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NUCLEAR REGULATORY COMMISSION ISSUANCES

May 1984

This report includes the issuances received during the specified period from the Commission (CLI), the Atomic Safety and Licensing Appeal Boards (ALAB), the Atomic Safety and Licensing Boards (LBP), the Administrative Law Judge (ALJ), the Directors' Decisions (DD), and the Denials of Petitions for Rulemaking (DPRM).

The summaries and headnotes preceding the opinions reported herein are not to be deemed a part of those opinions or to have any independent legal significance.

U.S. NUCLEAR REGULATORY COMMISSION

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(301/492-8925)

COMMISSIONERS

Nunzio J. Palladino, Chairman
Victor Gilinsky
Thomas M. Roberts
James K. Asselstine
Frederick M. Bernthal

Alan S. Rosenthal, Chairman, Atomic Safety and Licensing Appeal Panel
B. Paul Cotter, Chairman, Atomic Safety and Licensing Board Panel

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Cite as 19 NRC 1151 (1984) **CLI-84-7**

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gilinsky
Thomas M. Roberts
James K. Asselstine
Frederick M. Bernthal

In the Matter of **Docket No. 50-289-SP (Restart)**

METROPOLITAN EDISON COMPANY,
et al.
(Three Mile Island Nuclear Station, Unit 1)

May 4, 1984

In this special proceeding pertaining to the restart of Three Mile Island, Unit 1, the Commission denies an intervenor's motion requesting that the Commission mandate completion prior to restart of certain previously ordered long-term actions that supplement a set of short-term actions required to provide assurance that the facility can be operated without endangering the health and safety of the public. The Commission, however, reviews *sua sponte* the licensee's schedule for completion of the long-term actions and finds it reasonable. It rules that the long-term actions need not be completed prior to start-up but notes that they must be completed as promptly as possible.

ORDER

On October 18, 1983 the Union of Concerned Scientists (UCS) moved the Commission to order that all long-term items required in

this proceeding be completed prior to restart because of the length of time which has elapsed since this proceeding began. Both the licensee and the NRC staff opposed the UCS motion.

In the order establishing the restart proceeding, the Commission stated that it had "determined that satisfactory completion of certain short-term actions and resolution of various concerns . . . are required to provide reasonable assurance that the facility can be operated without endangering the health and safety of the public." The Commission further "determined that certain additional long-term actions are . . . required to be completed as promptly as practicable, and that reasonable progress on the completion of such items prior to restart is required . . . ." CLI-79-8, 10 NRC 141, 142 (1979).

The Commission has stated that "reasonable progress" is to be determined "at the time of the Licensing Board's decision." CLI-82-32, 16 NRC 1243, 1244 (1982). The issue of whether licensee has made reasonable progress toward completion of long-term items was litigated in the restart proceeding in accord with the procedures established for that proceeding. No party appealed from the Licensing Board's findings regarding licensee's progress on long-term requirements, either to the Appeal Board or to the Commission. UCS by filing this motion with the Commission almost 5 months after the Appeal Board issued its decision on the hardware issues, ALAB-729, 17 NRC 814 (1983), is apparently attempting to reopen a closed issue solely on the basis of the passage of time.

The Commission disagrees with UCS' underlying assertion that the passage of time by itself controls whether reasonable progress is being made toward completion of long-term items. Such a determination must be based on all the circumstances surrounding each individual item, including the evolution of the requirement, any technical disagreements regarding the requirement, efforts to date, and the current implementation schedule both at TMI-1 and other similar reactors.[1] The UCS motion requesting the Commission to require completion of all long-term items before restart simply because of the lapse of time since this proceeding began is accordingly denied.

However, the Commission recognizes that over 2 years have passed since the Licensing Board issued its decision on the hardware issues, and the Commission did envision only a short lapse of time between the Licensing Board's decision and a decision on restart. The Commission has therefore *sua sponte* considered the circumstances surrounding the

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[1] The Commission has stated, unless the record dictates otherwise, that TMI-1 is to be grouped with reactors which have received their operating licenses. CLI-81-3, 13 NRC 291, 295 (1981).

implementation schedule for the seven long-term items which staff indicated in its response to the UCS motion were not scheduled for completion prior to restart in order to determine whether licensee should be required to complete any of those items prior to restart. No party is now arguing that any of these items are necessary for safe operation in the short term, and the Commission has determined from its review of each of these items that the current schedule for completion is reasonable in view of the technical issues involved and, as indicated in staff's response to the UCS motion, because completion of required items at TMI-1 at restart will be comparable to the schedule of completion at other B&W reactors. The Commission has therefore decided not to require completion of any of these items prior to restart at this time. The Commission notes, however, that this decision does not modify the original 1979 order which required that long-term items be completed "as promptly as practicable."

Commissioner Gilinsky dissents from this decision.

It is so ORDERED.

For the Commission*

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 4th day of May 1984.

*Commissioners Asselstine and Bernthal were not present when this order was affirmed but had previously indicated their approval.

Cite as 19 NRC 1154 (1984) CLI-84-8

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

COMMISSIONERS:

Nunzio J. Palladino, Chairman
Victor Gilinsky
Thomas M. Roberts
James K. Asselstine
Frederick M. Bernthal

In the Matter of **Docket No. 50-322-OL-4**
(Low Power)

LONG ISLAND LIGHTING COMPANY
(Shoreham Nuclear Power Station,
Unit 1)

May 16, 1984

The Commission determines that General Design Criterion 17, 10 C.F.R. Part 50, Appendix A, pertaining to the availability of onsite and offsite electric power systems for nuclear power plants, is applicable to low-power operation under 10 C.F.R. § 50.57(c), and vacates a Licensing Board's order to the extent it is contrary. The Commission provides guidance for the conduct of a hearing in the event of the applicant's submission of a modified application seeking an exemption under 10 C.F.R. § 50.12(a) from regulatory requirements for a low-power license including General Design Criterion 17.

OPERATING LICENSE PROCEEDINGS: ROLE OF COMMISSION

Absent special circumstances, the Commission is reluctant to assume the functions of an existing licensing board of compiling and analyzing a factual record and making an initial determination based on the record. *Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 3 and 5), CLI-77-11, 5 NRC 719, 722 (1977).

REGULATIONS: EXEMPTION

The use of exemption authority under 10 C.F.R. § 50.12 is extraordinary and is based upon a finding of exceptional circumstances, considering the equities of the situation.

ORDER

Pursuant to the Commission's unpublished Order of April 30, 1984, in the Shoreham proceeding, Docket No. 50-322-OL-4 (Low Power), oral argument was held before the Commission on May 7, 1984, on the applicability of the General Design Criteria (particularly GDC 17) to the proposal of the Long Island Lighting Company (applicant) to operate the Shoreham facility at low power. Oral argument was preceded by written filings and followed by supplemental filings.

After reviewing the oral arguments and written submissions of the parties, the Commission has determined that 10 C.F.R. § 50.57(c) should not be read to make General Design Criterion 17 inapplicable to low-power operation. Accordingly, the Licensing Board's Memorandum and Order of April 6, 1984 (unpublished) is vacated to the extent that it is inconsistent with this Order.

However, the applicant made clear at the May 7 oral argument its intent to seek an exemption under 10 C.F.R. § 50.12(a). If it intends to follow that course, the applicant should modify its application for low-power operation to address the determinations to be made under 10 C.F.R. § 50.12(a).[1] The modified application should be submitted to the Atomic Safety and Licensing Board.[2]

In addressing the determinations to be made under 10 C.F.R. § 50.12(a), the applicant should include a discussion of the following:

1. The "exigent circumstances" that favor the granting of an exemption under 10 C.F.R. § 50.12(a) should it be able to dem-

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[1] Section 50.12(a) specific exemptions:

(a) The Commission may, upon application by any interested person or upon its own initiative, grant such exemptions from the requirements of the regulations in this part as it determines are authorized by law and will not endanger life or property or the common defense and security and are otherwise in the public interest.

[2] As the Commission has previously noted, absent special circumstances not readily apparent here, it would be extremely reluctant to assume the functions of an existing Licensing Board of compiling a factual record, analyzing it and making the initial determination based on the record. *Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 3 and 5), CLI-77-11, 5 NRC 719, 722 (1977).

onstrate that, in spite of its noncompliance with GDC 17, the health and safety of the public would be protected.[3]

2. Its basis for concluding that, at the power levels for which it seeks authorization to operate, operation would be as safe under the conditions proposed by it, as operation would have been with a fully qualified onsite A/C power source.

The Licensing Board shall conduct the proceeding on the modified application in accordance with the Commission's rules. The Licensing Board shall make findings and issue an initial decision. Any initial decision authorizing the grant of an exemption shall not become effective until the Commission has conducted an immediate effectiveness review.

The following schedule is provided to the Licensing Board as guidance in resuming the hearing:

Day 1 - Filing and same-day service to all parties of applicant's request for exemption pursuant to 10 C.F.R. § 50.12(a)
Day 2 - Discovery commences
Day 32 - Discovery ends
Day 45 - Testimony filed
Day 55 - Hearing begins

Separate views of Chairman Palladino and Commissioner Gilinsky and the additional views of Commissioners Asselstine and Roberts are attached.

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[3] The Commission regards the use of the exemption authority under 10 C.F.R. § 50.12 as extraordinary. This method of relief has previously been made available by the Commission only in the presence of exceptional circumstances. *See United States Department of Energy* (Clinch River Breeder Reactor Plant), CLI-83-1, 17 NRC 1, 4-6 (1983) and cases cited therein. A finding of exceptional circumstances is a discretionary administrative finding which governs the availability of an exemption. A reasoned exercise of such discretion should take into account the equities of each situation. These equities include the stage of the facility's life, any financial or economic hardships, any internal inconsistencies in the regulation, the applicant's good-faith effort to comply with the regulation from which an exemption is sought, the public interest in adherence to the Commission's regulations, and the safety significance of the issues involved.

Of course, these equities do not apply to the requisite findings on public health and safety and common defense and security.

It is so ORDERED.

For the Commission[4]

SAMUEL J. CHILK
Secretary of the Commission

Dated at Washington, D.C.,
this 16th day of May 1984.

SEPARATE VIEWS OF CHAIRMAN PALLADINO

Both Commissioner Asselstine and Commissioner Gilinsky speak of procedural irregularities associated with certain actions by the Chairman of the Commission which are related to this case.

What I believe Commissioners Asselstine and Gilinsky are complaining about is that I, as Chairman, undertook to ask why the licensing process for this and other plants has to take so long. Unquestionably, I tried to bring some measure of efficiency and expedition to this protracted licensing proceeding, as I have attempted to bring greater efficiency and expedition to the agency as a whole. I would be failing in my duty to the public if I did not, in my capacity as Chairman of the agency, do just that.

By claiming that such action constitutes irregularities, they dispute the Chairman's authority and responsibility to monitor the status of particular cases, collect the facts surrounding the status, and bring them to the attention of the Commission.

I cannot respond to the charges of impropriety in the separate views of Commissioner Asselstine because they are unspecified. However, I can say that I have not prejudged the merits of this case nor have I committed any irregularities or improprieties of which I am aware. On the contrary, I believe that my efforts reflect my determination to discharge my duties to the public, the Congress, and the Commission with competence and integrity.

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[4] Commissioner Roberts was not present for the affirmation of this Order. Had he been present, he would have approved.

Commissioner Asselstine's statement could be read to imply that these alleged procedural irregularities on my part were part of the basis of the temporary restraining order (TRO) entered by the U.S. District Court on April 25. Any such implication would be a distortion. Judge Johnson's memorandum opinion, while it discussed the variety of arguments raised by the plaintiffs, was expressly grounded on her view that the schedule adopted by the Board was too restrictive to meet the requirements of due process.

I disagree with Commissioner Gilinsky's statement that the NRC Staff played a partisan role inconsistent with the Staff's health and safety responsibilities. The Staff has not abdicated its health and safety responsibilities in this case, but rather it tried to sharpen the issues raised by the lack of clarity in the relationship among some of our regulations.

Commissioner Gilinsky also states that NRC Staff formally embraced its ideas after senior Staff members and the Chairman of the Atomic Safety and Licensing Board panel met privately with the Chairman of the Commission. This statement is inaccurate and highly misleading. I believe the Staff made it clear in the May 7 oral presentations that its ideas were raised in its February 14, 1984 brief (Transcript of Oral Argument on Shoreham, 100-101, 125-126 (May 7, 1984)); furthermore, the Shoreham Licensing Board referred to them in its February 22 ruling on the record. The notion that I have directed the Staff's ideas on this or any other issue in this case is out of touch with the facts.

Furthermore, it is inaccurate to imply that the Commission was not kept fully and currently informed about the March 16, 1984 meeting. The Commission received the EDO's March 9, 1984 memo when I did. A memo on the March 16 meeting was circulated within two working days on March 20, and followup documents on scheduling were distributed on April 4, 1984. Prior to receiving Commissioner Gilinsky's views on May 14, 1984, I had heard no Commissioner complain that he had not been kept informed on this matter.

I believe Commissioner Gilinsky's opposition to the Chairman's role under the Reorganization Plan of 1980 is well known. However, I disagree with his position. The checks and balances embodied in the Plan have worked in this case because the Commission has had the opportunity to approve or disapprove all of the actions taken.

Finally, Commissioner Asselstine says that procedural questions have created an appearance of impropriety on the part of the Licensing Board which calls for replacement of the Board. Yet, when the Commission issued its April 30 order and did not designate the matter of the Board as an issue for review, Commissioner Asselstine raised no objection.

SEPARATE VIEWS OF COMMISSIONER GILINSKY
5/16/84

I support the Commission's Order as far as it goes. However, I also agree emphatically with Commissioner Asselstine that the case should be heard by a new hearing Board for the reasons he cites.

I have an additional comment about the partisan role in this proceeding of the NRC Staff — a role inconsistent with the Staff's health and safety responsibilities.

Instead of defending the Commission's safety regulations, as it should have been doing, the Staff has been trying to run legal interference for the Company. In its legal submissions to the Board, the Staff pointed out what it thought was a hole in the regulations through which Shoreham could slip without even asking for an exemption. Is it any wonder that the Company then put its head down and made a run for it? The Staff also proposed a safety standard for decision, which a special Board adopted, but which was so weak that even the Company would not defend it.

What is more disturbing is that the special Board came into being, and the Staff formally embraced these ideas, after the Chairman of the Atomic Safety and Licensing Board Panel and senior Staff members met privately with the NRC Chairman. At this meeting, he apparently impressed on them the need to accelerate the Shoreham decision and to explore ways to authorize low-power operation. There are several things wrong with this: The Company had not yet applied for low-power authorization. The Chairman did not inform the Commission about this meeting until several days later, and did not provide the Commission with important information about it until two weeks later. One is left wondering whether this meeting could have stood the light of day.

The Staff is a party in the hearing; the Chairman is one of the ultimate judges. The Staff Directors should have told the Chairman politely that it is not their job to carry the ball for the Company. It is understandable that they did not say this under the circumstances. The Chairman is, by law, the Staff's direct supervisor. He controls annual bonuses worth many thousands of dollars to senior Staff members. What we have is a situation in which one member of the ultimate NRC adjudicatory tribunal appears to be directing the actions of a key party in the case.

Although the potential for this state of affairs has been inherent in the NRC hearing process since the Reorganization Plan of 1980 put the Chairman directly in charge of the Staff, I cannot believe that is how Congress intended our hearings to function. The progress of this case

further underlines the necessity of removing the NRC Staff from its partisan role in the hearing process.

ADDITIONAL VIEWS OF COMMISSIONER ASSELSTINE

I support the Commission's Order as far as it goes. I strongly agree with the Commission's decision, as set forth in this order, that 10 C.F.R. § 50.57(c) cannot be used as a basis to permit the issuance of a license authorizing low-power operation of the Shoreham plant without a qualified onsite electric power system, as is required by General Design Criterion 17. However, I believe the Commission's Order is deficient because it fails to address a series of procedural questions associated with the conduct of this proceeding. These questions involve procedural irregularities associated with certain actions by the Chairman of the Commission which are related to this case, and the conduct of the Licensing Board Chairman, including his decision to institute disciplinary action against an attorney for one of the parties to the proceeding. Taken together, these procedural questions create the appearance of impropriety in the conduct of this proceeding, and call for prompt and effective corrective action by the Commission.

The Commission should have directed the establishment of a new Licensing Board to consider any modified motion submitted by the applicant under 10 C.F.R. § 50.12. The establishment of a new Licensing Board would have done much to restore the appearance of objectivity and fairness to this proceeding. Moreover, it would have eliminated many of the procedural deficiencies that could call into question the validity of any subsequent decision of the Licensing Board and the Commission on the issuance of an exemption under 10 C.F.R. § 50.12. By now, it should be clear to everyone involved with this proceeding that procedural shortcuts and irregularities serve no one's interests. The perception of procedural unfairness in this proceeding has already led one United States District Court judge to take the unprecedented step of issuing a temporary restraining order halting the Licensing Board's hearing on the applicant's previous low-power motion. And it is certain that any future Commission decision in this case will be closely scrutinized. The establishment of a new Licensing Board would do much to reduce remaining uncertainties regarding the procedural adequacy of this proceeding.

But there is a more fundamental principle involved in this proceeding that transcends the outcome in this particular case. That principle is the

Commission's commitment to fairness and objectivity in its licensing proceedings. For a second time now in this proceeding, a majority of the Commission has refused to take actions that would have demonstrated to the participants in all of the Commission's licensing proceedings, and to the public at large, that the Commission is committed to assuring that its licensing proceedings are conducted in a fair and impartial manner. The consequences of the majority's inaction are enormous and far-reaching. By its inaction, the majority undermines the credibility of our licensing hearings and the integrity of our entire regulatory program.

I also agree with Commissioner Gilinsky's comments regarding the role of the NRC Staff in this proceeding.

ADDITIONAL VIEWS OF COMMISSIONER ROBERTS

Two of my colleagues have expressed the view that the Licensing Board recently established to conduct the low-power hearing should be replaced. I disagree.

No proper motion for disqualification has been filed as required by 10 C.F.R. § 2.704(c) of our regulations, and in my view the provisions of the Administrative Procedure Act applicable to the relationship between our Administrative Judges and ourselves should be read to preclude *sua sponte* action by us to replace the Board in the circumstances presently obtaining in this case.

Finally, there are policy reasons for not taking the action urged by the minority. Any errors that the Board may have made are subject to review and, if necessary, correction in the appellate process. More important, however, if the Commission were to make it a practice to take *sua sponte* action to remove judges because of its disagreement with their judicial conduct, it could become very difficult for judges to carry out their judicial duties and for the agency to recruit competent judges.

Atomic Safety and Licensing Appeal Boards Issuances

ATOMIC SAFETY AND LICENSING APPEAL PANEL

Alan S. Rosenthal, Chairman
Dr. John H. Buck
Dr. W. Reed Johnson
Thomas S. Moore
Christine N. Kohl
Gary J. Edles
Dr. Reginald L. Gotchy
Howard A. Wilber

Cite as 19 NRC 1163 (1984) ALAB-770

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Alan S. Rosenthal, Chairman
Dr. Reginald L. Gotchy
Howard A. Wilber

In the Matter of **Docket Nos. STN 50-454**
STN 50-455

COMMONWEALTH EDISON COMPANY
(Byron Nuclear Power Station,
Units 1 and 2)

May 7, 1984

Retaining jurisdiction over the proceeding and the applicant's appeal from the Licensing Board's initial decision, LBP-84-2, 19 NRC 36 (1984), denying an operating license for Byron, the Appeal Board remands the record in this operating license proceeding to the Licensing Board for further evidentiary hearing on the issue of quality assurance and the rendering of a supplemental initial decision which is to include: (1) its findings based upon the additional evidence adduced; and (2) any necessary changes in the ultimate findings and conclusions reached earlier by the Board as a result of that additional evidence.

APPEAL BOARD: JURISDICTION (REMAND OF RECORD)

An appeal board acting upon an appeal from a licensing board decision may remand the record to the board for further hearing while retaining jurisdiction over the proceeding. In such circumstances, there is no necessity for a party to file a new notice of appeal after completion of further proceedings by the licensing board. *See generally Ford Motor Co. v.*

NLRB, 305 U.S. 364, 373 (1939); Local Rule 13(d) of the Court of Appeals for the District of Columbia Circuit; *Quincy Cable TV, Inc. v. Federal Communications Commission*, 730 F.2d 1549 (D.C. Cir. 1984).

OPERATING LICENSE HEARING: RESPONSIBILITY OF LICENSING BOARD

So long as legitimate uncertainty remains respecting whether a nuclear facility has been properly built, a licensing board is obliged to withhold authorization for an operating license.

OPERATING LICENSE HEARING: HEALTH AND SAFETY ISSUES (QUALITY ASSURANCE PROGRAM)

Under Commission regulations, owners of a nuclear power facility are responsible for establishing and carrying out an effective quality assurance program. *See* Criterion I of Appendix B to 10 C.F.R. Part 50.

LICENSING BOARD: RESOLUTION OF ISSUES

The Commission has long held that as a general proposition issues should be dealt with in the hearings and not left for later (possibly more informal) resolution. The post-hearing approach should be employed sparingly and only in clear cases — for example, where minor procedural deficiencies exist. *Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1103 (1983), *citing Consolidated Edison Co. of New York* (Indian Point Station, Unit No. 2), CLI-74-23, 7 AEC 947, 951 & n.8, 952 (1974). *See also Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-461, 7 NRC 313, 318 (1978).

TECHNICAL ISSUE DISCUSSED

Quality Assurance.

APPEARANCES

Michael I. Miller, Chicago, Illinois, for the applicant, Commonwealth Edison Company.

Jane M. Whicher, Chicago, Illinois (with whom **Douglass W. Cassel, Jr.,** Chicago, Illinois, was on the brief), for the intervenors, Rockford League of Women Voters and Dekalb Area Alliance for Responsible Energy/Sinnissippi Alliance for the Environment.

Richard J. Rawson (with whom **Mitzi A. Young** was on the brief) for the Nuclear Regulatory Commission staff.

MEMORANDUM AND ORDER

I. INTRODUCTION AND SUMMARY

A. Before us is the appeal of the Commonwealth Edison Company (applicant) from the Licensing Board's January 13, 1984 initial decision in this proceeding involving its two-unit Byron Nuclear Power Station in Illinois.[1] In that decision, the Board denied the operating license application for Byron. The basis of the denial was the Board's conclusion that the applicant had not demonstrated — in the words of Contention 1A of the intervenor Rockford, Illinois, League of Women Voters — its

> ,bility or willingness to comply with 10 C.F.R. Part 50, Appendix B, to maintain a quality assurance and quality control program, and to observe on a continuing and adequate basis the applicable quality control and quality assurance criteria and plans . . . ."[2]

This conclusion rested in turn upon detailed subsidiary findings respecting the inadequacy of both the quality assurance endeavors of numerous contractors engaged in the construction of the Byron facility and the control of those endeavors exercised by the applicant itself.[3]

Despite its adoption of the substance of Contention 1A, the Board went on to disclaim agreement with what it took to be the "implications" of the contention: *viz.*, that the applicant "is institutionally incapable or unwilling to maintain an adequate quality assurance program."[4] By way of elaboration, the Board went on to state:

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[1] LBP-84-2, 19 NRC 36.
[2] *Id.* at 213.
[3] *Id.* at 112-212.
[4] *Id.* at 218.

