industry influence and resistance to outside advice. We will turn to a few of those issues now.

#### Source Terms

The source term issue is, unfortunately, painted by many as being far simpler than it is. One frequently hears talk of numerical reductions in the "source term", as though the "source term" were one entity. It is now quite clear that each accident sequence at each reactor will have its own unique source term that defines the quantity and chemical form of radioactive materials released to the environment as a result of a reactor accident.

The source term issue is described by many as having arisen from the TMI-2 accident. While TMI kindled a new interest in these issues, source term has been debated and researched for more than ten years. Industry spokesmen claim that the TMI accident "proved" that the release of radioactivity from a severe reactor accident had been drastically overestimated. No such fact was proven at TMI. What did emerge was a convincing demonstration under actual reactor accident conditions that iodine leaving the core under similar conditions is in the form of a salt, namely cesium iodide, and not iodine vapor. This confirmed previous analytical work which was not credited in the WASH-1400 report due to conflicting experimental evidence.

The implication of this finding is that if the release of radioactive materials from the reactor core during an accident passes through a "water-bounded" pathway, much of the radioactive iodine will be dissolved in water and not available for an airborne release to the environment if the containment fails. It is clear, however, that the TMI sequence is hardly characteristic of the spectrum of severe accident sequences which can occur in light water reactors.

The NRC's major research effort, principally conducted at Sandia, Oak Ridge, and Battelle Columbus Laboratories, has one main object: to model as realistically as possible the transport of radioactive materials from the primary system to the containment and subsequently to the environment if the containment fails. Unfortunately, this research program includes only about 20 accident sequences in five different reactors, and it is not clear that these five reactors are representative of the entire LWR population. Further, there are typically dozens of accident sequences that are "risk significant" at each reactor. The uncertainties involved in accident phenomenology and the timing and mode of containment failure are considerable, and these uncertainties will greatly affect the results of state-of-the-art source term calculations such as those being performed in the NRC/Battelle program.

It is premature to be discussing the magnitude of possible source term reductions and their implications for emergency planning and other regulatory concerns. Rather, the Commission should evaluate its present source term research program, and reorient and expand it to permit useful comparisons of accident consequence calculations, employing the Reactor Safety Study source terms and the results from newer, state-of-the-art calculations of release-from-containment source terms. We do not mean to imply here that reliable absolute risk comparisons could be drawn; however, useful comparisons could be made on a conditional basis (i.e., given the release, what are the results). Only then will it be possible to determine the degree to which reactor accident risks have been overestimated, if at all, and the steps that need to be taken in the light of the new information.

#### Safety Goals

The Commission is mid-way through a two-year "evaluation period" in its consideration of quantitative Safety Goals for commercial nuclear power plants. As the Commission should by now be aware, setting the Goals is much easier than convincingly demonstrating that any particular plant meets them.

This is true because the quantitative Safety Goals and the art of probabilistic risk assessment (PRA) are inextricably intertwined. Unless and

until PRA results become significantly more reliable than they are now, quantitative Safety Goals are a diversion from more profitable (in terms of safety) pursuits.

We do not mean to say that the PRAs done to date have been worthless. To the contrary, some significant insights into reactor risk have arisen from the NRC's PRA programs. These insights fall into two categories: (1) identification of generically applicable risk contributors, such as the interfacing LOCA for PWRs; and (2) plant-specific design and procedural flaws, such as the upper compartment drain plug situation at Sequoyah and the unreliable emergency feedwater system at Calvert Cliffs.

We believe, however, that such insights could have been derived from a program which concentrated more on the evaluation of plant design using fault tree and event tree methods and other more traditional engineering analyses, as opposed to the quantitative analysis performed in a PRA. In so doing, much of the controversy about assumptions, data base, and similar issues would be reduced and the costs of the undertaking would be somewhat lower, allowing more reactors to be analyzed.

Without reliable PRA results, quantitative Safety Goals have no meaning because it is impossible to assess compliance. Worse, the results can be manipulated by a judicious choice of assumptions, data base, and models to assure the compliance of any plant with the Safety Goals. The Commission should not delude itself that the latter cannot be done; the nuclear community knows enough about PRA to make this sort of manipulation quite feasible.

We therefore urge the Commission to embark on an alternative program whereby qualitative evaluation methods are used to analyze many more reactors; indeed, all reactors could benefit from such an analysis. In addition, qualitative Safety Goals could be developed; for example, such a Safety Goal could define goals for containment performance.