> Although the underlying reasons for Applicant's failures with respect to the contractors' quality assurance programs were not litigated during the hearing, we believe that the record as a whole indicates that the very large quality assurance task at Byron simply got ahead of Applicant's quality assurance organizations. It may be a matter of timing. As the evidence unfolded at the hearing, Applicant was catching up.[5]

Additionally, the Board took pains at the end of its opinion to explain the "rationale, scope and significance" of its decision, including the reasons why, despite the denial of the operating license application on quality assurance grounds, it had considered and decided (essentially in the applicant's favor) all of the other issues placed in controversy by the intervenors' contentions.[6] As the Board saw the matter, its findings and conclusions on the quality assurance issue left it with two choices. It could deny the application outright and thus relinquish jurisdiction over the proceeding. Or, instead, it could follow the course of "informing the parties now of the substance of [its] views on the quality assurance issues, retaining jurisdiction over them, and providing for further proceedings before [it] when the various inspections, investigations and remedial actions become ripe for consideration."[7] Given the fact that it lacked the authority "to foreclose further proceedings on the application" and that "an operating license for Byron may subsequently be granted,"[8] the Board considered adoption of the second alternative. It determined, however, that

> the remedy most responsive to the circumstances of this case, and the remedy least harsh to the Applicant yet still appropriate, is to decide the issue now. This, we say, is the least harsh appropriate remedy, as compared to the traditional practice of reserving jurisdiction, because it permits the parties to test immediately on appeal the quality of our decision. To reserve jurisdiction and to postpone final decision, in face of the impending completion of construction at Byron, would impose unilaterally upon the parties, particularly the Applicant, our own view of the facts, law and appropriate remedy. Unless Applicant could mount a difficult interlocutory appeal

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[5] *Ibid.* The Board also reiterated its

> earlier conclusion that the various quality assurance organizations within Applicant's corporate structure were suitably designed to carry out their functions; that they possess sufficient independence from costs and scheduling considerations, and that Applicant prevailed on that aspect of the quality assurance contention charging insufficient independence of the quality assurance function.

Ibid.

[6] In addition to the Rockford League of Women Voters, the Dekalb Area Alliance for Responsible Energy (DAARE) and the Sinnissippi Alliance for the Environment (SAFE) jointly intervened in the proceeding. All three organizations are represented by the same counsel on appeal and will be collectively referred to as the "intervenors."

[7] *Id.* at 279.

[8] *Id.* at 278. It was for this reason that the Board addressed the non-quality assurance issues.

> from such a determination (to postpone our decision), it would have been denied due process.[9]

On that score, it added:

> In describing the reach of our order, we have avoided describing it as *res judicata* or collateral estoppel with respect to the quality assurance issues because neither concept, as ordinarily understood, captures our intent. Neither concept neatly fits the unusual situation to be found in the continuum of a licensing proceeding with many aspects. We do not foreclose future proceedings on the quality assurance issue and have no jurisdiction to do so. Recognizing that each party has proposed a final decision to the Board, albeit in differing directions, we have simply decided the issue on the record before us.[10]

It is against this background that the applicant's appeal comes to us. We are told by the applicant that the Licensing Board's result rested on a flawed legal and factual analysis and that the preponderance of the evidence before that Board is to the effect that the applicant fulfilled its quality assurance obligations. Thus, according to the applicant, the initial decision should be reversed insofar as it denied the operating license application and the NRC Director of Nuclear Reactor Regulation should be authorized to issue the license. If, however, we should find the existing record insufficient to justify that result, the applicant would have us vacate the denial of the application and order a reopening of the record to receive further evidence. In this connection, the applicant asks that we conduct the reopened hearing ourselves or, if disinclined to do so, direct that a new licensing board be created for that purpose.

The intervenors insist that the Licensing Board applied the correct legal standard and, on the record at hand, was compelled to find that the applicant had failed to demonstrate the existence of reasonable assurance that, as built, the Byron plant can be operated safely. Accordingly, the intervenors would have us affirm the initial decision. In any event, intervenors' argument proceeds, no operating license could issue at this juncture because of errors on the part of the Licensing Board in both (1) denying intervenors' attempt to raise issues respecting applicant's financial qualifications, the need for the power to be generated at Byron and the availability of alternative energy sources; and (2) determining intervenors' seismology contention in the applicant's favor. Insofar as applicant's alternative motion to reopen the record is concerned, the interve-

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[9] *Id.* at 279.
[10] *Id.* at 279-80.

nors unconditionally oppose all but the portion of it relating to the applicant's recently completed reinspection program (discussed *infra*).

The NRC staff's appellate position is between that of the applicant and the intervenors. On the one hand, the staff joins in the claim of the applicant that the Licensing Board erred in denying the application. On the other hand, it disagrees with the applicant that the record is now sufficient to permit the authorization of operating license issuance. Rather, in the staff's view, there is a plain need to take further evidence focused on the applicant's reinspection program.

B. On full consideration of the Licensing Board's decision, the evidentiary record and the assertions of the respective parties, we have concluded that the public interest will best be served by the remand of that record to the existing Licensing Board for the receipt of further evidence on the quality assurance issue.[11] And, taking a cue from the Court of Appeals for the District of Columbia Circuit, we shall retain jurisdiction over the proceeding.[12] This means that, once the Licensing Board has completed the hearing on remand and rendered its supplemental decision,[13] there will be no necessity for any party to file a new notice of appeal.[14] Rather, upon receipt of the supplemental decision, we will establish the procedures governing the submission of the parties' views on that decision.

In subsequent portions of this opinion, we explain (1) why the existing record calls for neither a reversal nor an affirmance of the result below; (2) what at minimum needs further evidentiary exploration; and (3) why it is appropriate for the existing Licensing Board to take the additional evidence. At the threshold, a few general observations are in order.

As the Licensing Board at least implicitly acknowledged in its initial decision, and the intervenors explicitly conceded at oral argument,[15] the record is devoid of anything establishing the actual existence of uncorrected construction deficiencies of potential safety significance. Rather, as both the Board and the intervenors see it, operating license denial is justified because the ascertained quality assurance shortcomings precluded a finding of reasonable assurance that any and all serious construction infirmities have been detected and rectified.

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[11] *See generally Ford Motor Co. v. NLRB*, 305 U.S. 364, 373 (1939).

[12] *See* Local Rule 13(d) of that court and *Quincy Cable TV, Inc. v. Federal Communications Commission*, 730 F.2d 1549 (D.C. Cir. 1984).

[13] As will be seen, for the time being we are leaving the findings in the initial decision undisturbed. It may be, of course, that the Licensing Board will see fit to alter some of those findings in light of the further record development.

[14] *See* Local Rule 13(d) of the District of Columbia Circuit.

[15] App. Tr. 44.

Obviously, so long as legitimate uncertainty remained respecting whether the Byron facility has been properly built, the Licensing Board was obliged to withhold the green light for an operating license. Thus, assuming the Licensing Board justifiably concluded that such uncertainty existed, it necessarily follows that it rightly declined to authorize license issuance. But it does not perforce follow from the same assumption that the Board was also warranted in denying the application outright.

To the contrary, such a result would depend for its validity upon a supported finding that it is not possible for the ascertained quality assurance failings either to be cured or to be overcome to the extent necessary to reach an informed judgment that the facility has been properly constructed. In this case, the Licensing Board did not make a finding to that effect. Indeed, as has been seen, the Board did not merely disavow any suggestion that the applicant was "institutionally incapable or unwilling to maintain an adequate quality assurance program," but also noted that the applicant was "catching up" with its quality assurance problems as "the evidence unfolded at the hearing."[16] Further, as will be seen, at the time the initial decision issued the applicant's final report on its massive reinspection program was about to surface.

In this regard, we do not agree with the rationale undergirding the Licensing Board's determination not to await further developments before denying the application and terminating its jurisdiction.[17] It seems to us that that remedy was not responsive to the circumstances of the case. True, as the Board pointed out, had it "reserve[d] jurisdiction and postpone[d] final decision" an immediate appeal as a matter of right would have been foreclosed. But, in our view, that consideration cannot serve to justify the rendition of final judgment in the face of unfolding developments having a decided bearing — and conceivably a crucial effect — upon the issue that shaped that judgment.

In short, in the situation confronting it, we think that the Board should have adopted the alternative of "informing the parties now of the substance of [its] views on the quality assurance issues, retaining jurisdiction over them, and providing for further proceedings before [it] when the various inspections, investigations and remedial actions become ripe for consideration."[18] Had it done so, the applicant could still have sought discretionary appellate review of the Board's appraisal

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[16] LBP-84-2, *supra*, 19 NRC at 218.
[17] *Id.* at 279.
[18] *Ibid.*

of the existing quality assurance record.[19] True, it is unlikely that we would have undertaken such review. We cannot, however, subscribe to the Board's belief that, unless it obtained our consideration of the quality assurance issue at this juncture, the applicant would be denied due process.[20] Indeed, it is the general rule that, irrespective of how detrimental to its interests an interlocutory order might be, a party must abide the event of final action on the matter before pressing for appellate relief.

II. DISCUSSION

A. Commission regulations vest in the owner(s) of a nuclear power facility the duty of establishing and carrying out an effective quality assurance program.[21] This means that, although the facility owner may delegate to others (such as contractors) part or all of the quality assurance function, the ultimate responsibility for ensuring compliance with each Commission requirement remains with that owner.[22]

At the hearing below, the intervenors disputed the adequacy of the quality assurance program of both the applicant and its contractors. On the basis of the record, the Licensing Board found serious deficiencies to exist with respect to the quality assurance activities of several of the contractors, including the Hatfield Electric Company and the Hunter Corporation.[23] In the case of Hatfield, the deficiencies were found to be so serious that, standing alone, they necessitated a ruling against the applicant on the intervenors' quality assurance contention.[24] By way of explanation, the Board noted that it

> does not have confidence that the quality of the work at Byron by Hatfield Electric Company is adequate to provide reasonable assurance that the Byron facility can be

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[19] *See* 10 C.F.R. 2.718(i); *Public Service Co. of New Hampshire* (Seabrook Station, Units 1 and 2), ALAB-271, 1 NRC 478, 482-83 (1975).

[20] LBP-84-2, *supra*, 19 NRC at 279.

[21] *See* Criterion I of Appendix B to 10 C.F.R. Part 50 (hereafter Appendix B). As employed in the discussion in this opinion, the term "quality assurance" encompasses quality control as well. *See* Introduction to Appendix B.

[22] Criterion I of Appendix B. The quality assurance requirements are detailed in Criteria I through XVIII of that Appendix.

[23] Hatfield is the electrical contractor for Byron, and Hunter was given the responsibility for the installation and inspection of the piping and pipe support systems. The quality assurance programs of three other contractors, Blount Brothers Corporation, Reliable Sheet Metal and Systems Control Corporation, were also examined below. Blount's program was found adequate. The deficiencies discerned in the Reliable Sheet Metal and Systems Control programs, the Board determined, are remediable. LBP-84-2, *supra*, 19 NRC at 217.

[24] *Id.* at 215-16.

operated without undue risk to the public health and safety. The long and bad quality assurance history of Hatfield at Byron persuades the Board that the Applicant has not discharged its responsibility to assure that Hatfield's quality assurance program is effective. Applicant seems to have begun to meet its quality assurance responsibilities with respect to its Byron contractors very late. With respect to Hatfield, at least, we do not have assurance that even today Applicant has met those responsibilities.[25]

1. *Hatfield Electric Company*

Although the evidence established numerous deficiencies in Hatfield's quality assurance program, the Board regarded the most significant ones to be those in two areas: quality assurance inspector capability and document control. We consider them in turn.

a. *Qualification, Training and Certification of Inspection Personnel*

Byron is within the jurisdiction of the inspectors in NRC Region III. As long ago as August 1978, Region III officials issued a notice of violation to the applicant because Hatfield had not received the required approval by the applicant of its proposed procedure for obtaining compliance with one of the standards of the American National Standards Institute (ANSI).[26] In response to the notice, the applicant began a "review [of] all site contractors to verify that their training and qualification procedures compl[ied] with the requirements of" that standard.[27]

In the Spring of 1982, Region III conducted a Construction Assessment Team (CAT) inspection of the Byron units for the purpose of assessing portions of the quality assurance program governing the construction of the facility. One of the conclusions reached was:

> Based on a review of training qualification and certification records of a minimum of ten percent of the QA/QC [quality assurance/quality control] personnel working for contractors performing safety-related work it is apparent that an effective program does not exist to ensure that a suitable evaluation of initial capabilities is performed, that written certification is provided in an appropriate form, and that qualification criteria is [sic] established.
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> Certain [illegible] QA/QC supervisors and inspectors were not adequately qualified and/or trained to perform safety-related inspection functions.[28]

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[25] *Id.* at 214.

[26] *See* ANSI N45.2.6 - 1973, *Qualifications of Inspection, Examination, and Testing Personnel for the Construction Phase of Nuclear Power Plants*, which addresses, among other things, the qualifications, levels of capability and physical capabilities of quality assurance inspectors.

[27] Joint Intervenors' Exhibit 3.

[28] Applicant's Exhibit 8 at 67.

Insofar as the conclusion applied to Hatfield, it rested on these CAT findings:

> (1) The certification records for three (3) of the nine (9) inspector qualifications reviewed did not contain a Certification Evaluation Sheet.
>
> (2) The certification record for one (1) of the nine (9) QC inspector qualifications reviewed did not have records of examinations or work samples.
>
> (3) The certification records for two (2) of the nine (9) QC inspector qualifications reviewed did not provide complete evaluation and justification for certification to perform the level of inspection identified.[29]

In light of these disclosures, Region III issued another notice of violation to the applicant. In the notice, the applicant's attention was drawn to the requirement that quality assurance programs

> shall provide for indoctrination and training of personnel performing activities affecting quality as necessary to assure that suitable proficiency is achieved and maintained.[30]

b. Document Control

Another quality assurance requirement is that:

> Measures shall be established to control the issuance of documents, such as instructions, procedures, and drawings, including changes thereto, which prescribe all activities affecting quality. These measures shall assure that documents, including changes, are reviewed for adequacy and approved for release by authorized personnel and are distributed to and used at the location where the prescribed activity is performed. Changes to documents shall be reviewed and approved by the same organizations that performed the original review and approval unless the applicant designates another responsible organization.[31]

In 1979, Region III cited this requirement when it found that Hatfield had identified concrete expansion anchors as nonconforming[32] but had

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[29] *Id.* at 69. There were a total of eight companies identified that had various types of deficiencies in the area of inspector certification. The applicant's response was to initiate remedial programs that would recertify all inspectors on site at the time of the report and would reinspect enough of the work that had been completed since the beginning of Byron construction to demonstrate that the earlier quality assurance program was effective. These programs are described below. *See* pp. 1176-77, *infra*.

[30] Appendix to Applicant's Exhibit 8. The quoted requirement is found in Criterion II of Appendix B.

[31] Criterion VI of Appendix B.

[32] "Nonconformance" is defined as "[a] deficiency in characteristic, documentation, or procedure that renders the quality of an item or activity unacceptable or indeterminate." ANSI/ASME NQA-1 (1983 Ed.) *Quality Assurance Program Requirements for Nuclear Facilities* at 6.

not documented this fact in the manner prescribed by the established document control system.[33]

The Licensing Board observed that this was the first "of six such episodes indicating a continuing weakness in Hatfield's ability to maintain a reliable document control system."[34] The most recent episode described in the evidence related to the discovery by the applicant of Hatfield's use in mid-1983 of "field problem sheets" to correct nonconforming work, rather than the issuance of discrepancy reports.[35] According to the Board, this practice precluded generation of the appropriate records to identify defective inspections and, additionally, might prevent achievement of the objectives of applicant's remedial programs (*see* note 29, *supra*).[36] The Board found this most troublesome:

> As we have noted throughout this decision, a system of maintaining documentation of nonconforming conditions is essential to the reliable tracking and trending of nonconforming conditions. The need for reliable reports on deficiencies and nonconforming conditions pervades the QA criteria of Appendix B.[37]

2. *Hunter Corporation*

While the Licensing Board did not view Hunter's quality assurance program with the same degree of concern, the deficiencies encountered at that company appear to be similar in kind to those uncovered at Hatfield in that they are related to the certification of quality assurance inspectors and the maintenance of proper document control.

a. Qualification, Training and Certification of Inspection Personnel

Hunter was identified in the CAT inspection report as having a single deficiency in the certification of inspectors:

> The certification records for two (2) of the seven (7) QC inspector qualifications reviewed did not provide determination of equivalent inspection experience to support the level of certification.[38]

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[33] Joint Intervenors' Exhibit 4, Appendix A.
[34] LBP-84-2, *supra*, 19 NRC at 181.
[35] *Id.* at 200.
[36] *Ibid.*
[37] *Id.* at 183.
[38] Applicant's Exhibit 8 at 69.

b. Document Control

Michael Smith testified for intervenors that, during the period between 1978 and 1980 when he was employed by Hunter as a quality assurance inspector, that company engaged in "tabling."[39] More specifically, after having identified a discrepancy between the specified position for pipe supports and the actual location of those supports, an inspector in the field would be instructed by his or her supervisors to ignore the discrepancy and to make no mention of it in his or her documentation. According to Mr. Smith, the inspector would be told that the discrepancy would be identified after construction of the system was complete and would be corrected by a "hanger field problem" system. He went on to testify, however, that he had no evidence that the discrepancies he identified were ever placed into the "hanger field problem" system. As the Licensing Board saw it, there should have been a formal documented method to assure the inspectors that their identified nonconformances were properly addressed.[40]

Additionally, in mid-1983, the applicant found that Hunter was using "field problem sheets" in a manner similar to Hatfield in that discrepancy reports were not being initiated to document nonconformances.[41]

B. The applicant disputes the validity of the Board's findings of inadequacy of the quality assurance programs of Hatfield and Hunter, and the outright rejection of its operating license application. It argues that the Board erred in its appraisal of the evidence on the quality assurance programs of those contractors, essentially in failing to look at the evidence in its totality and in ignoring the principles of our *Callaway* decision in assessing that evidence.[42] Although conceding that there were quality assurance deficiencies, the applicant maintains, on the strength of *Callaway,* that a license denial was not warranted inasmuch as (1) there was no "widespread breakdown" in quality assurance procedures on the part of either itself or its contractors; and (2) the Licensing Board did not find any actual uncorrected construction defects of potential safety significance. In this regard, the applicant tells us that each Hatfield deficiency identified by the Board is of no safety significance, has been resolved to the staff's satisfaction, or will be rectified.[43] Further, the applicant dismisses at least one of the deficiencies on the additional ground that it was an "isolated incident" and, as such, cannot undergird

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[39] Smith, fol. Tr. 3243, at 22-23.
[40] LBP-84-2, *supra,* 19 NRC at 143.
[41] Joint Intervenors' Exhibit 29 at A1.
[42] *Union Electric Co.* (Callaway Plant, Unit 1), ALAB-740, 18 NRC 343 (1983).
[43] Applicant's Brief (February 13, 1984) at 36-46.

an expansive finding that the applicant's quality assurance program was inadequate.[44]

The fatal difficulty with this line of argument is that it ignores the fact that one of the principal deficiencies with regard to both Hatfield and Hunter related to the absence of adequate certification procedures for quality assurance personnel. Given that absence, a legitimate question arose respecting whether the quality assurance inspectors examining safety-related structures, systems and components were, in actuality, competent to perform their assigned function. And, so long as that doubt lingered, there also remained an uncertainty as to whether construction defects of potential safety significance had gone undetected.

We find nothing in *Callaway* that suggests, let alone holds, that an operating license can issue despite the presence of a cloud overhanging the adequacy of safety-related facility construction. Further, we are totally satisfied that the record before the Licensing Board was insufficient to disperse the cloud here. To be sure, as will be discussed in the next section, before the record closed the applicant had embarked upon programs designed to remove the concern engendered by the faulty inspector certification procedures. But neither the validity nor the results of those programs were (or, as a practical matter, could have been) explored in any depth at the hearing last summer. Although the applicant insists that it can and should now be left to the staff to undertake that exploration outside of the adjudicatory arena, we think otherwise. Because the efficacy and outcome of the remedial programs are central to a finding of reasonable assurance of proper facility construction, the intervenors are plainly entitled to have their day in court prior to a possible resolution of the quality assurance matter in the applicant's favor.[45]

C.1. As we have just seen, the requisite finding of reasonable assurance that the facility has been properly constructed cannot be made on the existing evidentiary record because of the uncertainty respecting the capabilities of quality assurance inspectors who examined safety-related structures, systems and components. In recognition of this uncertainty, the applicant initiated recertification and reinspection programs for the

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[44] *Id.* at 39, 45. As to the identified Hunter deficiencies, the applicant insists that the Board's findings are not supported by the record. *Id.* at 26-32.

[45] As we recently observed:

> The Commission . . . has long held that, "[a]s a general proposition, issues should be dealt with in the hearings and not left over for later (and possibly more informal) resolution." *Consolidated Edison Co. of New York* (Indian Point Station, Unit No. 2), CLI-74-23, 7 AEC 947, 951 (1974). "[T]he 'post-hearing' approach should be employed sparingly and only in clear cases" — for example, where "minor procedural deficiencies" are involved. *Id.* at 952, 951 n.8.

Louisiana Power and Light Co. (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1103 (1983). *See also Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-461, 7 NRC 313, 318 (1978).

purpose of establishing that, notwithstanding the disclosure during the CAT inspection of deficiencies in the certification records of quality assurance inspectors, those inspectors were in fact capable of performing their assigned tasks.

The recertification program was carried out between mid-1982 and early 1983.[46] It involved the establishment of revised criteria for quality assurance personnel and the development of procedures to ensure, among other things, that the individuals participating in the reinspection program satisfied these new criteria.[47]

For its part, the reinspection program was initiated in March 1983 to review the work performed by the inspectors of various contractors prior to the time the recertification program went into effect.[48] Under this program, a random sample of the inspector population was obtained by selecting every fifth inspector from a chronological listing (based on the date of certification) of each individual certified during the period between the start of Byron construction and September 1982.[49] Additionally, a minimum of three other inspectors in the employ of each contractor was selected by the NRC senior resident inspector at Byron.[50] To the extent possible, the structures, systems and components that had been examined by the selected inspectors during their first three months of certified status were reexamined to determine whether each inspector had done his or her job properly.[51] If the reexamination reflected an unacceptably high error rate in a particular area of inspection (*e.g.*, weld length), the inspector's work in that area over the next three

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[46] Tr. 7559; NRC Region III Testimony (Forney), fol. Tr. 7801, at 8.

[47] Stanish, fol. Tr. 7549, at 2-5; Tr. 7985. If necessary, inspectors were retrained and retested. Tr. 7580-82.

[48] Tuetken, fol. Tr. 7760, at 3-4; NRC Region III Testimony, fol. Tr. 7801, Attachment B, IE Report 50-454/83-15, 50-455/83-13, at 3. The eight contractors included in the reinspection program were Blount Brothers Corporation, Johnson Controls Incorporated, Hunter Corporation, Nuclear Installation Services Company, Hatfield Electric Company, Powers-Azco-Pope, Pittsburgh Testing Laboratory and Peabody Testing Laboratory. NRC Region III Testimony, fol. Tr. 7801, Attachment B, IE Report 50-454/83-26, 50-455/83-19, at 4. Other contractors who performed safety-related work were not included because their work (1) is now inaccessible, (2) was inspected by another contractor such as Pittsburgh Testing Laboratory or the Authorized Nuclear Inspector, (3) involved nondestructive examinations by inspectors certified to the appropriate industry standard, or (4) could not be recreated. NRC Region III Testimony (Forney), fol. Tr. 7801, at 6.

The contractors not included in the reinspection program performed only 6.3 percent of the total safety-related work at the Byron site. *See* letter from Alan P. Bielawski to Appeal Board (February 27, 1984), Enclosure at Figure ES-3.

[49] Tuetken, fol. Tr. 7760, at 4. This method of selection of the inspector sample was used for six contractors in the reinspection program. For the other two contractors, Powers-Azco-Pope and Johnson Controls, each quality assurance inspector certified during the period between the beginning of Byron construction and September 1982 was selected. *Ibid.* These two contractors were reinspected on this basis because of particular concern about their certification procedures used prior to the recertification program. *Id.* at 5.

[50] *Id.* at 4.

[51] *Ibid.*

months would be examined to determine whether there had been satisfactory improvement.[52] If not, all of his or her work in the area was reinspected and, for that area, the number of inspectors whose work was subject to reexamination increased by 50 percent.[53]

Some evidence was presented in August 1983 on the methodology and then-current status of the recertification and reinspection programs.[54] But when the evidentiary record was finally closed later that month, the reinspection program was still in progress. In this regard, the Board was informed that the program should be completed shortly and that Region III hoped to finish its evaluation of it by the end of the calendar year.[55] The Region further advised the Board that it would not recommend the issuance of an operating license until such time as it had conducted the evaluation and concluded that the program results were satisfactory.[56]

As of the end of December, the staff (and the Licensing Board) had in hand only a preliminary report on the results of the reinspection program.[57] (The final report did not surface until this February.)[58] Although the Board might have elected to await further developments before deciding whether the program removed all significant quality assurance concerns, as previously seen it chose instead to issue its initial decision. In it, the Board expressed several reservations regarding the adequacy of the program — none of which the Board thought had been eliminated at the hearing last August.[59] These reservations, coupled with the fact that the staff had not then found the reinspection program

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[52] *Id.* at 6.

[53] *Ibid.* The reinspection program just described is to be distinguished from another program involving the reinspection of 100 percent of the construction activities of certain contractors such as Reliable Sheet Metal and Systems Control Corporation (but not Hatfield or Hunter). Shewski, fol. Tr. 2364, at 19-20; Tr. 2514, 2579; Tr. 2664. The Licensing Board found the 100 percent reinspection program (coupled with the correction of any discerned construction deficiencies) to be an acceptable means of resolving quality assurance concerns and was prepared to leave the oversight of the program to the staff. LBP-84-2, *supra*, 19 NRC at 216. As will be seen, however, there is a question respecting the application of the program to Systems Control that requires resolution on an adjudicatory record. *See* pp. 1179-80, *infra*.

[54] *See, e.g.*, Stanish, fol. Tr. 7549, and Tuetken, fol. Tr. 7760.

[55] Tuetken, fol. Tr. 7760, at 7; Tr. 7858-59; Tr. 7979.

[56] Tr. 7859.

[57] *See* letter from Bruce D. Becker to Licensing Board (November 3, 1983) with enclosure.

[58] *See* letter from Alan P. Bielawski to Appeal Board (February 27, 1984) with enclosure.

[59] For example, the Board observed that it was not known if the program was using a statistically significant and reliable sample. LBP-84-2, *supra*, 19 NRC at 214. The Board was also concerned about the discovery of documentation deficiencies (*e.g.*, use of "field problem sheets" rather than discrepancy reports) during an audit of the reinspection program by the applicant. *See* pp. 1173, 1174, *supra*. These concerns might have been resolved had the Board received further evidence. For example, the applicant complains that the Board showed no interest in the sampling size during the August hearing. Applicant's Brief at 57-58. We note that applicant's counsel claimed at oral argument that his client could have responded to this concern if known. App. Tr. 128-29.

"sufficient to assure that Hatfield's work is good enough,"[60] heavily influenced the outright denial of the operating license application.

As matters now stand, not only is the applicant's final report on the reinspection program on file but, in addition, the staff has concluded an appraisal of the program and its results.[61] In the totality of circumstances, the appropriate course is a further hearing to permit a full exploration of the significance of the program in terms of whether there is currently reasonable assurance that the Byron facility has been properly constructed.[62] Stated otherwise, the focus of the inquiry should be upon whether, as formulated and executed, the reinspection program has now provided the requisite degree of confidence that the Hatfield and Hunter quality assurance inspectors were competent and, thus, can be presumed to have uncovered any construction defects of possible safety consequence.[63]

At minimum, the following questions must be addressed in deciding whether the methodology, implementation and results of the reinspection program were adequate to resolve the concerns about (1) the capability of the Hatfield and Hunter quality assurance inspectors, and (2) the quality of the work performed by these two contractors: Has the integrity of the reinspection program been established even though the reinspections were conducted by Hatfield and Hunter personnel, rather than by an independent organization?[64] Have the deficiencies identified during the reinspections been properly included in the statistics of the program regardless of the particular documentation (*e.g.*, "field problem sheets") used to record such deficiencies? Has the sampling methodology provided adequate confidence in the capability of the Hatfield and Hunter quality assurance inspectors whose work was not reinspected and the overall quality of the work of those two contractors? Inasmuch as

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[60] LBP-84-2, *supra*, 19 NRC at 214.

[61] *See* letters from Richard J. Rawson to Appeal Board (April 2 and April 18, 1984) with which were enclosed W.S. Little affidavit and IE Report 50-454/84-13, 50-455/84-09, respectively.

[62] To avoid any possible misunderstanding, we stress that this conclusion rests entirely upon the particular circumstances of this case as discussed in the text. In sum, it seems to us that the public interest would be ill-served were final judgment to be passed on the operating license application without a full evidentiary consideration of the reinspection program and its results.

[63] With regard to the identified deficiencies in Hatfield and Hunter document control, a finding as a result of the reinspection program that the quality of the work performed by those contractors is acceptable would indicate that these deficiencies did not adversely affect the final product.

[64] In this regard, we note that the Board below raised concerns on this issue in its hearing in August 1983. Applicant's witness Tuetken assured the Board that administrative controls precluded any inspector from reinspecting his or her own work. Tr. 7783-84. But, it is clear that at least some of the same inspectors whose work was being reinspected did participate in the reinspection program and, more importantly, knew whose work they were reinspecting. *Ibid.* There thus remains the question whether the potential for inspectors protecting each other from criticism has significantly flawed the reinspection program and its results.

the reinspection program only covered inspectors certified up to September 1982 and the recertification program was not completed until early 1983,[65] has the applicant ensured that inspectors certified between these dates are capable of performing their tasks? Have all identified discrepant conditions, such as poor welding, been properly resolved?

2. Since the issuance of the Licensing Board's initial decision, we have received new information that suggests that the Board may have made an incorrect assumption regarding the extent of a reinspection of equipment supplied by one of the applicant's contractors, Systems Control Corporation. This equipment included cable trays and supports, instrument racks and main and local control boards.

Serious quality assurance failures at Systems Control led to the establishment in February 1980 of an independent inspection program.[66] In discussing this matter, the Board below indicated that the program called for (1) 100 percent inspection and acceptance by Pittsburgh Testing Laboratory prior to the shipment of further material by Systems Control to the Byron site; and (2) a 100 percent reinspection of Systems Control instrument panels already shipped to Byron by February 1980.[67] But, in resolving its concerns regarding the quality assurance program of this contractor, the Board apparently proceeded on the assumption (possibly erroneous) that all Systems Control material (not just instrument panels) already shipped to Byron were to be reinspected. This is seen from the Board's statement:

> We concluded that the Systems Control Corporation quality assurance program broke down, was unreliable and fraudulent and that Applicant defaulted in its respective oversight responsibility. The inquiry by the Department of Justice into alleged fraud at Systems Control was pending at the close of the record. Problems with Systems Control were still open items with Region III. The Board noted that the 100 percent reinspection of Systems Control work may remove the matter from a direct safety concern. This factor, the reinspection of all of Systems Control's work, which by its nature is accessible for reinspection, points to a somewhat different conclusion than the Hatfield situation. The results of the reinspection can be evaluated by the Staff as a matter of routine procedure as a delegable function. There is nothing left to adjudicate with respect to Systems Control.[68]

By letter of March 14, 1984, applicant's counsel informed us that onsite inspectors had identified deficient welds on cable pan hangers supplied by Systems Control. We received further information in Board

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[65] *See* p. 1176, *supra*.
[66] Tr. 2579.
[67] LBP-84-2, *supra*, 19 NRC at 133.
[68] *Id.* at 216.

Notification 84-074 (April 17, 1984). We were not told precisely when those hangers were shipped to Byron; all that we do know is that the applicant believes the welds were made prior to December 23, 1980. There is at least the possibility that the hangers were still at Systems Control's plant in February 1980; if so, it would appear that either Pittsburgh Testing Laboratory did not perform a 100 percent inspection or the inspection was not carefully performed. If, instead, the hangers were already on the Byron site in February 1980, the question arises: why were not the defects uncovered long ago? This matter also warrants exploration on the evidentiary record.

D. What remains for determination is whether we should undertake the conduct of the further hearing ourselves and, if not, whether the remand should be to this Licensing Board or a differently constituted one. As earlier noted, the applicant would prefer any additional evidence to be taken by us; alternatively, it asks that a new licensing board be established. On the other hand, given the taking of additional evidence, the intervenors urge a remand to the existing Board. For its part, the staff maintains that we should preside over the further hearing. If, however, there is a remand, the staff agrees with the intervenors that the existing Licensing Board should not be replaced.

For the following reasons, we have chosen the course recommended by the intervenors.

1. We reject summarily the applicant's suggestion that any remand be directed to a new licensing board. That suggestion appears to rest exclusively on the applicant's insistence that the existing Licensing Board "has apparently been improperly influenced" by the information it received at an *ex parte, in camera* hearing.[69] With respect to that hearing, the Board had this to say in its initial decision:

> On August 9 and 10, 1983 the Board heard from representatives of the Office of Inspection and Enforcement, Region III, and the Office of Investigations, *in camera* and *ex parte*, to learn the status of pending inspections and investigations. We determined that some of the inspections are of no further interest and all of the inspections and the investigations were in stages too early to produce reliable results. Memorandum and Order, LBP-83-51, 18 NRC 253 (1983). Subsequently, and prior to August 26, we again reviewed the transcript of the *in camera, ex parte* session in connection with disclosing nonconfidential portions. The Board has not since reviewed that transcript and we do not use that information in this decision.[70]

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[69] Applicant's Motion in the Alternative to Reopen the Record (February 13, 1984) at 6.
[70] LBP-84-2, *supra*, 19 NRC at 215 n.75.

The applicant has given us no cause to doubt the accuracy of the Board's representation that its decision was not influenced by the testimony presented at the hearing. Nor have we been provided with a credible basis for concluding that that testimony might affect the Board's appraisal of the evidence adduced on remand. In the circumstances, the disqualification of the Board would (1) be without legal or factual foundation; (2) cast unwarranted aspersions on its members; and (3) undoubtedly retard the completion of the remand inasmuch as the members of the new licensing board assuredly would require time to familiarize themselves with the issues and existing record.[71]

2. The choice then is between the existing Licensing Board and this Board. The only consideration possibly favoring our conducting the further hearing is that one tier of appellate review would be eliminated. On the other side of the scale are factors of at least equal weight. For one thing, the Licensing Board has acquired some familiarity with the reinspection program as a result of having taken evidence over several days on the subject. For another, given the extensive hearings held by it on the various aspects of the issue of the adequacy of the applicant's quality assurance program, that Board is in a better position to evaluate *ab initio* the relative significance of any new evidence. (It is for this reason that we are calling upon that Board not merely to make additional findings based on the further evidence, but also to reexamine the ultimate findings in its initial decision to determine whether they might require alteration.) In light of these factors, there simply is insufficient cause for us to undertake the record development function that, absent extraordinary circumstances, should not be assumed by this appellate body but, rather, left in the hands of the duly constituted trial tribunal — the Licensing Board.

This is not to say, of course, that we are insensitive to the fact that the public interest (as well as that of all parties to the proceeding) will be served by an expeditious ultimate resolution of the controversy. Indeed, our retention of jurisdiction over the proceeding to await the completion of the remand was prompted by a recognition of that fact.

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[71] We need not, and do not, now pass upon applicant's claim, renewed in its April 27, 1984 post-argument supplemental memorandum, that the *ex parte, in camera* hearing violated constitutional and statutory hearing rights. Even if there were a constitutional violation, no basis exists for not returning the case to the same Licensing Board. In this connection, the applicant has not suggested that the members of the Board are biased against it.

III. CONCLUSION

For the foregoing reasons, the *record* is *remanded* to the Licensing Board for a further evidentiary hearing on the quality assurance issue.[72] Following the conclusion of that hearing, the Board shall render a supplemental initial decision which is to include (1) its findings based upon the additional evidence adduced; and (2) the modification or withdrawal of any ultimate findings and conclusions in the Board's January 13, 1984 initial decision that might require such treatment as a result of that additional evidence. Pending the rendition of the supplemental initial decision, this Board will retain jurisdiction over the proceeding and the applicant's appeal from the initial decision.[73]

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

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[72] Although the hearing must address those specific questions alluded to in Part II.C. of this opinion, the Licensing Board is free to include any other question (related to the reinspection program or otherwise) that it deems relevant to the ultimate issue of whether, notwithstanding quality assurance deficiencies, reasonable assurance exists that the Byron facility has been properly constructed.

[73] With a single exception, our consideration of all non-quality assurance issues raised by the intervenors will abide the event of the rendition of the supplemental initial decision. The exception is the financial qualifications issue. The Licensing Board precluded the intervenors from pressing a contention that the applicant was not financially qualified to operate the facility. It did so because, effective March 31, 1982, the Commission had amended its regulations to remove financial qualifications issues from, *inter alia*, licensing proceedings such as this one. 47 Fed. Reg. 13,750 (1982). Last February, however, the Court of Appeals for the District of Columbia Circuit held the amended rule was not supported by its accompanying statement of basis and purpos as required by the Administrative Procedure Act. Accordingly, the court remanded the rule to the Commission for further proceedings consistent with its opinion. *New England Coalition on Nuclear Pollution v. NRC*, 727 F.2d 1127 (D.C. Cir. 1984).

The court's mandate having been issued, we solicited the views of the parties respecting the course that now should be followed on the financial qualification question in this case. In addition, we expect generic Commission guidance to be forthcoming shortly. Once it has been received and considered, we will issue a further order on the matter.

Cite as 19 NRC 1183 (1984) ALAB-771

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Gary J. Edles, Chairman
Dr. W. Reed Johnson
Dr. Reginald L. Gotchy

In the Matter of **Docket No. 50-460-CPA**

WASHINGTON PUBLIC POWER SUPPLY SYSTEM
(WPPSS Nuclear Project No. 1) **May 15, 1984**

The Appeal Board affirms the Licensing Board's decision, LBP-84-9, 19 NRC 497 (1984), granting summary disposition to the applicant on the single admitted contention challenging the good cause for obtaining a construction permit extension.

CONSTRUCTION PERMITS: EXPIRATION OF COMPLETION DATE

Under Commission regulations, if construction of a nuclear power plant is not complete by the latest date specified in the construction permit, the permit expires and all rights thereunder are forfeited. 10 C.F.R. § 50.55(b); Atomic Energy Act of 1954, § 185, 42 U.S.C. § 2235.

CONSTRUCTION PERMITS: EXTENSION OF COMPLETION DATE (GOOD CAUSE)

"Upon good cause shown, the Commission will extend the completion date for a reasonable period of time." 10 C.F.R. § 50.55(b).

CONSTRUCTION PERMITS: EXTENSION OF COMPLETION DATE (EFFECT OF APPLICATION)

A timely filed application for extension of an existing construction permit automatically extends the permit until the extension application is determined. 10 C.F.R. § 2.109.

CONSTRUCTION PERMITS: EXTENSION OF COMPLETION DATE (HEARING ON APPLICATION)

Hearings are mandated for applications for initial construction permits and, therefore, such applications may not be disposed of summarily, even if uncontested. *See* section 189 of the Atomic Energy Act, 42 U.S.C. § 2239; 10 C.F.R. §§ 2.749(d), 2.104(b)(2), (3). Permit amendment cases, however, are not subject to the mandatory hearing requirement and summary disposition limitation. *See Washington Public Power Supply System* (WPPSS Nuclear Project, Nos. 1 & 2), CLI-82-29, 16 NRC 1221, 1231 (1982) (hearing on extension request to be held only if petitioner can satisfy requirements of 10 C.F.R. § 2.714); *Georgia Power Co.* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), ALAB-291, 2 NRC 404, 407 n.5 (1975). *Cf. Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-82-41, 15 NRC 1295 (1982).

RULES OF PRACTICE: SUMMARY DISPOSITION

Summary disposition of a contention may be granted based on pleadings alone, or pleadings accompanied by affidavits or other documentary information, where there is no genuine issue as to any material fact that warrants a hearing.

CONSTRUCTION PERMITS: EXTENSION OF COMPLETION DATE (SCOPE OF PROCEEDING)

To be admissible, a contention in a construction permit extension case must either challenge the applicant's reasons for delay or seek to show that other reasons, not constituting good cause, are the principal basis for delay. CLI-82-29, *supra*, 16 NRC at 1230.

CONSTRUCTION PERMITS: EXTENSION OF COMPLETION DATE (SCOPE OF PROCEEDING)

Permit extension proceedings are not intended to permit periodic relitigation of health, safety, or environmental questions between the

time a construction permit is granted and the time the facility is authorized to operate. *Id.* at 1228.

CONSTRUCTION PERMITS: EXTENSION OF COMPLETION DATE (SCOPE OF PROCEEDING)

A two-pronged test for determining whether a contention is within the scope of a permit extension proceeding is: (1) the construction delays at issue have to be traceable to the applicant and (2) the delays must be "dilatory," *i.e.*, the intentional delay of construction without a valid purpose. *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-722, 17 NRC 546, 551, 552 (1983), *cited with approval in Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975, 978 (1984).

CONSTRUCTION PERMIT PROCEEDINGS: EXTENSION OF COMPLETION DATE (SCOPE OF PROCEEDING)

Intentional delay of construction by a construction permit holder for financial reasons constitutes a valid business purpose and is not dilatory for the purpose of determining a contention within the scope of a permit extension proceeding. Similarly, questions about the need for power, cost of completion and financial consequences are not admissible contentions. CLI-84-6, *supra*, 19 NRC at 978-79 & n.2.

ADJUDICATORY BOARDS: ROLE

It is not the mission of the adjudicatory boards to superintend utility management when it makes business judgments. *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit No. 2), ALAB-475, 7 NRC 752, 757-58 (1978).

CONSTRUCTION PERMITS: EXTENSION OF COMPLETION DATE (REASONABLE PERIOD)

Under 10 C.F.R. § 50.55(b) of the Commission's regulations, the completion date specified in a construction permit may be extended for a reasonable period of time. The purpose behind this "reasonable period of time" requirement is to ensure that the applicant does not select a completion date that frustrates the NRC's regulatory oversight. Selection of a date that permits examination of a new extension request in a timely fashion is consistent with 10 C.F.R. § 50.55.

APPEARANCES

Nina Bell. Washington, D.C., for the intervenor Coalition for Safe Power.

Nicholas S. Reynolds and **Sanford L. Hartman,** Washington, D.C., for the applicant Washington Public Power Supply System.

Mitzi A. Young and **Mary E. Wagner** for the Nuclear Regulatory Commission staff.

DECISION

The Nuclear Regulatory Commission's regulations provide that if construction of a nuclear power plant is not complete by the latest date specified in the permit, "the [construction] permit shall expire and all rights thereunder shall be forfeited."[1] Nevertheless, "upon good cause shown the Commission will extend the completion date for a reasonable period of time."[2]

The outstanding permit held by the Washington Public Power Supply System (WPPSS) for Unit 1 contains a completion date of January 1, 1982. WPPSS timely filed an application for a permit amendment extending that date to June 1, 1986.[3] The facility is slightly more than 60 percent complete. The Coalition for Safe Power (Coalition) requested a hearing on the application.

The Commission reviewed the Coalition's request and determined that only one of several contentions the Coalition sought to raise — *i.e.*, one dealing with whether delays in construction were under the full control of WPPSS management — was potentially pertinent to an extension proceeding.[4] The Commission ruled that, under section 185 of the Atomic Energy Act and 10 C.F.R. § 50.55(b), "the scope of a construction permit extension proceeding is limited to direct challenges to the permit holder's asserted reasons that show 'good cause' justification for

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[1] 10 C.F.R. § 50.55(b). The Commission promulgated these regulations pursuant to section 185 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. § 2235.

[2] 10 C.F.R. § 50.55(b).

[3] A timely filed application for extension of an existing permit automatically extends the permit until the extension application is determined. 10 C.F.R. § 2.109.

[4] *Washington Public Power Supply System* (WPPSS Nuclear Project Nos. 1 & 2), CLI-82-29, 16 NRC 1221, 1230-31 (1982).

the delay."[5] The Commission observed generally that the availability of a subsequent operating license proceeding, and the opportunity of any person in the interim to ask the NRC staff to institute a show cause proceeding, are sufficient to assure an available forum in which to raise health, safety, or environmental questions.[6] It referred the Coalition's hearing request to the Licensing Board to determine whether the Coalition satisfied the balance of the hearing requirements contained in 10 C.F.R. § 2.714 and, if so, to conduct any necessary hearing.[7]

WPPSS thereafter filed an amendment to its application seeking a further extension from 1986 to June 1, 1991. In light of the amendment, the Board permitted the Coalition to propose additional contentions. Subsequently the Board rejected contentions relating to the 1986 extension but admitted a single contention with regard to the 1991 extension, as follows:

> Petitioner contends that the Permittee's decision in April 1982 to "defer" construction for two to five years, and the subsequent cessation of construction at WNP-1, was dilatory. Such action was without "good cause" as required by 10 C.F.R. 50.55(b). Moreover, the modified request for extension of completion date to 1991 does not constitute a "reasonable period of time" provided for in 10 C.F.R. 50.55(b).[8]

In response to motions by the applicant and the NRC staff, the Licensing Board thereafter granted summary disposition on the one admitted contention.[9] The Board found, based on what it believed to be uncontested facts, that the deferral and cessation of construction of Unit 1 stemmed from a lack of financial resources to complete both Units 1 and 3 and a forecast of no demand for Unit 1's electric power until at least 1986. These factors, in the Board's view, constituted "good cause" for the delay and justified a grant of the extension application. In reaching its decision, the Board accepted the Coalition's assertion that other alternatives, such as cancellation of Unit 1 entirely, might be more prudent, as well as the Coalition's appraisal that the economic situation would eventually cause abandonment of the facility. Nevertheless, the Board declined to substitute its judgment for that of the company in selecting among options currently available. It thus determined that

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[5] *Id.* at 1229.
[6] *Ibid.*
[7] *Id.* at 1231.
[8] Memorandum and Order (Admitting Intervenor and Contention) (March 25, 1983) at 4-5 (unpublished).
[9] LBP-84-9, 19 NRC 497 (1984).