We believe that a comprehensive qualitative program will be far more useful to the Commission and contribute more significantly to the protection of the public health and safety than the present, PRA-based, quantitative Safety Goals program. Even the NRC-sponsored Interim Reliability Evaluation Program (IREP) PRAs appeared to recognize the worth of qualitative analysis. These reports state: "The principal product obtained is the integrated engineering logic presented in the plant and system models and the insights into plant features contributing significantly to risk -- not the specific values computed for accident frequencies."

The NRC Staff, in a more candid early version of the Safety Goal evaluation plan memorandum, admitted that without PRA, "... the establishment of numerical guidance would be an empty exercise." We agree, and urge the Commission to consider the alternative we have suggested.

We also note that the Commission is sponsoring a study at Oak Ridge National Laboratory of severe core damage precursors. This program has been quite useful in putting actual operating experience into perspective by assessing the approximate extent to which historical events have contributed to the chance of a severe core damage accident. However, this program has not examined the historical experience on containment failure. We believe that

this would be a useful extension of the precursor program, especially in view of the claims being made in some quarters regarding the capabilities of various containment designs to mitigate severe accident risks. Such an extension should examine the degree to which quality assurance problems and variations in materials quality could impact containment reliability.

PUBLIC PARTICIPATION: Illusion and Reality

To those of us who have represented intervenors in NRC proceedings -- and I have represented a broad range, including a state government, local and regional citizen groups, and national groups, most often UCS -- this agency presents a puzzling paradox. While its overriding obligation under the law is to protect the public health and safety, the public is made to feel an unwelcome interloper in NRC proceedings, caught between a Licensing Board that has forcefully been told to "expedite" licensing cases, a utility which is perhaps understandably eager to get rid of intervenors, and a Staff which often simply seconds the utility's motion.

I think you would be astonished if you polled lawyers who have represented states and intervenors. ~~I have heard the opinion expressed many times, often by experienced attorneys involved in their first NRC case, that they have never seen a system so weighted against the presentation of intervenors' points of view. And this, of course, is under the current rules. New proposals to "reform" the licensing process would close the system even more.~~

Let me be more specific. I will begin by citing one of the principal findings of NRC's own Special Inquiry Group:

Insofar as the licensing process is supposed to provide a publicly accessible forum for the resolution of all safety issues relevant to the construction and operation of a nuclear plant, it is a sham.

(Report to the Commissioners and the Public ["Rogovin Report"], p. 139)

As you know, the licensing process actually begins when an applicant for a construction permit submits the first version of its Preliminary Safety Analysis Report (PSAR) and environmental information to the Staff for an initial "completeness" review. The completeness review does not deal with issues of substance. The substantive Staff review, and the documents that embody it, the Safety Evaluation Report (SER) and Draft Environmental Statement (DES), are months from publication. Even the Applicant's basic licensing documents are in preliminary form; it is typical for a dozen or sometimes many more amendments, containing the detailed information required to show compliance with NRC rules, to be issued in the months before and during the actual hearings.

However, the licensing "clock" starts when the public notice is given, even though NRC's formal review is in progress and the case is not nearly ready for hearing. This has two extremely unfortunate effects. First, intervenors' attempts to gather the information necessary to file contentions and go to hearing are treated as "delay." Ironically, intervenors must formulate their contentions before the Staff's own review is completed.

In addition, the Licensing Boards, which are under orders from the Commission to move proceedings quickly, often view intervenors as impediments to achieving that goal. This dynamic has the counterproductive effect of creating an incentive for applicants and Staff to withhold detailed safety information until relatively late in the process, after contentions have been formulated and discovery completed. At that point, an intervenor must move to amend its contentions, reopen discovery or modify the hearing schedule. Such motions not only require intervenors to meet a special burden; they place the intervenor in the position of causing "delay", a position that is extremely unsympathetic to the Licensing Boards. Even though the delay is not the intervenor's fault, such niceties become lost in the current climate of "expediting" licensing.

By the time the Staff completes its SER review, it has as a practical matter informally "resolved" any differences it may have had with the applicant. From that point on, the NRC Staff acts as the applicant's advocate. Its advocacy of the applicant's position places it from the very beginning in an adversary position towards any intervenor. This fact explains what intervenors have learned by hard experience but which is always a shock initially: No matter how technically credible an intervenor may be nor what legitimate issues it raises, the Staff makes virtually no attempt to meet with intervenors, to seriously consider whether their technical concerns have validity and what if any corrective action should be taken. Instead, the Staff's immediate knee-jerk response is to find some justification for opposing the intervenor's positions on all substantive and procedural issues, a stance which continues during the entire licensing process.