WPPSS's action constituted good cause for the extension, even if there were preferable options and the deferral ultimately proves unavailing.

The Coalition appeals. It attacks the Board's decision essentially from two directions. First, it asserts that the use of summary disposition contravenes certain procedural requirements in 10 C.F.R. §§ 2.749(d) and 2.760.[10] Second, it charges that the Board misapplied the criteria for summary disposition and erroneously found that there are no material facts in issue.[11] WPPSS and the NRC staff support the Board's result. We affirm.

I.

The Coalition argues that the Board's dismissal of the entire proceeding violates section 2.749(d) because that provision restricts the use of summary disposition *in construction permit proceedings* to a "determination of specific subordinate issues" not including "the ultimate issue as to whether the permit shall be issued." The Coalition misreads the regulation.

Construction permit proceedings are only those involving applications for issuance of the initial permit. The instant case, in contrast, is a permit *amendment* proceeding. Because the Commission is required by section 189 of the Atomic Energy Act to hold a hearing with respect to applications for initial construction permits even if an application is uncontested, a licensing board may not in such cases dispose summarily (*i.e.*, without the required hearing) of the ultimate question of whether a permit shall issue.[12] Section 2.749(d) is intended to implement that statutory requirement by prohibiting summary disposition in proceedings "involving a construction permit where a hearing is required by law."[13] Permit amendment cases, however, are not subject to the mandatory hearing requirement so the limitation contained in section 2.749(d) is inapplicable.[14]

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[10] Appeal by Coalition for Safe Power of Licensing Board Order Dated February 2 [sic], 1984 Granting Applicant and NRC Staff Motions for Summary Disposition (March 19, 1984) at 1-4.

[11] *Id.* at 4-13.

[12] *See* 10 C.F.R. §§ 2.104(b)(2), (3). Hearings were held in this case for the initial construction permit. *See* LBP-75-41, 2 NRC 131 (1975) and LBP-75-72, 2 NRC 922 (1975), *aff'd*, ALAB-309, 3 NRC 31 (1976).

[13] 37 Fed. Reg. 15,127, 15,129 (1972).

[14] CLI-82-29, *supra*, 16 NRC at 1231 (hearing on extension request to be held only if petitioner can satisfy requirements of 10 C.F.R. § 2.714); *Georgia Power Co.* (Alvin W. Vogtle Nuclear Plant, Units 1 and 2), ALAB-291, 2 NRC 404, 407 n.5 (1975). *Cf. Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), LBP-82-41, 15 NRC 1295 (1982).

(Continued)

The Coalition also contends that the Board's decision contravenes section 2.760 because its opinion was not supported by reliable, probative and substantial evidence. We disagree. Summary disposition may be granted based on pleadings alone, or pleadings accompanied by affidavits or other documentary information, where there is no genuine issue as to any material fact that warrants a hearing and the moving party is entitled to a decision in its favor as a matter of law.[15] As discussed in more detail below, we believe the Board's decision is amply documented.

II.

In three opinions over the past eighteen months the Commission and this Board enunciated the criteria to be followed by licensing boards in examining permit extension requests.[16] In an opinion involving the instant permit extension request and a companion request for extension of the permit for WPPSS Unit 2, the Commission ruled that, under the Atomic Energy Act and its regulations, the focus of a permit extension case is on the "reasons that have contributed to the delay in construction and whether those reasons constitute 'good cause' for the extension."[17] Stated differently, to be admissible a contention must either "challenge the [applicant's] reasons for delay [or] seek to show that other reasons, not constituting good cause, are the principal basis for the delay."[18] Permit extension proceedings are not intended to permit "periodic relitigation of health, safety, or environmental questions . . . between the time a construction permit is granted and the time the facility is authorized to operate."[19]

We refined the Commission's guidance into a two-pronged test for determining whether a contention is within the scope of a permit extension proceeding. "First, the construction delays at issue have to be traceable to the applicant. Second, the delays must be 'dilatory.' "[20] We

The Coalition asserts, additionally, that the limitation in 10 C.F.R. § 2.749(d) is applicable because, by challenging the need for power, the Coalition called into question the "fundamental basis upon which the original construction permit was issued." Appeal by Coalition at 2. Neither the fact that an intervenor seeks to raise in an extension case issues previously decided in the original permit proceeding, nor the fact that an amendment application, if granted, extends the effectiveness of the original permit serves to transform the application into one for an initial permit or to reopen the original proceeding.

[15] 10 C.F.R. § 2.749(d).

[16] *Public Service Co. of New Hampshire* (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975 (1984); CLI-82-29, *supra*; *Washington Public Power Supply System* (WPPSS Nuclear Project No. 2), ALAB-722, 17 NRC 546 (1983).

[17] CLI-82-29, *supra*, 16 NRC at 1228.

[18] *Id.* at 1230.

[19] *Id.* at 1228.

[20] ALAB-722, *supra*, 17 NRC at 551.

defined "dilatory" for such purposes as "the intentional delay of construction without a valid purpose."[21] The Commission endorsed our promulgation of this test in its *Seabrook* opinion.[22] In doing so, it noted that delay for financial reasons constitutes a valid business purpose.[23] Applying the test, the Commission ruled out "questions about the need for power, cost of completion and financial consequences to both the utility and to the ratepayers."[24]

The Coalition raises three issues for litigation in this case. First, it proposes to demonstrate that the reasons for the delay in construction are no present or future need for WPPSS 1 power, a permanent lack of funds, and the negative effect on rates of completing the plant — not a temporary slowing of demand and a temporary lack of funds, as alleged by the applicant. Second, it would assertedly show that the applicant's action is imprudent given other available alternatives. Third, it seeks to prove that the deferral period is demonstrably too short. It claims, in this latter regard, that acceptance of the 1991 date by the Board essentially renders 10 C.F.R. § 50.55(b) meaningless. We believe the Licensing Board properly applied the summary disposition criteria and correctly found that there were no material facts in dispute when it granted the motions filed by WPPSS and the staff.

A. There is no dispute that the forecast of no demand for the electric power to be generated at Unit 1 by 1986 and the lack of financial resources to complete the project prompted the deferral decision. The only facts controverted are whether such conditions are temporary or permanent, and whether the effect of completion on utility rates also played a role. The Board found that the resolution of these disputes was immaterial to its decision,[25] and we agree. To justify denial of a permit extension, we must find that the delay is "dilatory." Delay genuinely and primarily attributable to lower expected demand for power or financial circumstances, whether of limited or indefinite duration, represents a valid business purpose and is perforce not dilatory.

B. We believe that the Licensing Board correctly concluded that it should not substitute its judgment for that of the applicant in selecting one among a number of reasonable business alternatives.[26] It is not our mission to superintend utility management when it makes business judg-

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[21] *Id.* at 552.
[22] CLI-84-6, *supra*, 19 NRC at 978.
[23] *Id.* at 979 n.2.
[24] *Id.* at 978-79.
[25] LBP-84-9, *supra*, 19 NRC at 503-05.
[26] *Id.* at 505.

ments for which it is ultimately responsible.[27] The Coalition does not claim that the extension has genuine and immediate health, safety, or environmental implications. That being so, we find that there were no facts appropriate for hearing.

C. Section 185 of the Atomic Energy Act authorizes the Commission, for good cause shown, to extend the completion date contained in the permit. In section 50.55(b) of the regulations, the Commission added the regulatory requirement that such extension be "for a reasonable period of time." The application before us would extend the permit to no later than 1991. The Coalition challenges the reasonableness of the period by asserting that the plant cannot be completed by that time and argues that prolonged delay might well lead to a deterioration of equipment. The Board declined to allow litigation of the issue. It concluded, in the first place, that nothing in the Atomic Energy Act or the regulations suggests that one may challenge an extension request as insufficient. In the Board's judgment, the effect of any error in the time estimate would, at worst, require the applicant to apply for another extension and demonstrate anew that good cause exists for the further extension.[28] Moreover, it found that the health, safety and environmental effects of construction delays are better left to the operating license proceeding.[29]

While not necessarily in agreement with everything the Board said, we decline to upset its determination. Like the Board, we accept for present purposes the Coalition's factual assertion that the plant cannot be completed by 1991. Although the applicant is required by statute and our regulations to fix a date certain for completion of the plant when making its extension request, what seems plain is that current circumstances prevent the selection of a completion date with total confidence. We agree with the Licensing Board, however, that the purpose behind the "reasonable period of time" requirement contained in section 50.55(b) is to ensure that the applicant not select a completion date that frustrates our regulatory oversight.[30] Obviously, in most cases the

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[27] *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit No. 2), ALAB-475, 7 NRC 752, 757-58 (1978).

[28] LBP-84-9, *supra*, 19 NRC at 506.

[29] *Id.* at 506-07. The Board noted that a contention regarding unnamed construction defects that might result from the applicant's method of preserving the construction during the period of deferral has been admitted in the operating license proceeding. *Id.* at 506.

[30] The Board noted that it might view the matter differently if the Coalition alleged that the applicant had decided to abandon the plant. *Id.* at 505. On brief to us the Coalition asserts that the lack of need for power and lack of financing "were more or less permanent" but does not offer to prove that the WPPSS management has decided on abandonment. Appeal by Coalition at 6. Thus, we need not reach the issue of whether abandonment would raise a material factual question.

"reasonable period of time" will coincide with the most likely completion date. But, in the absence of a showing that the applicant's selection of the proposed completion date will compromise the Commission's oversight responsibilities, we believe that the selection of a date that permits examination of a new extension request in a timely fashion is consistent with 10 C.F.R. § 50.55. We also assume, for the purposes of summary disposition, that some equipment deterioration may occur as a result of the delay. We concur in the Licensing Board's judgment, though, that such matter is better evaluated empirically in the operating license case.

The Licensing Board's decision is *affirmed.*
It is so ORDERED.

FOR THE APPEAL BOARD

Barbara A. Tompkins
Secretary to the
Appeal Board

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING APPEAL BOARD

Administrative Judges:

Gary J. Edles, Chairman
Dr. John H. Buck
Christine N. Kohl

In the Matter of **Docket No. 50-289-SP (Management Phase)**

METROPOLITAN EDISON COMPANY, *et al.*
(Three Mile Island Nuclear Station, Unit 1)

May 24, 1984

Acting on the appeals of three intervenor groups from the Licensing Board decisions concluding that the licensee has demonstrated its managerial capability and technical resources to operate Unit 1 of the Three Mile Island reactor in a safe manner, the Appeal Board remands the proceeding to the Licensing Board for further hearing on, *inter alia*, the adequacy of licensee's training program. In addition, the Appeal Board grants an intervenor group's motion to reopen the record for a hearing on allegations of improper leak rate practices at TMI-1.

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

Parties in NRC adjudicatory proceedings have an obligation to apprise the boards of significant new information. *See Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 & 2), ALAB-143, 6 AEC 623, 625-26 (1973).

ATOMIC ENERGY ACT: DUTY OF LICENSEES

Under the Atomic Energy Act, licensees are required to comply with Commission requirements for the protection of the public health and safety. *See* section 103b of the Atomic Energy Act, 42 U.S.C. § 2133b.

ATOMIC ENERGY ACT: LICENSEE'S CHARACTER

Under the Atomic Energy Act, the Commission is authorized to consider a licensee's character or integrity in deciding whether to continue or revoke its operating license. *See* section 182a of the Atomic Energy Act, 42 U.S.C. § 2232a; *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), CLI-80-32, 12 NRC 281, 291 (1980). *See also Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-83-2, 17 NRC 69, 70 (1983); *id.*, ALAB-106, 6 AEC 182, 184 (1973).

ATOMIC ENERGY ACT: DUTY OF LICENSEES

A licensee of a nuclear power plant has a great responsibility to the public, one that is increased by the Commission's heavy dependence on the licensee for accurate and timely information about the facility and its operation. *Hamlin Testing Laboratories, Inc. v. AEC*, 357 F.2d 632, 638 (6th Cir. 1966); *Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 418-19 (1978).

EVIDENCE: TESTIMONY BY CONSULTANTS

The value of testimony by a witness at NRC proceedings is not undermined merely by the fact that the witness is a hired consultant of a licensee. *See Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1091 (1983).

RULES OF PRACTICE: FINDINGS OF FACT (EFFECT OF FAILURE TO FILE)

Parties who fail to file proposed findings of fact and conclusions of law on a matter may be deemed to be in default and to have waived any further right to pursue the issue. 10 C.F.R. § 2.754. *See Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-709, 17 NRC 17, 23 (1983).

EVIDENCE: CREDIBILITY (DEMEANOR OF WITNESS)

Where credibility of evidence turns on the demeanor of a witness, the appeal board gives the judgment of the trial board which saw and heard the testimony particularly great deference. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 404 (1976).

EVIDENCE: CREDIBILITY (DEMEANOR OF WITNESS)

Demeanor evidence is of little value where other testimony, documentary evidence, and common sense suggest a contrary result. *See Millar v. FCC*, 707 F.2d 1530, 1539-40 (D.C. Cir. 1983); *Local 441, IBEW v. NLRB*, 510 F.2d 1274, 1276 (D.C. Cir. 1975).

ATOMIC ENERGY ACT: LICENSING STANDARDS (LICENSEE'S MANAGEMENT COMPETENCE)

Ethics and technical proficiency are both legitimate areas of inquiry in the consideration of a licensee's overall management competence.

ATOMIC ENERGY ACT: LICENSEE TRAINING PROGRAMS (ROLE OF STAFF)

An active role in reviewing and auditing licensee training programs and examinations is contemplated for the NRC staff under Commission regulations. *See generally* 10 C.F.R. §§ 55.10(a)(6), 55.33(a)(4). *See also* 10 C.F.R. Part 55, Appendix A; NUREG-0660 (May 1980), Task I.A.2; Reg. Guide 1.8, "Personnel Qualification and Training," 2d proposed rev. 2 (1980), §§ 2.2.2, 2.2.7.

REGULATIONS: EFFECT (CONFLICT WITH LICENSING BOARD REQUIREMENTS)

The promulgation of more stringent regulations, applicable to all licensees, supersedes less stringent requirements imposed by a licensing board in a particular proceeding.

LICENSING BOARDS: AUTHORITY TO REGULATE PROCEEDINGS

A licensing board may alter the usual order of presentation of evidence and require an intervenor that would normally follow a licensee to pro-

ceed with its case first. This course of action is appropriate where, for example, the intervenor has failed to comply with discovery requests and orders. *See Northern States Power Co. (Minnesota)* (Tyrone Energy Park, Unit 1), LBP-77-37, 5 NRC 1298, 1300-01 (1977), *cited with approval in Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 12 NRC 317, 338 (1980); *Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 188 (1978); 10 C.F.R. § 2.731; 10 C.F.R. Part 2, Appendix A, § V(d)(4); 5 U.S.C. § 556. The burden of proof on licensee, however, remains unchanged in these circumstances. *See Consumers Power Co.* (Midland Plant, Units 1 & 2), ALAB-315, 3 NRC 101, 105 (1976).

RULES OF PRACTICE: BURDEN OF GOING FORWARD

Where an intervenor raises a particular contention challenging a licensee's ability to operate a nuclear power plant in a safe manner, the intervenor necessarily assumes the burden of going forward with the evidence to support that contention. *See Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 345 (1973).

RULES OF PRACTICE: REPRESENTATION (CHANGE IN REPRESENTATIVE)

When a party is permitted to enter a case late, it is expected to take the case as it finds it. It follows that when a party that has participated in a case all along simply changes *representatives* in midstream, knowledge of the matters already heard and received into evidence is imputed to it.

RULES OF PRACTICE: REPRESENTATION (NON-ATTORNEY REPRESENTATIVE)

The NRC's Rules of Practice permit non-attorneys to appear and represent their organizations in agency proceedings. *See* 10 C.F.R. § 2.713(b). *Compare* 49 C.F.R. §§ 1103.2, 1103.3 (Interstate Commerce Commission); 2d Cir. § 46(d); 3d Cir. R. 9; Fed. Cir. R. 7(a).

RULES OF PRACTICE: RESPONSIBILITIES OF PARTIES

Although the NRC adjudicatory boards do not hold lay representatives to as high a standard as they do lawyers, all representatives have a responsibility to comply with and be bound by the same agency procedures

as all other parties, even where a party is hampered by limited resources. *Statement of Policy on Conduct of Licensing Proceedings*, CLI-81-8, 13 NRC 452, 454 (1981). *See, e.g., Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-693, 16 NRC 952, 956-57 (1982).

LICENSING BOARDS: DISCRETION IN MANAGING PROCEEDINGS (CALLING OF EXPERT WITNESSES)

An adjudicatory board should call upon independent experts to assist the board itself only in the most extraordinary circumstances — *i.e.*, when a board simply cannot otherwise reach an informed decision on the issue involved. *South Carolina Electric and Gas Co.* (Virgil C. Summer Nuclear Station, Unit 1), ALAB-663, 14 NRC 1140, 1146 (1981).

OPERATING LICENSE: TECHNICAL SPECIFICATIONS (STATUS)

Technical specifications for a nuclear facility are part of the operating license for the facility and are legally binding. *See Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 272-73 (1979).

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

In order to prevail on a motion to reopen the record, the proponent of the motion must show that the motion is timely, that it addresses a significant issue, and that it may alter the outcome. *Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-598, 11 NRC 876, 879 (1980).

EVIDENCE: ADMISSIBILITY (ACCIDENT REPORTS)

Documents such as a Congressional report on an accident generally must be proffered in a timely manner and sponsored by a witness in order to be admitted into evidence. *See Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-669, 15 NRC 453, 477 (1982).

LICENSING BOARDS: RESPONSIBILITIES (RESOLUTION OF ISSUES IN SPECIAL PROCEEDINGS)

In a special proceeding, where the Commission has specified the issues for hearing, a licensing board is obliged to resolve all such issues, even in the absence of active participation by intervenors.

ADJUDICATORY BOARDS: DELEGATED AUTHORITY (RELATION TO NRC STAFF)

NRC adjudicatory boards lack the authority to direct the staff in the performance of its duties. *See Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), CLI-80-12, 11 NRC 514, 516 (1980).

LICENSING BOARDS: DISCRETION IN MANAGING PROCEEDINGS (CALLING OF NON-EXPERT WITNESSES)

In the proper circumstances, an adjudicatory board is empowered to call and examine witnesses of whom the board is aware and who are likely to have (factual) information necessary for the proper resolution of the issues before it. *See generally* 10 C.F.R. § 2.718. *Compare* Summer, *supra*, 14 NRC at 1152-57.

ENFORCEMENT ACTIONS: EFFECT ON LICENSING ACTIONS

Because the independence of adjudicatory boards is essential to preserve the integrity of the hearing process, the board in an operating license adjudication is not bound by a decision of the Director of Inspection and Enforcement in an enforcement action. *South Texas, supra*, 12 NRC at 289.

ATOMIC ENERGY ACT: LICENSEE CHARACTER (CORPORATE PHILOSOPHY AND MANAGEMENT)

Replacing corporate *managers* can result in a change in overall corporate philosophy and *management*.

ADJUDICATORY PROCEEDINGS: FINANCIAL ASSISTANCE TO INTERVENORS

Under appropriations legislation for the NRC for fiscal years 1980 and 1981, the Commission is precluded from providing financial assistance to intervenors. *See Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit No. 1), ALAB-625, 13 NRC 13, 14-15 (1981).

TECHNICAL ISSUES DISCUSSED

Training and testing of licensed and non-licensed personnel;
Staffing and work hours;
Maintenance (deferral, record keeping, priorities, overtime);
Corporate Organization (command and administrative structure, financial/technical relationship).

APPEARANCES

Marjorie M. Aamodt and **Norman O. Aamodt,** Coatesville, Pennsylvania, intervenors *pro se.*

Louise Bradford and **Joanne Doroshow,** Harrisburg, Pennsylvania, for intervenor Three Mile Island Alert, Inc.

Ellyn R. Weiss, Washington, D.C., for intervenor Union of Concerned Scientists.

Ernest L. Blake, Jr. (with whom **George F. Trowbridge, Bonnie S. Gottlieb,** and **Deborah B. Bauser** were on the brief), Washington, D.C., for licensee Metropolitan Edison Company.

Jack R. Goldberg for the Nuclear Regulatory Commission staff.

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DECISION

In several previous decisions, we addressed the emergency planning, environmental, and design issues raised in this special proceeding. *See* ALAB-697, 16 NRC 1265 (1982); ALAB-698, 16 NRC 1290 (1982), *modified,* CLI-83-7, 17 NRC 336, and *rev'd in part,* CLI-83-22, 18 NRC 299 (1983); ALAB-705, 16 NRC 1733 (1982), *petition for review pending sub nom. Union of Concerned Scientists v. NRC,* No. 83-1503 (D.C. Cir. filed May 9, 1983); ALAB-729, 17 NRC 814 (1983), *review pending,* Commission Order of January 27, 1984 (unpublished). We now turn to the only matter remaining for this Appeal Board's consideration, the ability of licensee's management to operate Unit 1 of the Three Mile Island facility (TMI-1) in a competent, responsible, and safe manner.

Three intervenor groups — Marjorie and Norman Aamodt, Three Mile Island Alert, Inc. (TMIA), and the Union of Concerned Scientists (UCS)[1] — appeal the Licensing Board's decisions concluding that licen-

[1] UCS, although an active litigant in other phases of this proceeding, participated to only a limited extent in the management phase. No party, however, has objected to its appeal and thus we have given full consideration to the essentially legal arguments advanced in its brief.

The Commonwealth of Pennsylvania originally appealed from the Licensing Board's decisions but later withdrew after entering a stipulation with licensee. In an unpublished order issued December 22, 1983, we approved this action.

see has demonstrated its managerial capability and technical resources to operate TMI-1 in a safe manner. *See* LBP-81-32, 14 NRC 381 (1981), and LBP-82-56, 16 NRC 281 (1982). Each argues, though on somewhat different grounds, that the Board erred in authorizing restart. Licensee and the NRC staff support affirmance of the Licensing Board's decisions. As we explain below, the present state of the record in several areas does not permit us to make an ultimate judgment on the licensee's competence. Accordingly, we remand this proceeding to the Licensing Board for further hearing, primarily on the adequacy of licensee's training program. In addition, we grant the Aamodts' motion to reopen the record for a hearing on the allegations of falsification of leak rate records at TMI-1.