Throughout the process, it is the goal of the applicant, and generally also the NRC Staff, to keep potentially troublesome information off the record. While one can understand such an impulse on the part of the applicant's attorneys, it is not a proper position for the NRC, whose obligation by law is to the public. Rules are interpreted in the narrowest possible way to exclude relevant evidence and disregard serious safety issues.

I recently came across a staggering example of this syndrome, which illustrates in a nutshell why NRC has so little credibility among the people who participate in its proceedings. Following a Commission decision, the San Onofre Licensing Board ruled that intervenors may not present evidence showing that hospitals around the plant are inadequate to treat injured persons in an accident. It was held that NRC's rules only require the applicant to list existing facilities. Therefore, "[b]oards are not to go behind the list of existing facilities to determine whether those facilities are adequate or inadequate...."

After a construction permit is granted, on the basis of preliminary design information, the level of Staff review drops dramatically. The on-site inspector, occasionally augmented by other NRC personnel, is capable of auditing only a tiny fraction of the construction programs, and that audit consists largely of reviewing paperwork. Yet, as we have seen in the past few years, too many utilities have tolerated pervasive quality assurance breakdowns during construction -- breakdowns which were never discovered by NRC but came to light only through the revelations of plant workers and intervenors. Zimmer, Midland and South Texas are chilling illustrations of this pattern.

The Boards consistently refuse to consider safety issues brought to their attention by the public during the construction period on the grounds that such issues should await the operating license review. The problem, of course, is that once the billions of dollars required to build the plant have been spent, unbiased consideration of many safety issues becomes impossible. As an example, intervenors in the Seabrook construction permit proceeding raised the issue that, during an accident, the thousands of people who use the beaches within a few miles of the plant could not be evacuated. This is an issue that goes directly to the suitability of the site. The Appeal Board in 1977 interpreted NRC's rules as establishing that an accident requiring evacuation could never occur; therefore, the feasibility or infeasibility of evacuation was irrelevant to licensing the plant.

\* Two years later, the TMI-2 accident happened. Shortly thereafter, you promulgated rules requiring emergency planning for the 10-mile zone around all plants, accompanied by the central finding that serious accidents can happen at even the safest plants. The Seabrook plant was at that time not yet a fait accompli; I believe that construction of Unit 1 was approximately 25% complete and Unit 2 was barely started. Intervenors quickly petitioned the NRC to immediately consider whether adequate emergency protection could be provided to the public surrounding the Seabrook site. The intervenors urged NRC to hold hearings on this issue before the plant was built, knowing full well that it would be too late afterwards. NRC refused to allow hearings, citing the lame fiction that the applicant was proceeding with construction "at its own peril" and this issue could be fully explored during the operating license proceeding.

The intervenors, including most of the towns surrounding Seabrook and the Commonwealth of Massachusetts, are now pursuing these issues in the operating license hearing. It is, however, far too late. They are faced with a Hobson's choice because, of course, construction is not really at the utility's risk, it is fundamentally at the public's risk. The choices are either to accept the direct risk to public safety or to accept the financial cost of abandoning the plant--a cost that would ultimately be paid in large part by the ratepayers.

In the recent past, the Commission has begun to actively interject itself into ongoing proceedings to narrow the issues being considered or to remove them altogether from the hearings and, therefore, from the purview of on the record public participation. This has happened several times in the TMI Restart case, in the Indian Point case, in Zimmer and in other cases. While we do not dispute the Commission's right to maintain control over the proceedings, it should be noted that in each of these cases, the Commissioners intervened to remove issues from the hearings. I am unaware of any instance where the Commission has intervened on its own motion in the other direction.

Two other recent developments add further reinforcement to the public's view that the Commission is hostile to its right to present arguments on the record which challenge those of the Staff and utilities. One is the Catawba decision. Duke Power Company, et al. (Catawba Nuclear Station, Units 1 and 2), CLI-83-19, July 1, 1983. The Commission took sua sponte review of an Appeal Board decision holding that it was unfair and contrary to the Atomic Energy Act for the Boards to require intervenors to meet the special standards

for late-filed contentions when they could not have filed the contentions earlier; specifically, because of the unavailability of the emergency plan, it was impossible for intervenors to know whether it was acceptable and, if not, in what specific ways. The Commission reversed the Appeal Board in a remarkable decision that frankly left many of us in disbelief.