I. BACKGROUND

This proceeding began approximately five years ago when, in response to the March 1979 accident at Unit 2 of the TMI facility, the Commission ordered a hearing to be conducted prior to restart of TMI-1.[2] The Commission found that "the unique circumstances at TMI require that [certain] safety concerns . . . be resolved prior to restart." CLI-79-8, 10 NRC 141, 143 (1979). Among them were "questions about the management capabilities and technical resources of [licensee], including the impact of the Unit 2 accident on these." *Ibid.* The Commission also identified specific short-term actions that licensee was to be required to complete before it could safely resume operation. Two are relevant to this phase of the proceeding:

> 1.(e) [The licensee shall] [a]ugment the retraining of all Reactor Operators and Senior Reactor Operators assigned to the control room including training in the areas of natural circulation and small break loss of coolant accidents including revised procedures and the TMI-2 accident. All operators will also receive training at the B&W [Babcock & Wilcox] simulator on the TMI-2 accident and the licensee will conduct a 100 percent reexamination of all operators in these areas. NRC will administer complete examinations to all licensed personnel in accordance with 10 CFR 55.20-23.
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> * * *

[2] At the time of the accident, TMI-1 had been shut down for refueling. It has remained in cold shutdown ever since. Although the Commission has delegated to us the initial responsibility for disposing of appeals on the merits, it has retained authority to decide if and when the plant should actually be permitted to restart. CLI-81-19, 14 NRC 304, 305-06 (1981). That determination is now scheduled for June 1984. Memorandum for the Parties from S.J. Chilk, Secretary to the Commission, "Tentative Commission Views and Plan for Resolution of Management Integrity Issues Prior to Restart" (January 27, 1984), at 3.

> 6. The licensee shall demonstrate [its] managerial capability and resources to operate Unit 1 while maintaining Unit 2 in a safe configuration and carrying out planned decontamination and/or restoration activities. Issues to be addressed include the adequacy of groups providing safety review and operational advice, the management and technical capability and training of operations staff, the adequacy of the operational Quality Assurance program and the facility procedures, and the capability of important support organizations such as Health Physics and Plant Maintenance.

Id. at 144-45. *See id.* at 146, 149. The Licensing Board presiding over the hearing was to consider, among other things, whether these short-term actions "are necessary and sufficient to provide reasonable assurance that [TMI-1] can be operated without endangering the health and safety of the public, and should be required before resumption of operation should be permitted." *Id.* at 148.

The Commission later provided more guidance to the Board concerning the hearing on these "management competence" issues. It directed the Board to examine the following broad issues:

> (1) whether Metropolitan Edison's management is sufficiently staffed, has sufficient resources and is appropriately organized to operate Unit 1 safely; (2) whether facts revealed by the accident at Three Mile Island Unit 2 present questions concerning management competence which must be resolved before Metropolitan Edison can be found competent to operate Unit 1 safely; and (3) whether Metropolitan Edison is capable of operating Unit 1 safely while simultaneously conducting the clean-up operation at Unit 2.

CLI-80-5, 11 NRC 408, 408 (1980).[3] The Commission also refined these into 13 "specific issues" warranting the Board's attention. (These include issues that relate to corporate structure, maintenance, safety review, and in-house technical resources; all 13 are set forth in Appendix A to this opinion.) *Id.* at 408-09.

Numerous parties intervened and participated in the extensive hearings on management issues before the Licensing Board. Shortly before the Board was to issue its partial initial decision on this subject, however, the NRC staff notified it of cheating and other irregularities in connection with the April 1981 reactor operator examinations that the Commission had ordered. Consequently, the Board issued its decision in August 1981 but retained jurisdiction to consider how the outcome of

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[3] In CLI-81-17, 14 NRC 299 (1981), the Commission authorized the formal transfer of the operating license for TMI-1 from Metropolitan Edison Company to the newly formed General Public Utilities subsidiary, GPU Nuclear Corporation (GPUN). It also instructed the Licensing Board to consider the management competence of GPUN, rather than that of Metropolitan Edison.

the then-pending cheating investigation might affect its conclusions on management competence. The Board explained:

> The issues of Licensee's management integrity, the quality of its operating personnel, its ability to staff the facility adequately, its training and testing program, and the NRC process by which the operators would be tested and licensed, are all important issues considered in this partial decision. We will consider carefully the effect on such issues of the anticipated NRC Staff report, any further action by the Licensee and Staff in light of the report, including whether there will be a reexamination of individuals who took the April examination, and the advice of the parties, to determine whether further actions by this Board appear warranted.

LBP-81-32, *supra*, 14 NRC at 403 (¶ 45).[4] *See id.* at 454 n.18, 582 n.63, 583 (¶¶ 204, 584, 585). In all other respects, though, the Board ruled in licensee's favor on the various management issues specified by the Commission. It thus concluded that licensee has demonstrated its "managerial capability and technical resources to operate Unit 1 while maintaining Unit 2 in a safe configuration and carrying out planned decontamination and/or restoration activities." *Id.* at 582 (¶ 584). It also found the short-term actions necessary and sufficient for resumption of operation. *Ibid.* (¶ 584).

Without the objection of any party, the Licensing Board formally reopened the record on the cheating matter less than a month later and appointed a Special Master to hear the evidence and render an advisory report. ASLB Memorandum and Order of September 14, 1981 (unpublished). *See* 10 C.F.R. § 2.722.[5] The Board defined the broad issue to be heard in the reopened proceeding as

> the effect of the information on cheating in the NRC April examination on the management issues considered or left open in the Partial Initial Decision, recognizing that, depending on the facts, the possible nexus of the cheating incident in the NRC examination goes beyond the cheating by two particular individuals and may involve the issues of Licensee's management integrity, the quality of its operating personnel, its ability to staff the facility adequately, its training and testing program, and the NRC process by which the operators would be tested and licensed.

ASLB Memorandum and Order of October 14, 1981 (unpublished), at 2. It also gave examples of numerous specific questions to be addressed. (These are set forth in Appendix B.) The Special Master thus held further hearings and in accordance with the Board's instructions issued a

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[4] For ease of reference, we cite to the paragraph as well as page references of the Board's various decisions.

[5] Because of the reopening, we deferred briefing of any appeals from the management partial initial decision.

report reflecting his conclusions and recommendations. *See* LBP-82-34B, 15 NRC 918 (1982). The Special Master essentially concluded that although licensee's upper management did not encourage, condone, participate in, or know of the cheating at the time it occurred, it was responsible for the negative attitude among its staff toward the NRC examination process that led to the cheating and similar incidents revealed in the record. *Id.* at 1053-54 (¶ 338).

The Licensing Board adopted the evidentiary record developed before the Special Master and most of his conclusions. It differed somewhat, however, as to the cause of the breakdown in licensee's training and testing program. According to the Licensing Board, this was attributable to a failure (1) to define clearly the portion of licensee's management with responsibility for the program, and (2) to apply the principles of quality assurance and quality control to the training and testing program. LBP-82-56, *supra,* 16 NRC at 300 (¶ 2082). The Board nevertheless concluded that these weaknesses did not undermine its earlier findings in favor of restart. *Id.* at 301 (¶ 2089). It did, however, impose several conditions on restart that basically require future auditing of licensee's training and testing. *Id.* at 384 (¶ 2421).

Briefing of the intervenors' appeals from the Licensing Board's two management phase decisions followed. But by the time briefing was completed, our consideration of the design phase was well under way and required a reopening of that part of the record for additional evidence. *See* ALAB-708, 16 NRC 1770 (1982). We thus deferred consideration of the instant appeals. Appeal Board Memorandum of January 19, 1983 (unpublished). At about the same time, information assertedly bearing on management competence issues was coming to light during the Commission's review of the now-settled civil lawsuit by licensee's parent corporation against the manufacturer of the TMI reactors, Babcock & Wilcox (B&W). *See General Public Utilities Corp. v. Babcock & Wilcox Co.,* No. 80-CIV-1683 (S.D.N.Y. filed March 25, 1980) ["*B&W* trial"]. By the spring of 1983, we received both the Aamodts' and TMIA's motions to reopen the record, based in part on the *B&W* trial record and in part on other developments related to management issues. In ALAB-738, 18 NRC 177 (1983), we ruled on those motions as well as a third one filed earlier by the Aamodts. We denied the motions except to the extent they sought reopening on allegations of pre-accident falsification of leak rate data at TMI-2. We remanded that issue to the Licensing Board for hearing, but the Commission has indefinitely stayed that proceeding. Commission Order of October 7, 1983 (unpublished).

As is often the case with complex litigation extending over a long period of time, events occur that appear to overtake, or at least to affect,

the matters at hand. Such is the case here. In fulfillment of their well-established obligation to apprise us of "significant new information," the parties have submitted an enormous number of documents, reports, etc. *See Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 & 2), ALAB-143, 6 AEC 623, 625-26 (1973). This information is not evidence of record.[6] On the other hand, we cannot be so myopic as to ignore either the very existence of ongoing investigations into matters relevant to management competence, or important matters of fact about which there can be no dispute (*e.g.*, personnel and staff changes). In this opinion, we attempt to achieve a balance between these competing factors. As a result, we dispose of some issues that appear amenable to final resolution, identify others that clearly require record supplementation, and note still others that are subject to ongoing investigations.

II. STANDARDS

The nebulous concept of "management competence" has assumed different facets as developments have unfolded during the course of this proceeding. What began as an inquiry into primarily licensee's technical capability and resources has evolved — as a necessary consequence of those developments — into a search for answers to questions concerning the "integrity" of licensee's management as well.[7] In its order providing guidance to the Licensing Board on the specific management issues the Board was to consider, the Commission acknowledged that it had no standards for nuclear power plant management and operation. Nevertheless, it directed the Board to "apply its own judgment in developing the record and forming its conclusions on these questions." CLI-80-5, *supra*, 11 NRC at 409-10.

The Board, however, was not left to operate entirely within a regulatory vacuum. Section 103b of the Atomic Energy Act, 42 U.S.C. § 2133b, requires licensees to comply with Commission requirements for the protection of the public health and safety. In addition, section

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[6] We have also been served with copies of myriad pleadings solicited by the Commission to aid it in its consideration of actual "restart." *See* note 2, *supra*. Time, lack of resources, and — most important — the limitations of formal adjudication compel us to confine ourselves to the adjudicatory record and materials addressed specifically to us.

[7] In this connection, it should be kept in mind that the purpose of this special proceeding is not to explore what happened during the TMI-2 accident, or even to litigate the overall safety of TMI-1. Rather, given the questions raised by that accident, the focus is on licensee's ability to operate TMI-1 safely in the future, should restart be authorized. *See* CLI-84-3, 19 NRC 555, 560 (1984).

182a, 42 U.S.C. § 2232a, permits the Commission to consider a licensee's "character."[8] Presumably, character is what the Licensing Board meant by its references to licensee's "management integrity." *See, e.g.*, LBP-81-32, *supra*, 14 NRC at 403 (¶ 45).[9]

The Atomic Energy Act, however, does not define "character," and the legislative history is unenlightening as to Congress's intent.[10] Evaluation of character always involves consideration of largely subjective factors. In the corporate context, with the interplay of individual and collective actors, that undertaking proves even harder to tackle. But not long after the Commission identified a number of management-related issues to be resolved here, in another case it spoke in general, yet forceful, terms on the matter of applicant/licensee competence and character:

> Either abdication of responsibility or abdication of knowledge, whether at the construction or operating phase, could form an independent and sufficient basis for revoking a license or denying a license application on grounds of lack of competence (i.e., technical) or character qualification on the part of the licensee or license applicant.

Houston Lighting and Power Co. (South Texas Project, Units 1 and 2), CLI-80-32, 12 NRC 281, 291 (1980). *See also Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-83-2, 17 NRC 69, 70 (1983) (mere planning to withhold material information, *e.g.*, is evidence of "bad character" and could warrant adverse licensing action); *id.*, ALAB-106, 6 AEC 182, 184 (1973) ("managerial attitude," as well as technical qualification, is relevant to inquiry into applicant's quality assurance program).

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[8] Section 182a specifically refers to an *applicant's* character. But that section also provides that "[t]he Commission may at any time after the filing of the original application, and before the expiration of the license, require further written statements in order to enable the Commission to determine whether the application should be granted or denied or whether a license should be modified or revoked." 42 U.S.C. § 2232a.

[9] "Character" is defined as "reputation esp. when good," and "a composite of good moral qualities typically of moral excellence and firmness blended with resolution, self-discipline, high ethics, force, and judgment." *Webster's Third New International Dictionary 376* (unabridged ed. 1971). "Integrity" is "an uncompromising adherence to a code of moral, artistic, or other values: utter sincerity, honesty, and candor: avoidance of deception, expediency, artificiality, or shallowness of any kind." *Id.* at 1174. *The Original Roget's Thesaurus* §§ 929, 933 (1962) includes "character" and "integrity" as synonyms for "probity" and "virtue."

[10] Reference to an applicant's character appeared in the original version of section 182 in what ultimately became the Atomic Energy Act of 1954. *See* Joint Comm. on Atomic Energy, A Proposed Act to Amend the Atomic Energy Act of 1946, 83d Cong., 2d Sess. (1954). We have been unable to locate in the pertinent House and Senate Reports, Hearings, and Debates more than an occasional passing remark concerning the Commission's authority to consider character. *See, e.g., Hearings Before the Joint Comm. on Atomic Energy on S. 3323 and H.R. 8862, to Amend the Atomic Energy Act of 1946*, 83d Cong., 2d Sess. 1131 (1954) (excerpts from an analysis prepared upon behalf of the Federal Power Commission).

We also recognize that a licensee of a nuclear power plant has a great responsibility to the public. The view expressed almost two decades ago by the court in *Hamlin Testing Laboratories, Inc. v. AEC*, 357 F.2d 632, 638 (6th Cir. 1966), is no less apt today: "We can imagine no area requiring stricter adherence to rules and regulations than that dealing with radioactive materials, from the viewpoint of both public health and national security." A licensee's responsibilities are increased by the Commission's heavy dependence on the licensee for accurate and timely information about the facility and its operation. *Petition for Emergency and Remedial Action*, CLI-78-6, 7 NRC 400, 418-19 (1978).

Thus, while lacking precise standards against which to measure licensee's conduct, the foregoing views provide valuable aid for grasping the slippery concept of management competence. They serve as well as guideposts for our appellate review of the Licensing Board's decisions.

III. TRAINING

Foremost among the matters warranting our consideration is the broad category characterized by the Licensing Board as "training." Encompassed within this topic are issues concerning the adequacy of the testing procedures to measure training effectiveness and the related cheating matter. The Commission gave training special emphasis in the 1979 order instituting this proceeding. *See* CLI-79-8, *supra*, 10 NRC at 144-45. The Licensing Board as well stressed the important relationship between training and operator competence. *See* LBP-81-59, 14 NRC 1211, 1709-10 (¶¶ 2015-2018) (1981). The substantial part of the record devoted to training underscores its role in assuring the safe operation of TMI-1. Training thus demands our considerable attention here on appeal.

In its first partial initial decision, the Licensing Board devoted substantial discussion to the TMI-1 training program for both licensed and nonlicensed personnel. *See* LBP-81-32, *supra*, 14 NRC at 441-79 (¶¶ 163-276). It described the program, organization, and personnel devoted to the facility's training needs, noting that employees spend one of every six weeks in training. *Id.* at 443-53 (¶¶ 169-200). The Board also discussed the significant changes in licensee's training program since the TMI-2 accident, particularly the Operator Accelerated Retraining Program (OARP). Licensee developed the OARP to satisfy the Commission's short-term requirement (1.(e)) to augment operator retraining. *Id.* at 451-55 (¶¶ 196-207). *See* CLI-79-8, *supra*, 10 NRC at 144. The Licensing Board reviewed the testimony and other evidence licensee adduced in support of its improved training program, as well as that of the

NRC staff and Marjorie Aamodt. The Aamodts' contention 2 on training was somewhat vague and principally focused on the need for independent certification that TMI-1 personnel can perform their jobs in a safe manner.[11] The Board nonetheless addressed the discrete points pressed by the Aamodts at the hearing -- *i.e.*, human factors engineering (control room design), simulator training, the adequacy of licensee's training and testing program, operator stress, operator attitude, and the adequacy of NRC testing. LBP-81-32, *supra*, 14 NRC at 465-78 (¶¶ 243-275). The Board concluded that licensee's training program is "comprehensive and acceptable" and in compliance with the Commission's orders. *Id.* at 478-79 (¶ 276).[12] The Board, however, expressly qualified its findings with regard to operator testing and licensing as a result of the then-recent revelations about cheating on the NRC operator examinations, and it promised to reconsider them after further investigation. *Id.* at 454 n.18, 479 n.24, 582 n.63 (¶¶ 204, 276, 584).

After considering the evidentiary record, the Special Master's report, and the parties' comments in connection with the reopened hearing on cheating, the Licensing Board

> remain[ed] convinced that the evidence supported the conclusion that Licensee's training program was well designed to train qualified operators and that there was a rational plan to implement the program. As we noted above, on the one occasion when the integrity of the examination procedures was questioned, the Board reasonably inferred that suitable action would be taken, *i.e.*, requalification tests would be "closed-book".

LBP-82-56, *supra*, 16 NRC at 379 (¶ 2399). Although the Board identified some weaknesses in the program, it did not find the operators to be incompetent. *Id.* at 300, 381 (¶¶ 2085, 2410). Rather, the Board attributed these shortcomings to failures in quality assurance and quality control. *Id.* at 300, 379, 381 (¶¶ 2084, 2401, 2410). As a remedy for this problem, the Board imposed five conditions on restart, requiring,

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[11] The Aamodts' contention 2 states:

> It is contended that TMI-1 should not open until the performance of licensee technicians and management can be demonstrated to be upgraded as certified by an independent engineering firm. This upgrading should include 100% test performance of job description with provision for retraining and retest, or discharge of those who cannot consistently and confidently master all necessary information for safe conduct of their job description under all anticipated critical situations as well as routine situations.

LBP-81-32, *supra*, 14 NRC at 442 (¶ 165).

[12] The Board also reviewed numerous licensee commitments in the area of operator training, imposing many as license conditions. *Id.* at 567-71, 578-82 (¶¶ 538-555, 583).

among other things, a two-year post-restart audit of licensee's training and testing program. *Id.* at 384 (¶ 2421).[13]

We now turn to the numerous arguments raised on appeal that concern the broad topic of training.

A. Licensee's Consultants

On appeal, the Aamodts first challenge both the "independence" and the qualifications of the consultants who reviewed licensee's training program and testified on its behalf. In addition to several of its own employees, licensee presented a panel of three consultants whom it asked to evaluate the adequacy of the upgraded training program. These three witnesses were Dr. Eric Gardner, an educational psychologist; Dr. Julien Christensen, an engineering psychologist and human factors specialist; and Mr. Frank Kelly, a nuclear engineer and president of PQS Corporation, a firm that acts as a consultant to power plants on training and staffing. Licensee also introduced into evidence the June 1980 report of the OARP Review Committee ("OARP Report"). *See* Lic. Exh. 27. Dr. Robert E. Uhrig, an official of Florida Power & Light Company, chaired the committee, which included as members Drs. Gardner and Christensen, as well as Dr. William R. Kimel, Dean of the College of Engineering at the University of Missouri, and Mr. Richard J. Marzec, a training official for Duke Power Company.

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[13] The five conditions imposed are:

(1) There shall be a two-year probationary period during which the Licensee's qualification and requalification testing and training program shall be subjected to an in-depth audit by independent auditors, approved by the Director of NRR, such auditors to have had no role in the TMI-1 restart proceedings.

(2) Licensee shall establish criteria for qualifications of training instructors to ensure a high level of competence in instruction, including knowledge of subjects taught, skill in presentation of knowledge, and preparation, administration, and evaluation of examinations.

(3) Licensee shall develop and implement an internal auditing procedure, based on unscheduled ("surprise") direct observation of the training and testing program at the point of delivery, such audits to be conducted by the Manager of Training and the Supervisor of Operator Training and not delegated.

(4) Licensee shall develop and implement a procedure for routine sampling and review of examination answers for evidence of cheating, using a review process approved by the NRC Staff.

(5) Until further order in this proceeding, any participation of Gary P. Miller in the start-up, testing or operation of TMI-1 shall be under the direct supervision of an appropriately qualified official of GPU Nuclear Corporation.

LBP-82-56, *supra*, 16 NRC at 384 (¶ 2421). The Board also sought to impose a $100,000 penalty on licensee "as a long-term remedy to provide reasonable assurance that TMI-1 can be operated without endangering the public health and safety." *Ibid.* (¶ 2420). In CLI-82-31, 16 NRC 1236 (1982), however, the Commission concluded that the Board had no jurisdiction to impose such a fine and referred the matter to the Office of Inspection and Enforcement. *See* CLI-83-20, 18 NRC 1 (1983).

The Aamodts' objection to characterizing these individuals as "independent" is baseless. None is an employee of licensee, and none has ever purported to be anything but a hired consultant. The latter fact of itself does not undermine the value of these individuals' testimony. *See Louisiana Power and Light Co.* (Waterford Steam Electric Station, Unit 3), ALAB-732, 17 NRC 1076, 1091 (1983).

Nor have the Aamodts successfully challenged the qualifications or testimony of licensee's consultants. We have reviewed each and find that both the witness panel and the OARP Review Committee are comprised of exceptionally well qualified persons from a range of disciplines (nuclear engineering, education, psychology, testing) most suitable to their task. *See* Gardner, fol. Tr. 12,409, at 2-4; Kelly, fol. Tr. 12,409, at 1, App. A; Christensen, fol. Tr. 12,409, at 1-3; Lic. Exh. 27, OARP Report, at 4-9. Understandably, no one witness or member of the OARP Review Committee is an expert in all of these areas. In this age of specialization, it would be rare indeed to find such a Renaissance man or woman. *See generally Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-379, 5 NRC 565, 569 (1977).[14] It is not surprising, then, that Dr. Gardner, an educational psychologist, told Mrs. Aamodt at the hearing that he was "not qualified" to respond to her question concerning the operators' "competen[ce] to operate the plant under all conditions." Tr. 12,628. The few other examples cited by the Aamodts of where these witnesses' testimony was "destroyed or weakened through cross-examination" are similarly without foundation. *See* Aamodt Brief (October 4, 1982) at 5-6. Further, the limited intervenor testimony presented did not damage that of licensee's witnesses. *See* Aamodt, fol. Tr. 12,931.