Finally, I would like to bring your attention to a doctrine devised by NRC which epitomizes the mindset I have been discussing: the siege mentality that reflexively resists public participation. It is the Commission's position, that, when it amends a license to add some new requirement, the utility may claim a hearing to challenge the need for the requirement, but the public is absolutely precluded from challenging its sufficiency to cure the safety problem in question. This is true even when the public first brought the safety problem to NRC's attention. The utility and Staff will negotiate a resolution privately, and the public simply has no opportunity to present evidence on its sufficiency. I regret that this practice has recently been upheld by the D.C. Circuit Court of Appeals in Bellotti v. NRC. While the case is still on-going and I personally believe that it was wrongly decided, this regressive policy should be changed regardless of whether it is legal or not.

UCS' views on current proposals to "reform" the licensing process, and our suggestions for meaningful change, should be well known to you since they have been presented in several Congressional hearings as well as formal comments on NRC's administrative proposals. What I suspect that some of you do not fully appreciate is the effect of the atmosphere of mistrust in which these proposals are made and which has, unfortunately, shaped the debate on licensing changes. Intervenors' worst fears about the direction of licensing "reform" were confirmed by the first set of NRC proposals, most of which resurfaced in DOE's bill. They were a laundry list of the industry's complaints about public participation, which went solely in the direction of cutting off such participation, and which made not even a single move toward correcting the gross imbalances in the process or encouraging the presentation of alternative views. I commend you for establishing the Ad Hoc Committee to review these proposals, although I must note that not one active representative of intervenors was invited to serve. However, the well had been already poisoned, as members of the public perceived that the purpose of licensing "reform" was to exclude them rather than to address inequities and inefficiencies in the process.

The members of the public and representatives of state and local governments who participate in NRC rulemakings and adjudications are entitled to a fair and accessible forum. They do not receive that. What they too often get is a system which provides them with the technical formalities of due process -- the grudging minimum required under the law -- but makes it clear from the outset that they are seen as troublesome obstacles in the agency's path. You pay two prices for this. The first price is the NRC's loss of credibility. This applies not only to individuals who are opposed to all nuclear power, and as to whom you might therefore conclude that credibility is impossible to achieve, but also to Congress, state and local governments and other citizens' groups with pro-safety and pro-consumer agendas whom you cannot afford to have as automatic adversaries.

The other price you pay is the loss of diversity in views on technical and policy issues. Many people outside the nuclear industry/NRC complex have valuable information and opinions. I know from personal experience that such persons are frequently unwilling to participate in a process which they perceive as rigged. \*

I have not pulled any punches in this presentation and have at times used strong language because I believe it is necessary. However, regardless of how UCS or I personally feel about the wisdom of future nuclear development, the fact is that there are over 80 plants licensed now with more on the way. That reality dictates one mission we must share: to see that those plants are constructed and operated safely. Effective public participation and an agency which accords the public respect and fairness, both in words and practice, are necessary to achieve that goal. \*

*Union of*  
**CONCERNED  
SCIENTISTS**

January 21, 1983

The Honorable Richard Thornburgh  
Governor  
Commonwealth of Pennsylvania  
Harrisburg, Pennsylvania 17120

Dear Governor Thornburgh:

On June 22, 1979, you wrote to the NRC, expressing your "deeply felt responsibility for both the physical and psychological security of the citizens" of Pennsylvania and advising the NRC of your "strong opposition to any plans to reactivate [Three Mile Island] Unit 1 until a number of very serious issues have been resolved." Among these "very serious issues" was whether the "Babcock & Wilcox reactor design flaws which may have contributed to the accident in Unit 2 have been fully discovered and corrected in Unit 1."

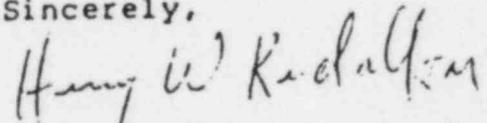
We regret to inform you that GPU and the NRC Staff propose operation of TMI-1 without meeting this most basic condition that you established. While a large number of "flaws" in the B&W design have been discovered, GPU proposes to restart the reactor without correcting many of the most important defects. To make matters worse, the NRC Staff plans to allow the plant to operate even when the equipment that has been installed or upgraded to correct known safety problems is out of service. Finally, GPU is urging the NRC Commissioners to allow TMI-1 to restart despite the lack of evidence that reliable means exist to cool the reactor. We have attached a memorandum which documents these issues in more detail for you.

UCS urges you to take two actions. First, we believe you should notify the NRC that the conditions you set for restart of TMI-1 have not been met. The facts presented in the attached memorandum clearly support this conclusion. A Governor's views are taken very seriously by the NRC. Had you not firmly stated your position as you did in your June 22, 1979 letter to the NRC, we believe that no hearings would have been held before restart of TMI-1. Your failure to comment on the restart at this time would be interpreted as your approval to resume operation before the remaining safety problems are corrected.