As for the Aamodts' complaint that the Licensing Board overlooked the more critical elements of the OARP Report, we believe that the Board could have elaborated more on the areas the Committee identified as needing improvement (*e.g.*, description of control room operator tasks, the training facility, instructor training, communication between management and staff). *See* LBP-81-32, *supra*, 14 NRC at 454 (¶ 203). *See also* Lic. Exh. 27, OARP Report, at 140, 141, 143, 146-47, 149. Nonetheless, it cannot be reasonably disputed that the overall conclusion of the OARP Review Committee, which took account of the weaknesses in the program, was strongly favorable, and the Board's decision fairly reflects that. *But see* pp. 1234-36, *infra*.

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[14] Brought to mind is John Kennedy's often paraphrased statement to a White House gathering of Nobel laureates that there had never been a greater collection of genius — with the possible exception of when Thomas Jefferson dined alone.

B. Cheating

Both TMIA and the Aamodts devote substantial portions of their arguments on appeal to the cheating incidents explored at the reopened hearing. They are primarily dissatisfied with the Licensing Board's treatment of allegations against several individuals, particularly where the Board's conclusions differ from those of the Special Master.[15] In intervenors' view, the Board should have deferred more to the Special Master's observations concerning witness demeanor and credibility.

Before turning to the individual areas on which intervenors disagree with the Licensing Board's conclusions, a brief synopsis of the cheating episode is in order. In July and August 1981, the Licensing Board received a series of Board Notifications from the NRC staff, informing it that cheating had occurred on the NRC Reactor Operator (RO) and Senior Reactor Operator (SRO) examinations in April 1981. The staff also noted that some sessions of the examinations had been unproctored for extended periods of time, and it concluded that reexamination was warranted. *See* BN-81-17 (July 28, 1981); BN-81-17B (August 7, 1981); BN-81-17C (August 14, 1981); BN-81-17D (August 17, 1981). The Licensing Board soon thereafter issued its already completed partial initial decision on management, but retained jurisdiction and reopened the hearing insofar as the cheating allegations were concerned. An extensive hearing was held before the Special Master, and the Licensing Board, after consideration of his findings, issued another partial initial decision on cheating alone.

At this stage, the following facts are essentially no longer in dispute. Two shift supervisors, O and W,[16] cheated extensively on licensee-administered examinations as well as the April 1981 NRC examinations. Their employment with licensee has been terminated. G and H, reactor operators, cheated on licensee-administered examinations. G is no longer employed by licensee. Letter from E.L. Blake to Appeal Board (October 7, 1982); App. Tr. 159. Pursuant to a stipulation between licensee and the Commonwealth of Pennsylvania (*see* note 1, *supra*), H will

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[15] Intervenors also complain about the "loose" testing procedures and the casual attitude of a number of operators as to what constitutes cheating. There is no real dispute that the administration of the April 1981 NRC examination and earlier licensee tests was lax. *See* LBP-82-56, *supra*, 16 NRC at 357 (¶ 2324). In fact, the Commission has issued a Notice of Violation imposing a $40,000 civil penalty for licensee's failure to implement its Operator Accelerated Retraining Program properly. CLI-83-20, *supra*, 18 NRC 1. What is relevant here, however, is whether there can be confidence that future training and testing procedures will not be so compromised. We address that issue below at pp. 1232-39.

[16] In order to protect their identities, many of the persons involved in the cheating incidents have been referred to throughout this proceeding by letter designations, per agreement of the parties and at the discretion of the Special Master. Our continuation of this practice should not be construed as an endorsement of it.

never again operate TMI-1 and is now assigned to the TMI-2 Waste Shipping Department as an engineering associate. Commonwealth of Pennsylvania Motion to Withdraw Appeal (July 8, 1983), Stipulation of Withdrawal (July 6, 1983) at 2; App. Tr. 221.[17] A number of other licensee employees also were implicated in various cheating incidents. While the Special Master was able to reach conclusions as to wrongdoing in some instances, the Licensing Board was, in some cases, unable either to reach the same conclusions or to impose sanctions for conduct it did, in fact, find improper. It is the Licensing Board's action in this regard that is the principal source of intervenors' complaints on appeal concerning the cheating incidents.

1. Michael Ross

We devote our attention first to the charges involving Michael Ross, Manager of Plant Operations at TMI-1. The Licensing Board rightly described him as possibly "the most important person on the TMI-1 operating team as far as the public health and safety is concerned." LBP-81-32, *supra*, 14 NRC at 439 (¶ 155). He is the highest level of management directly implicated in cheating and, thus, it is essential that all questions concerning his conduct be resolved satisfactorily.[18]

The allegations against Ross are twofold but arise from the same set of circumstances. He is accused of improperly influencing the NRC examiners to broaden the answer keys for the April 1981 NRC licensing test so as to increase the operators' scores. At the same time, he is said to have kept, intentionally, the NRC proctor away from one of the examination rooms. The Special Master found both allegations to be true. LBP-82-34B, *supra*, 15 NRC at 976, 988 (¶¶ 152, 178).

First, the Special Master acknowledged that it is the NRC's standard practice to have the senior members of a facility's staff review the questions and answers for NRC licensing examinations. This is done to assure that the questions and answers are still valid for the plant and that the questions can be clearly understood. The review is done during

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[17] In these circumstances, it is not necessary for us to address TMIA's argument that G and H should be removed from licensed duties.

[18] This is so despite the fact that none of the intervenors filed proposed findings on the Ross matter. *See* LBP-82-56, *supra*, 16 NRC at 326 n.236 (¶ 2194). In this circumstance, they may be deemed to be in default and to have waived any further right to pursue the issue. *See* LBP-81-32, *supra*, 14 NRC at 399 (¶ 35); 10 C.F.R. § 2.754. *See also Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-709, 17 NRC 17, 23 (1983).

Nevertheless, we view this matter with great concern. As an indication of that, we asked the parties to devote special attention to the charges against Ross during oral argument of this appeal. Appeal Board Memorandum and Order of December 22, 1983 (unpublished), at 5.

the examination to avoid premature disclosure of answers, while still leaving time to correct any errors in it. *See* Staff Exh. 29, ES-201 (rev. 2, 1969), at 3. On April 23 and 24, 1981, Ross and two of licensee's training instructors, Nelson Brown and Dennis Boltz, met with Bruce Wilson, the NRC examiner and proctor, to review the answer key for the "A" examination (given on April 21 and 22) and the questions and answers for the "B" examination then in progress. The unusual aspect of this review was that Ross himself had taken the "A" examination because of the Commission's requirement that *all* licensed personnel be retested. *See* CLI-79-8, *supra*, 10 NRC at 144. It was thus unavoidable that at least one examinee would also have to be a reviewer. *See* LBP-82-34B, *supra*, 15 NRC at 970-72 (¶¶ 137-141).[19]

The Special Master, however, relied heavily on the testimony of YY, a former TMI-1 employee who had reported an incident involving Ross to the NRC's Office of Inspection and Enforcement (I&E) in September 1981. YY alleged that on April 23 or 24, Ross

> appeared to be in a very happy — almost ecstatic — mood and was talking to the shift supervisor. . . . [Ross] told how he had met with one of the NRC proctors in BB's office to go over the RO/SRO exams. He said that he had gotten the NRC to "expand" the answer key so as to give the examinees more latitude in their answers and also that he had kept the proctor out of the room for a very long period of time. The inference I [YY] drew was that by both actions he had made it easier for the people taking the tests.

Staff Exh. 27, Encl. 1.[20] YY added his belief that Ross "had meant what he said" and was not "beyond doing something such as purposely keeping the NRC proctor out of the room." *Ibid.* He also stated, however, that Ross could have been "bragging." *Id.* at 7.

The Special Master called YY to testify at the hearing. YY essentially repeated the charges against Ross. Tr. 26,011, 26,015-16. The Special Master found other evidence of Ross's comments in statements to NRC investigators by GG, KK, and RR. LBP-82-34B, *supra*, 15 NRC at 972-73 (¶ 143). Ross testified that he could not remember specifically, but that he probably made statements similar to those YY attributed to him. He added, however, that by such remarks he would have meant the answer keys were adjusted to correspond better with the operators' training and that his intent in making the remarks was to increase low

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[19] So that there could be some review of the "A" examination while it was in progress on April 21-22, licensee provided two members of its staff and an outside training consultant. None, however, was a licensed operator with "hands-on" knowledge of the day-to-day operation of the plant. *See* LBP-82-34B, *supra*, 15 NRC at 971 (¶ 139).

[20] Ross is referred to in this statement and other testimony as EE, but did not seek anonymity.

operator morale. *Id.* at 973 (¶ 144). *See* Tr. 24,331-32, 24,334-35. But the Special Master found Ross's testimony "not credible," citing several discrepancies in his statements. LBP-82-34B, *supra,* 15 NRC at 974-75 (¶ 147).[21] He also discounted the somewhat more favorable testimony of Bruce Wilson because Wilson had an interest in not appearing as though Ross had duped him. *Id.* at 975-76 (¶ 150). On the other hand, the Special Master found YY's testimony "clear" and his demeanor "completely forthright," while finding Ross's demeanor "less than forthright." *Id.* at 976 (¶ 151).

The Special Master also considered a sampling of 12 changes — about one-fourth the total number — made to the answer key of the "A" examination. He found many changes correct and necessary, except for two, where "[t]he good faith of the reviewers is at issue." *Id.* at 987 (¶ 177). In those two instances, the Special Master was especially influenced by the fact that the reviewers (Ross, Brown, and Boltz) were about the only examinees to benefit from the proposed changes. *Ibid.* (¶ 177). This, coupled with the Special Master's negative findings on Ross's credibility, led to his conclusion that Ross acted improperly, as alleged by YY. *Id.* at 987-88 (¶ 178).

The Licensing Board disagreed, emphasizing a number of factors. LBP-82-56, *supra,* 16 NRC at 326, 327 (¶¶ 2195, 2199). First, the occasion for Ross and his colleagues to review the examination with Wilson was not of Ross's making: it was the product of both the ordinary NRC practice of having senior plant personnel review its examinations, and the extraordinary requirement that all operators be retested. *Id.* at 326-27 (¶ 2198). Second, the Board found Ross's statement, even as recalled by YY, "equivocal" — *i.e.,* "it could mean that Mr. Ross influenced the NRC to expand the answer keys accurately to fairly provide more latitude and that this process took a very long time." *Id.* at 327 (¶ 2201). Third, the Board found YY's own statements and the surrounding circumstances even more equivocal. *Id.* at 327-29 (¶¶ 2201-2205). Fourth, the Board stressed that GG, KK, and RR inferred from Ross's statements that he had *fairly* broadened the answer keys. *Id.* at 329 (¶ 2206). Fifth, although the Board conceded that Ross's statements were sometimes uncertain, it found the more important discrepancies noted by the Special Master (*see* note 21, *supra*) explained by other testimony and "Ross' tendency to limit his testimony to his definite

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[21] The discrepancies in Ross's testimony concerned the following: whether changes in the answer key were in fact made; how many changes were suggested; how much time had elapsed since the exam; how long it took for the review; and whether the exam was in fact being proctored during the review. *See* LBP-82-34B, *supra,* 15 NRC at 974-75 (¶ 147).

knowledge." *Id.* at 329-30 (¶¶ 2207-2209).[22] Sixth, the Board analyzed the two answers that the Special Master concluded Ross improperly sought to alter. As to one, the Board found the change recommended by Ross was just as likely to be correct as the NRC's original answer. As to the other, the Board concluded that the change was properly rejected but suggested in good faith by Ross and Boltz. *Id.* at 330-33 (¶¶ 2212-2224). In sum, the Board determined that the charges against Ross were unfounded. *Id.* at 333 (¶ 2225).

After conducting our own review of all of the testimony and evidence pertinent to this matter, we fully agree with the Licensing Board. That Board analyzed the record thoroughly and did not reach its favorable conclusion on Ross lightly.[23] Like the Licensing Board, we find that the statements attributed to Ross — which he has not denied making — are *on their face* benign. But when viewed with other evidence, the statements become amenable to an interpretation more plausible than that proffered by the Special Master.

For example, according to YY, Ross "said that he [Ross] had gotten the NRC to 'expand' the answer key so as to give the examinees more latitude in their answers." Staff Exh. 27, Encl. 1. At least three other employees, KK, GG, and RR, heard this comment. In statements (one of which was sworn) to the NRC investigators, these persons stated their impression that Ross had meant that the review resulted in more correct and fairer answers. Further, they viewed his comments as intended to reassure an already depressed and angry group of employees. *Id.* at 24, 26, 27-28, Encl. 6.[24] This is consistent with Ross's own testimony. *See* Tr. 24,331-32, 24,334-35. As for the changes in the answer key itself, by the Special Master's own reckoning, the great proportion of them were correct and necessary.[25] The Special Master appears to have overlooked, or at least unfairly minimized, this fact when he found Ross to have acted in bad faith. The need for such heavy reliance on facility

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[22] For instance, the Board noted that three NRC officials were available to proctor the "A" examination, which Ross took. Thus, Ross did not have reason to assume that the "B" examination was unproctored while he reviewed the exams with Wilson. LBP-82-56, *supra*, 16 NRC at 330 (¶ 2209).

[23] The Aamodts contend that the Board "lacked objectivity" because it had reached its own tentative conclusions about Ross independent of the Special Master's report. Aamodt Brief at 21. *See* LBP-82-56, *supra*, 16 NRC at 326 (¶ 2194). That argument, on its face, suggests just the contrary. In any event, we are convinced that the Board fully and fairly reviewed the record before reaching its conclusion. It even went so far as to issue its decision on the Ross issues in draft form, allowing the parties one more opportunity to comment. *Ibid.* (¶ 2195).

[24] The Special Master specifically called YY to testify, but did not call KK or RR in order to explore their statements further. GG testified but apparently was asked only a few questions about this incident by TMIA's representative. *See* Tr. 25,688-89.

[25] As for the two instances where the Special Master found the reviewers' attempts to have the answer key changed improper, we agree with the Licensing Board's analysis and contrary conclusion. *See* LBP-82-56, *supra*, 16 NRC at 330-33 (¶¶ 2212-2224).

personnel may well reveal serious deficiencies in the NRC's examination procedures. *See* pp. 1237-39, *infra*. But problems inherent in that program cannot and should not provide a basis for inferring bad faith on Ross's part.

With respect to Ross's statement — as attributed to him by YY — "that he had kept the proctor out of the room for a very long period of time," again, on its face, the statement is benign and in accordance with other testimony concerning the length of time the review took. Despite Ross's denial (Tr. 24,342-43), the Special Master concluded that Ross "obviously knew" that one of the examination rooms was unproctored for a long time. But the evidence on which he bases his conclusion shows only that *the NRC proctor* (Wilson) "obviously knew" the examination was unproctored. *See* LBP-82-34B, *supra*, 15 NRC at 975 (¶ 149). Apparently at no point did the Special Master or any party attempt to determine what Ross actually knew about this. For example, no one asked Wilson if, during all the hours spent with Ross, either had mentioned the unproctored status of the room. Wilson, in fact, indicated his belief that the reviewers had not intended to distract him. *See* Staff Exh. 27, Encl. 2 at 3-4. When one considers that it was NRC procedures and requirements that occasioned this situation in the first place (*see* pp. 1213-14, *supra*), the evidence on which the Special Master relies to conclude that Ross "obviously knew" all proctors were absent is thin indeed. We, like the Licensing Board, are not willing to make so broad a jump.

The Special Master also did not fully take account of the fact that YY's testimony, both at the hearing and to the NRC investigators, reflects his perceptions. That is, it largely recounts YY's "feelings" and inferences. To be sure, much testimony could be so characterized, inasmuch as what a witness *says* he saw or heard is often determined by what the witness *thinks* he saw or heard. But where the record permits it, triers of fact generally consider a witness's particularly perceptual testimony in context. Here, the Special Master failed to note several factors that may well have influenced YY's perceptions — *e.g.*, YY never took the licensing examination (Tr. 26,022); YY objected to Ross's apparently inconsistent attitude toward requisitioning office supplies (Tr. 26,009-10, 26,013-14, 26,020-21, 26,023); YY did not report his concerns to the NRC until some five months after the exam and after O and W were terminated; YY felt it was wrong for management (of which Ross was a part) to fire W for cheating (Tr. 26,018-19). None of these factors, of course, could provide a basis for discrediting YY's testimony. But they do supply the background detail to complete the picture of YY's total testimony. Moreover, because YY testified as to his

perceptions, his statements are not necessarily or totally inconsistent with the testimony and evidence of other witnesses. The Special Master did not have to pick and choose between YY and Ross, finding one truthful and one not.

The Special Master, however, presumably felt compelled to do so on the basis of YY's and Ross's demeanor. *See* LBP-82-34B, *supra*, 15 NRC at 976 (¶ 151). But having identified demeanor as a factor of decisional significance, the Special Master failed to elaborate on *why* YY's demeanor was "completely forthright" and Ross's was less so. *See ibid.* (¶ 151).[26] Contrary to intervenors' arguments, the Licensing Board did give "special weight" to the Special Master's direct observations of witness demeanor. LBP-82-56, *supra*, 16 NRC at 289 (¶ 2036). *Cf. Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), ALAB-355, 4 NRC 397, 404 (1976) ("where the credibility of evidence turns on the demeanor of a witness, [appeal board] give[s] the judgment of the trial board which saw and heard his testimony particularly great deference"). The Board noted, however, that "where [the Special Master's] conclusions are materially affected by witness demeanor, [it has] given especially careful consideration as to whether or not other, more objective credibility criteria are consistent with his conclusions." LBP-82-56, *supra*, 16 NRC at 289 (¶ 2036). Thus, in the case of Michael Ross, the Licensing Board found other more objective evidence at odds with the Special Master's demeanor findings and so concluded that Ross had not acted improperly. *Id.* at 325-33 (¶¶ 2192-2225). The Board's analysis is wholly in accord with judicial precedent. *See Millar v. FCC*, 707 F.2d 1530, 1539-40 (D.C. Cir. 1983) (demeanor evidence of little value where other testimony, documentary evidence, and common sense suggest contrary result); *Local 441, IBEW v. NLRB*, 510 F.2d 1274, 1276 (D.C. Cir. 1975) (providing it acknowledges and explains the basis of its disagreement, Labor Board may differ with administrative law judge's demeanor findings as a result of its own assessment of the probabilities of the situation). In these circumstances, and fortified by our own independent review of the record, we see no basis for disturbing the Licensing Board's conclusions about Michael Ross.

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[26] In contrast, the Special Master gave fuller explanations as to why he found certain of Ross's *testimony* "not credible." Demeanor, of course, is a more intangible concept and is based on one's observations of the witness. Thus, we recognize that it is more difficult — but not impossible — to articulate why a person's demeanor influences a factfinder's judgment one way or the other.

2. *Henry Shipman*

Henry Shipman is the plant operating engineer and principal assistant to Michael Ross. He also holds a senior reactor operator's license and thus took both licensee and NRC examinations in April 1981. By his own account, he provided an answer on one of those exams to an unidentified individual. The incident probably occurred during the NRC's "A" examination on April 21 or 22. Shipman had taken a break and, while at the coffee machine in the hallway, he was approached by someone who asked a question, which Shipman answered. He later realized that the question, which he could not identify, was probably on the exam. Although he could not identify the individual either, he assumed that he came from the smokers' room, because Shipman was in the nonsmokers' room and only one person from each room could take a break at the same time. Shipman first disclosed this incident during an interview with Henry Hukill (then, TMI-1 Vice President; now, Director of TMI-1) in the wake of the disclosure of the cheating by O and W. He also gave statements concerning this matter to NRC investigators and testified at the hearing before the Special Master.[27] After inquiring into the matter himself, the former president of GPU Nuclear, Robert Arnold, placed a letter of reprimand in Shipman's file. *See* LBP-82-34B, *supra*, 15 NRC at 954-55 (¶¶ 94-95); LBP-82-56, *supra*, 16 NRC at 313-14 (¶¶ 2139-2141).

The principal focus of this incident is on who asked Shipman the question at the coffee machine. Shipman has steadfastly maintained that he cannot recall who it was. The NRC investigators and the Special Master, however, concluded that Shipman is not being truthful. Tr. 25,368; LBP-82-34B, *supra*, 15 NRC at 956 (¶ 100). The suspicion is that he is protecting someone; that someone, perhaps still a TMI-1 employee, cheated. After reviewing the record, the Licensing Board tempered the Special Master's conclusion somewhat. In its view, the conclusion that Shipman is not truthful "is probably the best inference to be drawn," but it is not so convincing as to warrant removal or suspension of Shipman from his position at TMI-1. LBP-82-56, *supra*, 16 NRC at 314 (¶ 2144).

We essentially share the Special Master's and the NRC investigators' judgment that Shipman is not telling the truth in his asserted failure to recall who solicited the test answer from him. We find it virtually impossible to believe that he could recall the incident and where it occurred

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[27] In some testimony and documents, Shipman is referred to as FF, although he did not claim any right to confidentiality.

but not the principal player, or even any of his physical characteristics. *See* Tr. 23,986-87, 25,368-71.[28] This is especially so considering that there was not much room at the coffee stand, and that the list of possible persons who could have asked the question numbers only eight. Tr. 26,360; Lic. Exh. 83. Included among those individuals are shift foremen and training instructors — people with whom Shipman is presumably familiar. One would expect him to have been able at least to *exclude* some persons, thereby narrowing the field for the investigators. Moreover, according to Shipman's own sworn statement, his action likely resulted "from compassion for my co-worker. We are a very close-knit group." Staff Exh. 28, Encl. 3 at 6. It is hard to believe that one could have such strong feelings without being able to recall the beneficiary of them. In such circumstances, the most plausible inference to be drawn is that Shipman does recall who approached him but is indeed protecting him.[29]

Nonetheless, we do not agree with the Special Master's recommendation that licensee not be permitted to use Shipman in the operation of TMI-1 until he either names the unidentified questioner or provides a credible reason why he cannot do so. *See* LBP-82-34B, *supra*, 15 NRC at 1044-45 (¶ 315). For one thing, as the Licensing Board correctly noted, "[n]either will ever happen." LBP-82-56, *supra*, 16 NRC at 315 (¶ 2145). It is clear from the record that even the "quite persuasive" efforts of Hukill and the NRC investigators were not enough to elicit the questioner's identity from Shipman. *See* Tr. 25,373-74. Thus, it is extremely unlikely that the primary purpose of the Special Master's recommendation — identification of the unknown cheater — would ever be fulfilled.

Moreover, other more positive factors militate against additional sanctions. Shipman voluntarily — albeit not as promptly as he should have — came forward with the disclosure of this incident, a clear admission against his own self-interest. But for his statements, this incident would never have been revealed.[30] Shipman willingly testified in his own

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[28] As noted, Shipman could not recall what the question was, but when pressed at the hearing, he speculated as to what it could have been. Tr. 26,363-64.

[29] While disbelieving Shipman about his ability to remember who asked him for help, we find credible his description of the spontaneity of the situation that prompted him to supply the answer. *See* T 26,377.