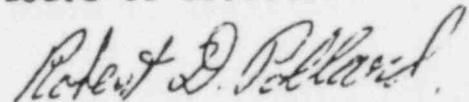
Second, we urge you to direct the Commonwealth's technical and legal offices to participate in the reopened hearing, now scheduled to start on March 1, 1983. The active involvement of the Commonwealth is essential to assure that the safety issues surrounding reactor core cooling will be properly explored and resolved. For three years UCS has provided the technical and legal expertise to counterbalance the combined efforts of GPU and the NRC to restart Unit 1 before its safety defects are fully corrected. NRC's Appeal Board candidly concluded that the evidence as it stands today does not support a finding that TMI-1 is adequately safe. The NRC has set an accelerated timetable for the reopened hearing. This hearing will address a number of important safety problems, and we expect GPU to use every available legal tactic to try to prevent a full airing of those issues. Nor do we expect the NRC Staff to take an objective view. The NRC Staff has consistently opposed the conclusions reached by the Appeal Board and is now in the position of defending its past actions. UCS simply does not have the resources to cope with the combined technical and legal forces of GPU and the NRC Staff under the accelerated ground rules established for this hearing. The Commonwealth's active participation in the hearing is, therefore, essential for a fair review of the reactor cooling issues.

We recognize your wide-ranging responsibilities, and UCS would not bring these matters to your attention if we could rely on any other means to ensure that the NRC performs the "careful and objective review" of the relevant safety issues that you urged it to conduct in your November 20, 1981 letter to Chairman Palladino. Unless the NRC sees that the Commonwealth intends to take an active, informed role in the reopened hearing, we believe there is little hope that the remaining safety problems at Unit 1 will be corrected. In that case, restart of Three Mile Island Unit 1 would once again jeopardize the physical and psychological security of the citizens of Pennsylvania.

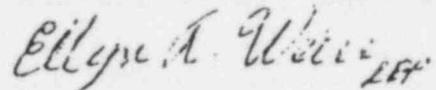
Sincerely,



Henry W. Kendall  
Chairman  
Board of Directors



Robert D. Pollard  
Nuclear Safety Engineer



Ellyn R. Weiss  
General Counsel

Enclosure

Union of  
**CONCERNED  
SCIENTISTS**

MEMORANDUM

To: Governor Richard Thornburgh  
From: Union of Concerned Scientists  
Date: January 21, 1983  
Re: Safety Problems at TMI-1

As the following facts establish, one of your basic conditions for restart of Three Mile Island Unit 1 -- that the design flaws which contributed to the TMI-2 accident should be "fully discovered and corrected" in TMI-1 -- has clearly not been fulfilled.

1. Important Design Flaws Remain Uncorrected

Today, almost four years after the accident, many important design flaws remain uncorrected at TMI-1. It should be emphasized that the design changes we refer to are those where there is no dispute that design changes are necessary. For example, no party to the restart hearings -- not GPU, the NRC Staff, the Commonwealth, or UCS -- challenged the necessity of such modifications as installing high point vents on the reactor coolant piping, upgrading the emergency feedwater system to meet the NRC requirements applicable to safety systems, and installing additional radiation shielding to protect equipment and personnel during and after a TMI-2 type accident. The only issue here is the timetable to complete the necessary modifications.

Deadlines for correcting the serious safety problems disclosed by the accident were first set for January 1, 1981. However, those deadlines have been extended over and over again. As it stands today, the necessary design changes will not be implemented at TMI-1 until the first refueling after restart. We have no confidence that even this schedule will be met. You may recall that when GPU anticipated restarting the plant in

late 1981 or early 1982, it had "committed" to complete the necessary modifications during the first refueling after restart -- in other words, about a year after restart. Now, more than a year later, GPU makes the same promise. This GPU commitment can not be relied upon.

Recently, GPU has begun to qualify its "commitments." On December 17, 1982, GPU Executive Vice President Philip Clark told the NRC that GPU would correct the most recently disclosed safety deficiencies in the emergency feedwater system during the first refueling after restart -- "if feasible." In the context of that discussion, GPU's basic position is that it will make the changes necessary to protect the public when it is convenient and does not interfere with its first priority, operating TMI-1.

The NRC Staff, for its part, has been more than willing to extend the deadlines in response to GPU's pressure, even going so far as to solicit requests for extensions. The NRC is also continuing its practice of classifying safety problems as generic in order to postpone decisions on difficult technical questions. Although the President's Commission on the Accident at Three Mile Island (the Kemeny Commission) soundly condemned this practice, the NRC continues it even for the new generic safety issues that stem from the TMI-2 accident.

For example, in its March 1981 report to the Congress, "Identification of New Unresolved Safety Issues Relating to Nuclear Power Plants," the NRC states:

There is an increasing realization that one of the most important factors in the safety of nuclear reactors is the reliability of the systems used for decay heat removal following the shut down of the reactor for any reason.

\* \* \*

The principal means for removing decay heat in a pressurized water reactor [like TMI-1] under normal conditions immediately following reactor shutdown is through the steam generators using the auxiliary feedwater system. [In TMI-1, this system is named "emergency feedwater system."] In addition to the WASH-1400 study mentioned above, later reliability studies and related experience from the accident at Three Mile Island Unit 2 (TMI-2) have reaffirmed that the loss of capability to remove heat through the steam generator is a significant contributor to the probability of a core-melt event. NUREG-0705, pp. A-1, A-2.

In March 1981, NRC's "preliminary estimate" for completing its studies of this unresolved safety issue was April 1984. In June 1982, the NRC Staff revised this to November 1984, with the schedule for implementing any new safety requirements in operating reactors still undetermined.

Thus, relying solely on NRC's own statements, it is clear that the TMI-2 accident "reaffirmed" the need for reliable reactor core cooling systems to prevent a meltdown. The NRC also acknowledges that the "need for an emergency feedwater system of high reliability is a clear lesson learned from the TMI-2 accident." (NUREG-0578, p. 10) Nevertheless, the NRC Staff would allow TMI-1 to restart without installing the modifications which all parties agree are necessary to correct the known safety deficiencies in TMI-1's emergency feedwater system, the "principal means for removing decay heat" in TMI-1.

In sum, GPU and the NRC Staff propose to operate TMI-1 without the modifications they both acknowledge are necessary to correct the safety deficiencies disclosed by the TMI-2 accident. We recommend that you update your 1979 statement calling for correction of TMI-1's design flaws by making clear your opposition to restart until at least those design modifications which all parties concede are necessary, plus those the Licensing Board finds necessary, have been fully implemented.

## 2. Essential New Equipment Need Not Be Operable

A great deal of existing equipment has been modified or new equipment has been installed to correct safety deficiencies disclosed by the accident. However, GPU and the NRC Staff propose to run TMI-1 even if that equipment is not operable. Thus, while some of the design flaws revealed in the accident will theoretically have been corrected, Unit 1 would be free to operate in much the same condition as it was before the accident.

GPU has requested amendments to its TMI-1 operating license, endorsed by the NRC Staff, that would allow the plant to operate without restriction if half of the new or upgraded safety equipment is nonfunctional. Moreover, under this proposed license amendment the plant could operate for a full week after failure of the remaining safety equipment because, GPU now asserts, the new or upgraded equipment is not essential for safety.

For example, two devices have been added to inform the operators that the PORV is open. The NRC Staff is ready to conclude that TMI-1 can operate safely even if one of those devices is always inoperable, and that it can operate safely for

a week after failure of the other warning device. The basis for this claim is that the operators can rely on the temperature indicator downstream of the PORV, even though the operators ignored this indicator when the PORV stuck open during the TMI-2 accident.

Similarly, two meters have been added to inform the operators that the reactor cooling system is approaching the boiling point. Under GPU's proposal, one of those meters would never have to be operable, and the other can be out of service for a week before the plant must shut down. The basis for this proposal is GPU's assertion that the operators have other means to determine whether an unsafe condition is developing in the reactor. Unfortunately, these means proved inadequate during the TMI-2 accident.

In effect, GPU and the NRC Staff now argue that this new equipment is not necessary for safety -- a position they did not take during the restart hearings. We feel confident that the Licensing Board would not have approved restart had it known that the equipment necessary to correct the safety deficiencies disclosed by the accident would not necessarily be operable while the plant is running. UCS certainly would have challenged that position had it been taken, and we expect the Commonwealth would have as well.

In sum, the restart of TMI-1 without the full complement of new and upgraded equipment that has been installed to correct the design flaws disclosed by the TMI-2 accident violates the spirit and probably the letter of the Licensing Board's decision and should not be permitted. In addition, the fact that GPU and the NRC Staff even made such a proposal is another indication that their first priority is operation of TMI-1 rather than protection of the public.

### 3. Adequacy Of Decay Heat Removal Remains Unresolved

Perhaps the most fundamental and dangerous flaw in TMI-1 revealed by the accident is the grave uncertainty of adequate decay heat removal. Remarkably, the NRC Appeal Board's most recent Order (issued December 29, 1982) confirms what UCS has argued for years: that the facts do not establish that viable and suitably reliable means of decay heat removal exist at TMI-1. As you are probably aware, the Appeal Board ordered the hearing reopened because of this issue. Nevertheless, on January 4, 1983, GPU asked the NRC Commissioners to allow TMI-1 to restart. A copy of that letter and our response are attached for your attention.