[30] In this regard, the Licensing Board quite properly noted the "public interest in encouraging such disclosures." LBP-82-56, *supra*, 16 NRC at 314 (¶ 2144). In this scheme of regulation, so heavily and necessarily dependent upon self-policing, disclosure of *some* information about wrongdoing (or any type of problem) is more desirable than disclosure of *no* information. Indiscriminate imposition of draconian sanctions on those who come forward with important information would surely lead to the latter.

name and, as a consequence, has had his veracity publicly disputed.[31] He has been formally reprimanded, and Hukill has promised to terminate him for any similar incident in the future. Tr. 23,985-86. Finally, apparently this is the only incident in his career with licensee where his honesty and "capability to respond properly to unexpected events" have been questioned. Hukill, fol. Tr. 23,913, at 14-15; Tr. 23,989. In these circumstances, the formal reprimand is sufficient.[32]

3. Charles Husted

There are essentially two allegations with respect to Charles Husted — who, until recently, was a licensed operator training instructor. First, he allegedly solicited (but did not obtain) an answer to a question from P, a TMI-1 shift supervisor, during an unproctored session of the April 1981 NRC SRO licensing examination. Second, Husted was accused of failing to cooperate with NRC investigators inquiring into the overall cheating controversy.

On the first charge, despite much conflicting testimony and a determination that neither P nor Husted was credible, the Special Master found that Husted did solicit information from P concerning an exam question.[33] The Special Master also found that Husted, at least initially, had refused to cooperate with the NRC investigators. LBP-82-34B, *supra*, 15 NRC at 957-61 (¶¶ 101-111). As for sanctions, the Special Master suggested that Husted be reprimanded for soliciting the exam answer. For Husted's failure to cooperate with the NRC, the Special Master essentially recommended a sanction less than removal from licensed duties, inasmuch as he found no standard against which to measure Husted's conduct. *Id.* at 1045-46 (¶¶ 316-317).

The Licensing Board, however, found insufficient evidence to support the Special Master's conclusions about P's and Husted's credibility and, more important, his ultimate finding that Husted had asked P for the answer. But as for Husted's alleged failure to cooperate with the NRC investigators, the Board is in full agreement with the Special Master. Indeed, on that count, the Board found Husted's testimony "incredible" and lacking "seriousness and regret." LBP-82-56, *supra*, 16 NRC at 315-19 (¶¶ 2148-2166). In order to treat this "attitude" problem, the Board requires certain changes in licensee's training program, including

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[31] Mrs. Aamodt asked Shipman if he would be ostracized by his fellow workers, were he to reveal the questioner, and if this would influence his decision to talk. Shipman stated that being ostracized would be "insignificant" compared to what "this has been like so far." Tr. 26,389-90.

[32] *See* p. 1229, *infra*, concerning the adequacy of licensee's investigation of this matter.

[33] In some evidence, Husted is referred to as DD, but has not claimed any right to confidentiality.

(1) development of criteria for training instructors, and (2) an audit of the training program, as actually implemented. Although it imposes no direct sanction on Husted, the Board recommends that his performance receive particular attention in the audit. *Id.* at 320, 365, 384 (¶¶ 2168, 2347, 2421).

Developments subsequent to briefing of these appeals make it unnecessary for us to resolve the dispute between the Special Master and Board concerning Husted's alleged solicitation of an answer, or to determine if Husted should be removed from licensed duties. By stipulation with the Commonwealth of Pennsylvania (*see* pp. 1212-13, *supra*), licensee has agreed to the following.

> 2. Now and at any time in the future Licensee will not utilize Mr. [Husted] (whose attitude was criticized by the ASLB) to operate TMI-1 or to train operating license holders or trainees.
>
> 3. Licensee will direct that the ASLB-mandated training audit specifically evaluate Mr. [Husted's] performance and attitudes as an instructor and Licensee will comply with the findings in a timely and appropriate manner, but in no event would Mr. [Husted] be utilized for any function specified in paragraph 2, above. Prior to the audit Licensee will continue to monitor Mr. [Husted's] performance and assign work consistent with that performance.

Commonwealth Motion to Withdraw, Stipulation at 2. We have also been advised by licensee that Husted has been named Supervisor of Non-Licensed Operator Training. Letter from D.B. Bauser to Appeal Board (May 6, 1983) at 3. While, as noted, the stipulation has effectively mooted some issues as to Husted, his promotion to a supervisory position of such importance has surely raised another that we cannot ignore.

At the outset, we confirm that the record supports the conclusions of both the Special Master and Licensing Board about Husted's poor attitude toward his responsibilities — as reflected in his failure to cooperate with the NRC investigators. *See* Staff Exh. 26 at 39; Staff Exh. 27 at 16; Tr. 26,927-33.[34] The Licensing Board explains it quite well:

> By first refusing to answer fully the NRC examiners' question [Husted] raised suspicions where perhaps none would have arisen otherwise His testimony on the matter was not only unbelievable, but it gave the sense that he didn't care whether he was believed or not.
>
> . . . These factors are not exactly quantifiable but they add up to a conclusion that, if Mr. Husted is representative of the TMI-1 training departme .., his attitude may be

[34] Licensee conceded that Husted was flippant and did not appear to take this matter seriously. Licensee Proposed Findings (January 5, 1982) at 89.

> a partial explanation of why there was disrespect for the training program and the examinations. We would have expected Mr. Husted to shoulder at least part of the responsibility for the need perceived by O, W, G and H to cheat. We would expect him to be gravely concerned about the damage to his co-workers, his employer and the public's confidence in the operation of the unit caused by the cheating episodes and failure of his own training department to create a serious and organized environment during the training and quizzes. As a licensed operator instructor Mr. Husted may have the ability to impart accurate technical knowledge to his charges — the record is silent on this. But, from our evaluation of his contribution to the investigation and the reopened hearing, we question whether he is able, or if able, willing, to impart a sense of seriousness and responsibility to the TMI-1 operators.

LBP-82-56, *supra*, 16 NRC at 319 (¶¶ 2166-2167).

We must, however, part company with the Licensing Board on how it views the relationship of Husted's attitude toward his teaching responsibilities. The Board states:

> We have no evidence that the attitude we criticize is manifested in [Husted's] performance as a teacher but, as noted above, we fear that such is the case. But there is also the widely held view in the field of education that the attitude of a teacher is irrelevant to his or her competence. Mr. Husted does not have to love and respect the NRC to do his duties.

Id. at 319-20 (¶ 2168). This does not square with the Board's earlier finding that Husted's "attitude may be a partial explanation of why there was disrespect for the training program and the examinations." *Id.* at 319 (¶ 2167). Nor does the Board provide any support for what it terms "the widely held view in the field of education that the attitude of a teacher is irrelevant to his or her competence." *Id.* at 320 (¶ 2168). Such a view would be valid only if the Board defines "competence" so narrowly as to mean the mere possession of and ability to impart to others a certain quantum of information. We reject that notion in favor of one that recognizes teacher competence to include the ability to communicate effectively a sense of responsibility as well as information. *See* Lic. Exh. 27, OARP Report, at 60 (factors considered by OARP Review Committee in rating training instructors). Where, as here, so much of the training information to be conveyed concerns the need to comply with proper procedures (*see* p. 1239 and note 61, *infra*), the instructor's attitude toward — *i.e.*, respect for — those procedures becomes an integral (though perhaps subliminal) part of his or her ability to teach.

To be sure, Husted will no longer be permitted to train licensed operators. Moreover, there is no hard evidence on this record that Husted's bad attitude did, in fact, affect his teaching performance. *See, e.g.*, Lic. Exh. 27, OARP Report, at 60-63. But in his new position as Supervisor of Non-Licensed Operator Training, not only will Husted be in a po-

sition to instruct personnel with important duties that affect the public health and safety,[35] he will obviously have certain management responsibilities. As such, Husted will presumably also have a role in establishing the criteria for training instructors and developing the audit program imposed by the Licensing Board, at least in part, as a remedy for his own failure to cooperate with the NRC. *See* LBP-82-56, *supra*, 16 NRC at 320, 365, 384 (¶¶ 2168, 2347, 2421).[36] We seriously question licensee's judgment in *promoting* Husted to an important position with management responsibilities, given his documented past failure to cooperate with the NRC in its cheating investigation.[37] We therefore require, in addition to those commitments reflected in the stipulation with the Commonwealth and the conditions imposed by the Licensing Board should restart be authorized, that Husted have no supervisory responsibilities insofar as the training of non-licensed personnel is concerned.

4. U

The Licensing Board aptly described U, a control room shift foreman: "Either he has an unlucky affinity for situations having an aura of cheating, or he was involved in cheating episodes." *Id.* at 320 (¶ 2169). Three allegations concerning U were pursued at the hearing — (1) he was "available" in Husted's office during the NRC "B" examination to help those taking the test; (2) during that same examination, he called KK (a shift technical advisor) to solicit the answer to an examination question, assertedly on O's behalf; and (3) he used notes written on his hand and "crib sheets" to cheat on NRC and licensee examinations.[38]

Both the Special Master and Licensing Board explored these charges in depth, and no purpose would be served here by a rehearsal of the relevant testimony. *See* LBP-82-34B, *supra*, 15 NRC at 962-69, 1046-47 (¶¶ 112-132, 318-319); LBP-82-56, *supra*, 16 NRC at 320-24 (¶¶ 2169-2187). The Board noted that it reached some conclusions more favorable to U than the Special Master and some others less favorable to him. But, on balance, both reached the same ultimate result

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[35] These non-licensed personnel are auxiliary operators, who are on the career path to becoming licensed operators.

[36] The Board's conditions apply to the overall training program, not just licensed operator training.

[37] Here on appeal and in reference to Husted's conceded attitude problem, licensee states: "While this type of attitude should not be and has not been condoned or encouraged, neither should it be equated with a lack of integrity." Licensee's Brief (November 15, 1982) at 89. Promoting Husted to Supervisor of Non-Licensed Operator Training, in our view, amounts to at least condoning his demonstrated bad attitude.

[38] We note that U was also one of the eight individuals implicated in the Shipman incident, pp. 1219-21, *supra*. *See* Lic. Exh. 83; Tr. 25,375.

of reluctantly giving U the benefit of the doubt and recommending no sanction against him. LBP-82-56, *supra*, 16 NRC at 324 (¶ 2185). The Special Master described some evidence about U as "extraordinarily confusing" and referred to the events surrounding U's alleged telephone call to KK as "a mystery." LBP-82-34B, *supra*, 15 NRC at 967 (¶¶ 127, 129). Our own review of the record leaves us uncomfortable but leads us to an ultimate conclusion no different than that of the Board and Special Master.

We add only a few comments in response to the principal arguments raised in this regard on appeal. TMIA calls our attention to T's testimony concerning his own use of Husted's office during the "B" examination. (T is a control room operator who took the "A" examination.) We find that T's testimony in fact lends support to U's claim that he was legitimately in Husted's office at the time in question to study, and not for the purpose of improperly aiding test candidates. *See* Tr. 26,600-04, 26,616-20. Also in this connection, the fact that U may have never studied before (or since) in Husted's office is of little or no significance. It must be kept in mind that the entire operator retraining program and reexamination process was a one-time event in response to the Commission's post-TMI-2 order. Although U, as an already licensed operator, would have had some training on a regular basis, he previously would not have had to undergo this more demanding program. In this circumstance, it is not implausible that he would study so far in advance for another exam and that he would use Husted's office for that purpose.

Finally, TMIA repeats the argument it made to the Licensing Board that, although licensee's management may not have placed him there, U stationed himself in Husted's office to help examinees. The Board found this "inviting conjecture with some evidentiary support" in U's own testimony. After listing that evidence, however, the Board noted its reluctance to find misconduct on U's part without "some reliable external evidence." It thus gives U the benefit of the doubt. LBP-82-56, *supra*, 16 NRC at 323-24 (¶¶ 2184-2185). We see it a bit differently. It is not a matter of giving U the benefit of the doubt. Rather, the evidence on the whole is inadequate to support a finding of wrongdoing by U. Clouds of suspicion, though thick, are not enough.

5. GG, W, and MM

GG, W, and MM are, respectively, a shift foreman, former shift supervisor, and shift technical advisor. The answers they provided to two questions on a December 1980 licensee-administered quiz were remarkably similar. Especially as to "Lessons Learned" Question 1, the

three answers contained the same stilted language and spelling errors. The Special Master found that GG and W cooperated on the answers to both questions and that MM cooperated as well on Question 1. Although he was not able to determine who copied from whom, the Special Master thought the evidence suggested GG copied from either W or MM. LBP-82-34B, *supra*, 15 NRC at 951-54 (¶¶ 82-93). He recommended no sanction, however, against either MM or GG, essentially because of the limited nature of this incident. *Id.* at 1043-44 (¶¶ 312-313). (W had already been terminated for cheating on an NRC examination. *See* p. 1212, *supra*.)

The Licensing Board disagreed with the Special Master's finding that MM cheated on Question 1. The Board relied in part on MM's comments submitted after the Special Master's report. MM pointed out that, as a shift technical advisor, he was not required to take these quizzes but did so only to evaluate his knowledge. MM also noted that his answers were in the form of a "list" (which the question sought) and thus the language should not be viewed as unnatural or stilted. Although the parallelisms in the answers of MM, GG, and W still troubled the Board, it concluded that MM had not cheated. LBP-82-56, *supra*, 16 NRC at 310-12 (¶¶ 2128-2132). The Board agreed with the Special Master, however, that the evidence established cooperation between GG and W on the two questions. Characterizing it as a weak inference, the Board concluded that W copied from GG, with the latter's consent or knowledge. *Id.* at 312 (¶¶ 2133, 2134). But the Board imposed no sanction on GG for four reasons:

> (1) W was his supervisor, (2) this was a company-administered examination, (3) there was inappropriate informality and inadequate proctoring during the examinations, and (4) there was a broad attitude of disrespect for the examination process.

Ibid. (¶ 2135). The Board observed that its finding would differ had this been an NRC licensing examination.

On appeal, TMIA first objects to the Licensing Board's reliance on MM's post-hearing comments. MM did not testify and was not present at the hearing. He filed his comments in response to the Board's invitation to all affected plant personnel to comment on the Special Master's report. *Id.* at 311 (¶ 2130). TMIA contends that it was a violation of due process for the Board to have treated MM's comments as evidence when it was not introduced as such. In the abstract, we would agree. But as applied to the particular circumstances here, we find no prejudice or violation of TMIA's due process rights.

The Licensing Board itself pointed out that, when they had the opportunity, none of the intervenors even proposed a finding of wrongdoing by MM to the Special Master. *Id.* at 311 n.232 (¶ 2132). *See, e.g.,* TMIA's Proposed Findings (January 15, 1982) at 46-49. In that circumstance and out of concern for fairness to MM, it was not unreasonable for the Board to give him an opportunity to defend himself against the Special Master's unfavorable conclusions.[39] The Board recognized this procedure was unconventional but, after weighing the alternative of reopening the record for MM's testimony, it found little likelihood of a different outcome and decided against reopening. LBP-82-56, *supra,* 16 NRC at 311 n.232 (¶ 2132). We believe the Board's action was reasonable and resulted in no prejudice to TMIA or any other intervenor.[40]

TMIA also challenges the Board's conclusion that W copied from GG. TMIA apparently believes GG was the "aggressive cheater" and that the Board's contrary conclusion is "arbitrary" and "favorable to Licensee." TMIA's Brief (September 30, 1982) at 42, 43. TMIA's argument, however, ignores the principal Board findings that GG and W did cooperate on the exam and that GG consented to or knew of W's copying. *See* LBP-82-56, *supra,* 16 NRC at 312 (¶¶ 2133, 2134). *See also id.* at 290 (¶ 2040). This, of course, is cheating — just as if GG copied from W — and can hardly be characterized as a finding "favorable to Licensee." As for the Board's conclusion itself, we see no basis in the record for overturning it. There is no doubt in our minds that GG and W cooperated on the quiz, and the testimony supports the Board's "albeit weak" inference that W copied from GG, with the latter's consent or knowledge. *See* Tr. 25,692-99, 26,144-49, 26,155-56.

Finally, TMIA complains about the Board's failure to impose a sanction on GG.[41] It expresses concern about the distinction between ethics and technical competence drawn by the Licensing Board in this regard. *See* LBP-82-56, *supra,* 16 NRC at 312 (¶ 2135). In general, we share that concern. Although perhaps conceptually different, ethics and technical proficiency are both legitimate areas of inquiry insofar as consideration of licensee's overall management competence is at issue. *See* pp. 1206-08, *supra.*

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[39] It is not clear why no one (including the Special Master) called MM to testify in the first place.

[40] We note further that the Board's actual finding as to MM was lukewarm at best. As the Board stated,

> This is not the total exoneration to which MM might have been entitled after a full hearing with his participation. The evidence simply isn't there to overcome all the implications of the very similar answers. It would be exceedingly unfair to MM, and possibly a factual mistake, if his status or reputation were to be affected by our uncertain conclusion.

LBP-82-56, *supra,* 16 NRC at 311-12 (¶ 2132).

[41] TMIA essentially acknowledges that action less than removal from licensed duties would be acceptable in this instance. TMIA's Brief at 56.

On the other hand, we believe the Board here properly took account of the attendant circumstances of the quiz (especially the informality of its administration) in not imposing a sanction on GG. *See* LBP-82-56, *supra,* 16 NRC at 312 (¶ 2135). In our view, the Board erred only in failing to consider a sanction less than removal from licensed duties, like one akin to the reprimand given to Shipman. *See* pp. 1219, 1220-21, *supra.* We do not read the Board's opinion, however, as condoning GG's conduct. In fact, the Board's very conclusions, which we here affirm, serve as at least an implicit reprimand of GG.[42]

6. *Other Individuals Implicated in Cheating*

TMIA, the Aamodts, and UCS mention other incidents that, in their view, show cheating or a lack of credibility by some individuals. For instance, WW (a shift technical advisor) provided information over the telephone, which he later learned could have been helpful during a licensee-administered exam then in progress. WW was not able to identify the caller. The Licensing Board found this was probably cheating and chastised WW for his "carelessness" and for not providing this information earlier in the NRC investigation. LBP-82-56, *supra,* 16 NRC at 324 (¶¶ 2188-2189). *See* LBP-82-34B, *supra,* 15 NRC at 969 (¶¶ 133-134). There was also evidence (OO's own testimony) that OO, P, and Q discussed questions and answers during some quizzes. *See id.* at 946-47, 958 (¶¶ 69, 106); LBP-82-56, *supra,* 16 NRC at 317 (¶ 2159). Further, the Special Master found it likely that, despite their denials, A and I had observed cheating by O and W. *See* p. 1212, *supra.* Nonetheless, the evidence of this was not so strong that he could in fact conclude that there was misconduct on their part. LBP-82-34B, *supra,* 15 NRC at 932-33 (¶¶ 23-24).

Though intervenors refer to each of these items in passing, none develops any particular argument on brief. Our own review of the record in this regard has provided no basis for reaching conclusions other than those of the Special Master and Licensing Board in their essentially compatible decisions. We add only that each incident provides yet more evidence of the poor administration of both NRC and licensee examinations at TMI-1 during 1980 and 1981.

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[42] A corresponding concern, however, is the adequacy of *licensee's* response to this incident, given the Board's finding of GG's cooperation on the examination. We believe that in this circumstance it is both fair and proper that licensee now formally reprimand GG, as it has Shipman for similar conduct.

7. Licensee's Investigation of, and Response to, the Cheating

Intervenors, particularly TMIA, argue in general terms that licensee did not adequately investigate the cheating incidents, impeded the NRC staff's investigation, and did not take appropriate disciplinary action toward certain employees. In intervenors' view, this reflects licensee's negative attitude about its responsibilities to the public. The Licensing Board has thoroughly canvassed the record and considered the Special Master's recommendations on the subject. There is no need here to rehearse in detail that evidence and those findings except to note the Board's ultimate conclusion that licensee's investigation was "adequate." *See* LBP-82-56, *supra*, 16 NRC at 333-44 (¶¶ 2228-2271). One aspect of the Board's decision, however, warrants additional comment.

There can be no doubt that the investigatory work of licensee's attorney, John Wilson, was not as thorough as it should have been. If licensee truly did not "stint[] in the resources allocated to the investigation," the fact that time may have been short does not fully explain the failure to follow up on obvious leads (*e.g.*, by interviewing W and the eight individuals implicated in the Shipman incident): additional investigators/attorneys could have been assigned to assist Wilson. *See id.* at 343 (¶ 2269). Nor does it satisfactorily explain why licensee never investigated the important allegation that U was stationed in Husted's office to help those taking the NRC examination. *See id.* at 337-38 (¶¶ 2243-2246).

The Board found that Wilson was naive and naturally inclined to believe in the honesty of licensee's employees. *Id.* at 339 (¶ 2252). Despite questioning his impartiality, however, the Board declined to second-guess licensee's management on the assignment of Wilson to the cheating investigation. *Id.* at 342 (¶ 2266). While recognizing the benefit of hindsight, we are more critical of licensee's decision in this regard. Given the serious implications of the cheating allegations, the already high visibility of this proceeding, and licensee's earlier use of outside counsel to investigate other serious allegations of wrongdoing,[43] licensee exercised extremely poor judgment in delegating a company employee the responsibility for investigating his fellow employees. In the summer of 1981 licensee should have been aware of the folly of its decision.

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[43] In April 1980, licensee hired a Minneapolis law firm (Faegre & Benson) to conduct an inquiry into the so-called "Hartman allegations" of falsified leak rate data at TMI-2. *See* ALAB-738, *supra*, 18 NRC at 184. The Licensing Board, however, was not aware of this at the time it issued its decision. *See id.* at 197 n.38.

Nonetheless, we are not willing to equate this bad judgment and Wilson's defective detective work with improper motives on the part of licensee. There is nothing in the record to suggest that licensee's management manipulated the investigation or actively discouraged Wilson from pursuing important lines of inquiry. Further, the unusually active involvement of two of licensee's top managers (Arnold and Hukill) in some aspects of the investigation and their meetings with employees indicate anything but a desire to cover up the cheating allegations and inhibit serious inquiry. *See id.* at 343, 336 (¶¶ 2269, 2237-2238). We can therefore endorse the Licensing Board's ultimate determination of the adequacy of licensee's investigation. Moreover, except in the two instances noted above at pp. 1223-24 and note 42 (Husted and GG), we find licensee's action in response to improper employee conduct was appropriate.

8. O and VV

Both the Special Master and the Licensing Board dealt at length with the incident involving O and VV — a matter not directly related to the 1980 and 1981 cheating episodes. Briefly, according to the Board, in July 1979 VV (former Supervisor of Operations at TMI-2, the counterpart of Michael Ross) submitted work prepared by O in fulfillment of his (VV's) operator licensing requalification requirements.[44] Despite his asserted knowledge of that fact, Gary Miller (former TMI Station Manager) certified to the NRC — with the knowledge and assent of John Herbein (former Metropolitan Edison Vice President) — that VV had satisfactorily completed the 1978-79 requalification program. The Board therefore concluded that licensee, by the action of Miller and Herbein, had made a material false statement to the agency, in violation of the Atomic Energy Act, 42 U.S.C. § 2236. In addition to conditioning restart with the requirement that any participation by Miller in the startup, testing, or operation of TMI-1 be under the direct supervision of an "appropriately qualified" official of licensee, the Board recommended to the Commission that it direct some component of the staff to conduct a broader investigation into this matter. LBP-82-56, *supra*, 16 NRC at 344-55 (¶¶ 2272-2320).