You will note that GPU's sole ground for this extraordinary plea is its claim that because similar safety problems may exist at other plants, it would not be "consistent" for TMI-1 to be treated differently. In other words, if one or more plants are operating with safety hazards as serious as those at TMI-1, TMI-1 should also be allowed to operate.

Quite frankly, UCS can imagine no greater perversion of the NRC's duty to protect the public than to let the allowable level of risk be dictated by the worst powerplant in the country. We also believe that it is especially irresponsible for GPU to argue, in effect, that the people of central Pennsylvania are not entitled to protection of their health and safety as long as the residents near other nuclear plants face the same dangers. In any case, your concerns as Governor of Pennsylvania must be, as they have been from the outset, with the safety of your constituents.

Although the details of the deficiencies in the decay heat removal systems at TMI-1 are technically complex, the issue can be summarized in one simple, accurate sentence: the evidence to date cannot support a conclusion that Unit 1 can withstand the type of accident that occurred in Unit 2. That is why the Appeal Board scheduled additional hearings to begin March 1. The Appeal Board directed GPU and/or the NRC Staff to provide additional testimony in eleven areas. In several of these areas, the Licensing Board had ordered additional testimony during the original restart hearings. Thus, this will be GPU's and the NRC Staff's third or fourth attempt to prove that the facts support their common position that TMI-1 is safe enough to restart.

In addition to the very serious safety issues that necessitated the new hearings, the NRC Commissioners were informed by their Staff on December 17, 1982, that the TMI-1 emergency feedwater system -- the principal system used to remove decay heat from the reactor after a shutdown -- is not capable of withstanding even a mild earthquake. Although GPU proposes to modify the system to withstand the largest historical earthquake for the plant location, it has only committed to take this action during the first refueling after restart "if feasible," as we discussed above.

Only GPU and the NRC Staff were allowed to participate in the Commission meeting at which the earthquake issue was discussed. (Therefore, UCS considers the meeting to have been an ex parte communication of the type prohibited by the Administrative Procedure Act and NRC's Rules.) However, all parties were permitted to comment on the matters discussed. We were disappointed that the Commonwealth did not choose to comment. UCS's comments included the following points:

The inability of the TMI-1 emergency feedwater (EFW) system to withstand even a mild earthquake -- an earthquake so mild that it can reasonably be expected to occur during the lifetime of TMI-1 -- poses a substantial safety hazard to the public.

The finding that the TMI-1 EFW system cannot survive an earthquake is directly relevant to the issues in the restart hearing and to the Commission's pending decision regarding restart.

The need for emergency feedwater systems to be designed to withstand a much larger earthquake (designated as the Safe Shutdown Earthquake), and to incorporate pumps with diverse motive power (e.g., steam turbine and electric motor drives), was recognized as early as 1972 by the Atomic Energy Commission.

GPU has been dilatory in providing all the information which, in February 1981, the NRC Staff requested be supplied within 120 days so that it could determine whether the license should be modified, suspended or revoked.

The NRC would violate its obligation to protect the health and safety of the public if it authorizes TMI-1 to restart before the TMI-1 emergency feedwater system is modified to meet NRC's rules applicable to safety systems.

### Conclusion

TMI Unit 1 should not be allowed to restart until:

- 1) All modifications which are necessary to correct the safety deficiencies disclosed by the accident have been made;
- 2) Its operating license requires that the full complement of safety equipment be operable prior to plant startup, and that the plant be shut down within a prescribed time after any such equipment becomes inoperable; and
- 3) The evidence before NRC's hearing board demonstrates that its decay heat removal systems are adequately reliable.

# SHAW, PITTMAN, POTTS & TROWBRIDGE

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RICHARD M. KRONTHAL  
STEPHEN B. HEIMANN  
\*NOT ADMITTED IN DC

WRITER'S DIRECT DIAL NUMBER

January 4, 1983

822-1026

Nunzio J. Palladino, Chairman  
Victor Gilinsky, Commissioner  
John F. Ahearne, Commissioner  
Thomas M. Roberts, Commissioner  
James K. Asselstine, Commissioner  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

In the Matter of  
METROPOLITAN EDISON COMPANY  
(Three Mile Island Nuclear Station, Unit No. 1)  
Docket No. 50-289 SP (Restart)

Dear Chairman Palladino and Commissioners:

In its Memorandum and Order of December 29, 1982 (ALAB-708), the Appeal Board ordered a limited reopening of the record in this proceeding to facilitate prompt resolution of matters related to decay heat removal under certain post-accident conditions. \*/ Licensee is concerned that the Appeal Board's actions could precipitate consideration whether to again defer a Commission determination on lifting the suspension on TMI-1 operation. The Commission should not further defer its determination on immediate effectiveness because of the Appeal Board's Memorandum and Order.

\*/ It should be noted that the Appeal Board's action does not represent its final decision on the subjects addressed in the

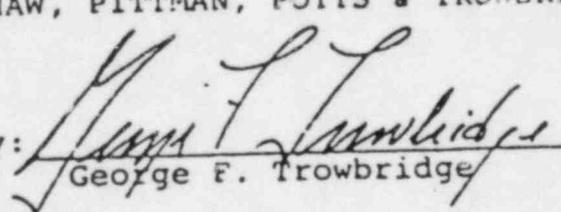
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Chairman Palladino and  
Commissioners  
January 4, 1983  
Page Two

In 1979, TMI-1 was shut down under an immediately effective Order to be continued until the conclusion of a public hearing, because of Commission concerns viewed as unique to this plant's operation. No other plant was treated in a similar manner. There can be no serious dispute that the questions presently being raised by the Appeal Board on decay heat removal are not unique to TMI-1 but in fact are equally applicable to a number of currently operating plants of similar design. It is essential for bringing this unprecedented proceeding to completion that issues common to other operating plants, as they arise, be resolved for TMI-1 consistent with their resolution for other operating plants. Continued operation of other similarly configured plants would be irreconcilable with deferral of a decision to lift the immediately effective suspension of TMI-1 on the basis of the generic questions raised by the Appeal Board in its Memorandum and Order.

Respectfully submitted,

SHAW, PITTMAN, POTTS & TROWBRIDGE

By: 

George F. Trowbridge

Counsel for Licensee

GFT/tjc

cc: Service List  
(\* indicates hand delivery)

(Continued)

Memorandum and Order. Rather, the Appeal Board by its reopening seeks supplemental information to clarify the record and to explore further the position taken by both the NRC Staff and Licensee that decay heat removal can be reliably accomplished either by natural circulation, including boiler-condenser natural circulation, using the emergency feedwater system or by feed and bleed. The Appeal Board has in fact stated that satisfactory demonstration as to either of these methods of decay heat removal would resolve its concerns.

Union of  
**CONCERNED  
SCIENTISTS**

January 11, 1983

Nunzio Palladino, Chairman  
John Ahearne, Commissioner  
James Asselstine, Commissioner  
Victor Gilinsky, Commissioner  
Thomas Roberts, Commissioner  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

RE: Three Mile Island Unit 1, Docket No. 50-289 (Restart)

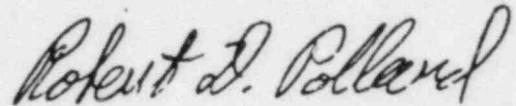
Gentlemen:

UCS is astonished by the letter sent by Counsel for GPU to the Commissioners on January 4, 1983. GPU urges the Commission to make the Licensing Board's decision immediately effective, thereby lifting the NRC's 1979 orders requiring TMI-1 to remain shutdown, despite the fact that the Licensing Board's decision has been invalidated in important respects by the Appeal Board. The sole grounds offered in support of this extraordinary plea is, in effect, that some other unidentified plants with safety deficiencies as serious as TMI-1 may be operating. This is, of course, an assertion which has yet to be proven. However, the record is clear, as the Appeal Board has found, that the evidence does not support a conclusion that TMI Unit 1 can withstand an accident of the type that occurred in Unit 2.

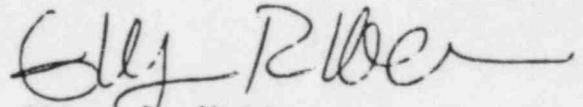
The inescapable conclusion of GPU's logic is that if one other plant could be found with equally serious safety problems, TMI-1 should be permitted to restart. It is unthinkable that NRC would seriously consider adopting a policy which would either explicitly or implicitly permit the tolerable level of risk to the public to be dictated by the

wors' plant or plants which may be operating. We can imagine no greater perversion of the NRC's unequivocal mandate to protect the health and safety of the public.

Very truly yours,



Robert D. Pollard  
Nuclear Safety Engineer  
Union of Concerned  
Scientists



Ellyn R. Weiss  
General Counsel for UCS

Harmon & Weiss  
1725 I Street, N.W.  
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Washington, D.C. 20006

cc: TMI-1 Service List