TMIA contends that this incident bears on licensee's integrity in several respects. It questions whether the sanction imposed on VV — removal from his supervisory duties and assignment to an *ad hoc* group

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[44] 10 C.F.R. § 55.33 and 10 C.F.R. Part 55, Appendix A, describe the requirements for requalification, which licensed operators must satisfy every two years.

gathering information about the TMI-2 accident — was adequate, both in fact and as a matter of perception within the TMI organization. It also complains that Miller and Herbein were retained in their high level management posts for some time after this incident. And TMIA argues that the testimony of former GPUN president Robert Arnold on the O and VV incident was not credible and suggests direct involvement by Arnold in VV's certification to the NRC.

Several factors make extended discussion of this matter unnecessary. As already noted, the Special Master and Licensing Board gave it substantial attention, and we can find no fundamental error in the Board's approach. The principal players against which TMIA seeks the imposition of sanctions are no longer employed within GPU Nuclear.[45] Finally, insofar as VV's certification to the NRC allegedly constituted a material false statement, the Commission has directed us "not to consider" this matter in our review. CLI-82-31, *supra*, 16 NRC at 1237. On that score, the Commission agreed with the Licensing Board on the need for further inquiry and consequently turned the matter over to its Office of Investigations. That investigation led to a Notice of Violation and a proposed $100,000 civil penalty against licensee for material false statements in connection with VV's certification. CLI-83-20, *supra*, 18 NRC 1.[46]

What this whole incident highlights, however, is the fact that a serious problem existed throughout licensee's organization: formal training and the NRC's regulatory requirements for operator licensing and requalification were regarded rather cavalierly, from the staff level to the higher plateaus of management. Moreover, it provides another instance of an employee (VV) in a responsible supervisory position, who is considered technically proficient but who found it necessary and apparently acceptable to submit work not his own.

9. *Summary*

The Licensing Board stated that, although it could not "conclude with certainty that all possible cheating has been revealed," it is "comfortable

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[45] O was terminated for cheating on the NRC licensing examination. *See* p. 1212, *supra*. VV resigned in April 1983 and does not work anywhere in the GPU system. Letter from D.B. Bauser to Appeal Board (May 6, 1983) at 3. Herbein is employed by a non-nuclear GPU subsidiary, as is Miller. Letter from E.L. Blake, Jr., to Appeal Board (March 11, 1982) at 1-2; App. Tr. 154. Arnold has resigned as president and director of GPUN. Notice to Commission, *et al.* (December 1, 1983).

[46] The public record does not reflect whether licensee has consented to the proposed penalty or plans to contest it. It shows only correspondence in August 1983 concerning licensee's request for the investigation report, and the staff's statement that it is deciding whether to release it. Letter from R.C. Arnold to R.C. DeYoung, Director, Office of Inspection and Enforcement (August 5, 1983); letter from R.C. DeYoung to R.C. Arnold (August 22, 1983).

with the results of the inquiries." LBP-82-56, *supra*, 16 NRC at 290 (¶ 2041). The Board believed that probably all relevant and important cheating had come to light because of (1) the active participation of the intervenors, Commonwealth, and NRC staff in the investigation and hearing, and (2) the "repetitive" and "finite" testimony of the witnesses (operators) themselves. *Id.* at 290-91 (¶¶ 2041-2043). While we have noted some areas of disagreement with the Licensing Board concerning its conclusions about particular individuals or incidents, we generally agree with the Board that overall the inquiry (especially the hearing) has been as thorough as possible. Though intervenors quarrel with that notion, they have failed to give us serious cause to doubt that all significant cheating occurrences have been revealed and investigated.

Earlier in this opinion, we noted that the proper focus of this special proceeding is on whether licensee has demonstrated its ability to operate TMI-1 in a safe and responsible manner in the future. *See* note 7, *supra*. The efficacy of action intended to remedy identified deficiencies in past conduct is a necessary element in that equation. With that in mind, we next consider licensee's operator training program and the implications of the cheating episodes for that program.

C. Licensed Operator Training

1. Licensee's Program

Intervenors attack numerous aspects of the TMI-1 training program. The Aamodts, in particular, question the qualifications of the instructors and supervisors within the training department; course content; the amount of time spent on training; the adequacy of simulator training and testing; and the validity of the examination process. All intervenors, especially UCS and TMIA, argue generally that the record in the reopened proceeding on cheating presents a serious challenge to the Licensing Board's earlier favorable findings concerning licensee's training program. *See* LBP-81-32, *supra*, 14 NRC at 478-79 (¶ 276). The Licensing Board recognized that the cheating episodes cast some doubt over those findings. *See generally* LBP-82-56, *supra*, 16 NRC at 355-63 (¶¶ 2321-2342). The Board, however, characterized this as a "quality assurance" problem — one that could be remedied by future audits of various aspects of the training program. *Id.* at 364-65 (¶¶ 2344-2347). Intervenors disagree, contending that future audits do not assure safe operation of the facility now.

The Licensing Board correctly framed the issue: "is the instruction adequate to prepare the operators to operate the plant safely?" *Id.* at 363 (¶ 2343). We disagree with the Board, however, on its affirmative

answer to that question. The deficiencies in operator testing, as manifested by the cheating episodes, may be symptomatic of more extensive failures in licensee's overall training program. Whether those deficiencies still exist or have been sufficiently cured is not evident from the record. Indeed, the record in the reopened proceeding perhaps has raised more questions than it has answered satisfactorily.[47] For example, does the training program actually enhance the operators' knowledge or simply encourage memorization for test-taking purposes? Are the licensee and NRC examinations an effective way to measure an operator's ability to run the plant? Do the format and content of the examinations encourage cheating?

Moreover, we are troubled by the fact that one-fourth of those who took the April 1981 NRC examinations (9 out of 36) either were directly involved in cheating of some sort or were implicated in a way that could not be satisfactorily explained or resolved. *See* Lic. Exh. 83. *See also* note 52, *infra*. Several of these individuals were or are still in supervisory positions. Perhaps most disturbing is the testimony that a number of employees (including training instructors) did not take the courses or examination process seriously. *See, e.g.*, Tr. 25,695-96, 25,745, 25,983, 26,404-06.

The principal difficulty with the decision below, however, is the Licensing Board's failure to reconsider, as promised and in a meaningful way, its earlier finding that licensee's training program was "comprehensive and acceptable." *See* LBP-81-32, *supra*, 14 NRC at 478 (¶ 276). Instead, the Board relied on the post-cheating testimony of only licensee and the staff.[48] But more significant, the Board essentially presumed that the earlier, favorable expert testimony by the outside consultants would not have been altered by the cheating revelations. *See* LBP-82-56, *supra*, 16 NRC at 299, 378-79 (¶¶ 2081, 2396-2400). *See also id.* at 360-61 (¶ 2335). We are not so sure, and, in any event, we are not willing to speculate on how the OARP Review Committee and other consultants would assess the cheating incidents and licensee's subsequent changes in its training and testing program.

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[47] Hence, we disagree with the Licensing Board's view that the evidence in the reopened proceeding has not brought the adequacy of licensee's training program into question. *See* LBP-82-56, *supra*, 16 NRC at 296 (¶ 2061). We do not overlook licensee's improvements in test administration, as supplemented by the Licensing Board. *Id.* at 359-60 (¶¶ 2330-2331). But, like the Special Master, we are not yet convinced that those largely ministerial fixes will salve what may be more serious infirmities in the training program. *See* LBP-82-34B, *supra*, 15 NRC at 1015-20 (¶¶ 242-251).

[48] Even in so doing, the Board noted its misgivings about the testimony of Dr. Robert Long, former Director of Training and Education and now Vice President of Nuclear Assurance, which oversees the training program. LBP-82-56, *supra*, 16 NRC at 380-81 (¶¶ 2406-2407).

It is apparent that the generally positive testimony of the OARP Review Committee and licensee's other independent consultants was of decisional significance to the Board's initial, equally positive judgment on licensee's training program. *See, e.g.*, LBP-81-32, *supra*, 14 NRC at 453-54, 459-65, 471, 472-73, 477 (¶¶ 201-203, 225-241, 260, 263, 272). Once the cheating incidents raised questions about that judgment, it was incumbent upon the Board to seek further testimony from the independent experts upon which it so heavily relied in the first instance.[49] The future audits imposed by the Licensing Board to treat what it sees as a quality assurance infirmity are both necessary and desirable. But whether they are sufficient as well can be determined only after further testimony by the independent consultants.[50]

For example, it is essential to know if Dr. Gardner's favorable opinion of the Operator Accelerated Retraining Program — offered in late 1980 and based on what he believed was the satisfactory implementation of the program — would be altered by the subsequent knowledge of cheating on licensee and NRC examinations. *See* Gardner, fol. Tr. 12,409, at Outline. Mr. Kelly testified about the pride and enthusiasm found among employees in the training program, as well as the professionalism of the instructors. Kelly, fol. Tr. 12,409, at 4, 6, 10. Dr. Christensen observed similar attitudes. Christensen, fol. Tr. 12,409, at 12-13. Subsequent, post-cheating testimony, however, reflected a lack of those qualities. Kelly and Christensen should have been asked how the latter might bear on their previous assessments of the effectiveness of the training program.[51]

The OARP Review Committee reported, on balance, favorably on licensee's training program and predicted that program candidates would be well trained and well prepared for the NRC licensing exams. Lic. Exh. 27, OARP Report, at 1, 3. We have seen that the latter prediction was overly optimistic, at best. As to whether the candidates are nevertheless well trained to operate the plant, the record is incomplete. In reading the OARP Report, one question is inescapable: would the Committee reach the same favorable conclusions in light of the cheating

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[49] The Board described the evidence from the reopened proceeding on cheating as showing "only . . . significant weaknesses" — not a "failure" — in the quality of instruction (and thus training). *Id.* at 361 (¶ 2337). Irrespective of the terminology employed, the underpinnings of the Board's earlier decision (*i.e.*, the consultants' predictive testimony) were shaken. If that testimony is to have any real weight, it must be reevaluated in light of actual events.

[50] Inasmuch as the record on training is now closed, we thus explicitly find the pertinent criteria for reopening satisfied. *See Pacific Gas and Electric Co.* (Diablo Canyon Nuclear Power Plant, Units 1 and 2), ALAB-598, 11 NRC 876, 879 (1980).

[51] Kelly did appear again at the reopened hearing, but his testimony was limited to his role in administering certain "mock" examinations. He did not reassess his earlier expressed views on the OARP. *See* Kelly, fol. Tr. 24,394.

incidents and subsequently acknowledged deficiencies in licensee's training program?

Before answering that ultimate question, the Committee must necessarily reconsider its specific subsidiary conclusions. For instance, the OARP Report referred to "pre-accident neglect" of the TMI Training Department and identified more specific shortcomings (bitterness and anxiety among some employees, inadequate training facilities, the need for special teacher training for the instructors, etc.). *Id.* at 58, 145-47. Notwithstanding these and other criticisms of the program, the Committee gave the OARP high marks. How would the Committee members now strike the balance between the positive and negative aspects of the program? The Report commented briefly but favorably on the written examination. *See id.* at 67. How might that view be revised? One or more of the instructors evaluated by the OARP Committee were involved in the cheating episodes. *See id.* at 62-63.[52] Would that alter the Committee's generally favorable perceptions of the instructors? *See id.* at 58-61. The Licensing Board's decision requires licensee to establish criteria for training instructors. Licensee has submitted these new criteria and the staff has approved them. Letter from R.W. Starostecki to H.D. Hukill (September 27, 1983), Inspection Report No. 50-289/83-22 at 2. *See also* letter from J.F. Stolz to H.D. Hukill (July 28, 1983), Attachment (Safety Evaluation). But in view of the weaknesses in this area previously identified in the OARP Report, the Committee as well should review licensee's new training instructor criteria. *See* Lic. Exh. 27, OARP Report, at 146-47.[53]

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[52] We determined this by comparing the list of named instructors in the OARP Report with the letter designation code used in the hearing before the Special Master to protect the identities of the TMI employees. Because all parties have the code and can thus verify our statement, there is no need for us to identify specifically whom we mean. *But see* note 16, *supra*.

[53] The Aamodts contend that instructors who teach fluid flow, heat transfer, and thermodynamics should have baccalaureate degrees because "the Commission referred to 'college level' as the standard for augmentation of those courses." Aamodt Brief at 7. On its face, the logic of this point seems apparent. The Aamodts, however, have confused a summary of a June 1979 meeting between the staff and licensee – which states that "the operators will be taking college level technical courses" in those three subjects – with a Commission "standard." *See* "Meeting Summary on the Open Items Regarding TMI-1 Restart" (June 28, 1979) at 1. We have been unable to find any specification of course *level* for fluid flow, heat transfer, and thermodynamics in any of the relevant Commission documents. *See, e.g.*, "Qualifications of Reactor Operators" (March 28, 1980) ["Denton Letter"] at 1; Encl. 1 at 2, 5; Encl. 2. Rather, the focus is on course *content*. *See id.* at Encl. 2. The Licensing Board explored this area at hearing and concluded that licensee's training program was not a college curriculum, nor should it be. LBP-81-32, *supra*, 14 NRC at 472 (¶ 262). We find the Board's conclusion is amply supported by the record.

The Aamodts also complain that the Board erred in finding the number of training instructors at TMI has been increased to 45. Aamodt Brief at 7. *See* LBP-81-32, *supra*, 14 NRC at 472 (¶ 262). The Aamodts claim, without any reference to the record, that there are nine instructors. The Board did err in referring to the "faculty" as numbering 45, when the record shows the training "staff" (which could include non-teaching personnel) is now 45. *See* Long, *et al.*, fol. Tr. 12,140, at 3. This minor error is

(Continued)

The OARP Review Committee devoted substantial attention to the use of both part-task and replica simulators. *Id.* at 95-112. Because of the demonstrated weaknesses in past testing procedures, would the Committee *require* even greater usage of simulators in training and testing?[54] Perhaps the most important matter that the Committee should address upon further hearing, however, is its rather prophetic, concluding statement: "Top management needs to keep aware of the real and perceived problems of its employees." *Id.* at 149. The Committee suggested that there was a lack of communication between top management and the operating crews.[55] Do the post-cheating changes in the training program adequately ameliorate this situation?[56]

We recognize that by requiring additional hearing on the post-cheating views of licensee's outside consultants we are further prolonging a pro-

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without consequence — and the Aamodts suggest none. The important consideration is the *qualifications* of the training instructors. And that is what the OARP Review Committee should address again in the context of licensee's new instructor criteria.

[54] The Aamodts argue that the upgraded training program does not include enough simulator training time to satisfy regulatory requirements. They point to NUREG-0660, "NRC Action Plan Developed as a Result of the TMI-2 Accident," as recommending 160-200 hours per operator annually, compared with the 20 hours of actual hands-on simulator training for each TMI-1 operator per year. Aamodt Brief at 15. *See* Tr. 12,156-57, 12,263. We can find no reference to a specific amount of simulator time in the final version of NUREG-0660, dated May 1980. *See* NUREG-0660, *supra*, at I.A.4-1 to I.A.4-7. The Aamodts apparently got the 160-200 figure from Lic. Exh. 27, OARP Report, at 110, where the OARP Review Committee mentions a "proposed" version of NUREG-0660 that required "160-200 hours of simulator experience for hot license training." Though not adopted in the final version of NUREG-0660, this refers to *initial* operator training, not the requalification training for already licensed operators discussed at the referenced part of the hearing.

In this connection, we have been unable to locate any regulatory requirement for a specific amount of simulator training. The OARP Review Committee, however, should reconsider its generalized view on this topic with respect to the particular amount of simulator time per operator at TMI-1. *See* Lic. Exh. 27, OARP Report, at 99. At the same time, the Committee should consider whether all TMI-1 operators, previously licensed or not, should be tested on a simulator. The Aamodts attempted to inject this as an issue at the eleventh hour, just as the Licensing Board was about to issue its original management competence decision. The Board denied that attempt, stating that the motion was too late and that Commission regulations and the order instituting this proceeding do not require simulator testing by the NRC. LBP-81-32, *supra*, 14 NRC at 568-69 (¶¶ 542-548). We agree with the Board that there is no such requirement. Nonetheless, the Board's mandate from the Commission was to decide if the actions ordered were "sufficient" as well as necessary. Licensee has already committed to NRC testing of newly licensed TMI-1 personnel on a simulator. *Id.* at 568 (¶ 542). We believe it is important that the OARP Review Committee now consider whether, in view of the compromised written examinations, previously licensed operators should be tested on the simulator as well. (Thus, we need not decide if the Board erred in refusing to entertain the Aamodts' "late contention" on this subject.)

[55] The Special Master similarly concluded, with regard to the poor administration of licensee's examinations, that if licensee was not aware of these conditions, "its management was out of touch with the training program." LBP-82-34B, *supra*, 15 NRC at 1050 (¶ 329).

[56] In reconsidering its earlier appraisal of the OARP, the Committee should take account of several important personnel changes within the Training Department. For example, Dr. Robert Long, who was Director of Training and Education during the cheating incidents, has been promoted to GPUN Vice President for Nuclear Assurance. Dr. Richard P. Coe has replaced him. Samuel Newton, former Operator Training Manager, is now Manager of Plant Training. Edward J. Frederick, a control room operator assigned to TMI-2 at the time of the accident, has been promoted to Supervisor of Licensed Operator Training. Letter from D.B. Bauser to Appeal Board (May 6, 1983) at 2-3. In view of what occurred, are these appropriate assignments?

ceeding that appears to have no end. Nor are we insensitive to the morale problems among employees whose training and job performance continue to be under scrutiny, despite eventual successful retesting by the NRC.[57] But we are presented with a Hobson's Choice: decide the pivotal issue of the adequacy of training at TMI-1 notwithstanding a significant gap in the record,[58] or impose more demands, in the form of further hearing, on the resources of all parties and the agency alike. We believe the latter is the more appropriate alternative.

2. The Role of the NRC Staff

We would be remiss were we to overlook the role of the NRC staff in the past deficiencies in licensee's training program. Indeed, the staff must share a large measure of the blame due to its poor test administration and inability to earn the respect of many TMI employees. The staff has conceded its laxity with regard to the April 1981 NRC examination[59] and has informed the Special Master and Licensing Board of new test procedures it has established for the future (*e.g.*, more rigorous proctoring). *See* Staff Exh. 30, ES-201 (draft rev. 3). While such improvements are desirable, we share the concern voiced by the Licensing Board about the level of staff involvement with respect to licensee's training program.

First, the Board expressed concern with the staff's limited role as "auditor" of licensee's requalification program and administrator of the

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[57] A related problem — indeed, a "catch 22" — is that, because of lack of use, the operators' skills have declined during the long period of plant shutdown. This is evident from a recent Inspection Report, where the staff concludes that overall licensed personnel at TMI-1 are well trained but identifies several areas of weakness that are to be addressed in a special restart training program. Letter from R.W. Starostecki to H.D. Hukill (April 13, 1984), Enclosure (Inspection Report No. 50-289/84-05 at 4-5).

[58] This is not a matter of bringing a "stale" record in a closed proceeding up to date. *See Interstate Commerce Commission v. Jersey City*, 322 U.S. 503, 514-15 (1944). Rather, it is akin to recalling a crucial witness for further testimony after new developments come to light during a lengthy trial.

[59] While criticizing the staff, the Licensing Board found it "in literal compliance" with the governing standard for administering operator license examinations, ES-201. LBP-82-56, *supra*, 16 NRC at 368 (¶ 2357). We would not be so generous. The extensive review during the examination and the numerous changes that were necessary strongly suggest that the examiners failed to acquaint themselves adequately with the facility and that headquarters staff did not conduct the pre-examination review, as required by ES-201. *See* Staff Exh. 29, ES-201 (rev. 2, 1969), at 1, 2. Moreover, the staff's argument that the standard was satisfied by having at least one NRC representative present somewhere in the *training building* during the examination makes a mockery of the standard as well as the examination process. *See* NRC Staff's Proposed Findings (January 15, 1982) at 68. Under "Administration of Examination," ES-201 provides that "applicants should not be allowed to leave the examination room, except for the obvious purpose, (one at a time)," and "[d]uring the examination, applicants are not permitted to communicate or refer to any texts or descriptive material. . . ." It also refers to "ensur[ing] the integrity of the examination," avoidance of the use of *facility* proctors, and the desirability of oversight of the examination personally by the examiner. Staff Exh. 29, ES-201 (rev. 2, 1969) at 2-3. It would be impossible, in our view, to administer an examination in compliance with this standard simply by having one NRC representative present somewhere in the building during the test.

NRC licensing examination. LBP-82-56, *supra,* 16 NRC at 364 (¶¶ 2345-2346). The staff has indicated its intent not to review licensee's future plans to qualify candidates for the NRC examination, limiting its involvement to comparing the performance level of license candidates on NRC examinations with a perceived industry norm and licensee's past record. Boger, fol. Tr. 25,480, at 2-3. As the Board pointed out, this conflicts with the more substantive role for the staff contemplated in the regulations. *See generally* 10 C.F.R. §§ 55.10(a)(6), 55.33(a)(4). *See also* 10 C.F.R. Part 55, Appendix A ("a requalification program which has been reviewed and approved by the Commission"). It also conflicts with Task I.A.2 of NUREG-0660, which provides that "[t]he NRR staff will review the contents of revised training programs, and the IE staff will audit the implementation." NUREG-0660, *supra* note 54, at I.A.2-1. *See also id.* at I.A.2-3 to I.A.2-4.[60] In our view, focusing on the performance level of license candidates (*i.e.,* the percentage that passes the examination) puts too much emphasis on the examination *qua* examination and too little on the substance of the *training* itself.

We are also troubled by the numerous substantive problems in the examination identified by the Special Master and noted with concern by the Board. *See* LBP-82-34B, *supra,* 15 NRC at 1026-35 (¶¶ 269-287); LBP-82-56, *supra,* 16 NRC at 369-71 (¶¶ 2363-2372). In short, the questions and answer keys often reflected training information (some of which might be either obsolete or overly specific), rather than actual plant design. This, in turn, means that training may not be oriented to actually operating the plant. Again, this shows undue emphasis on passing the examination, as opposed to learning how to operate the particular plant in question.

We are, or course, aware that the problems just discussed are generic in nature, and that we have no jurisdiction to require the staff to adopt or abandon certain methods for doing its myriad assigned duties. We are aware, too, that Congress has directed the Commission to take a new look at the broad subject of training. *See* Nuclear Waste Policy Act of 1982, § 306, 42 U.S.C. § 10,226. The Commission's substantial effort in that regard is under way. *See* SECY-84-56 (February 2, 1984); SECY-84-56A (April 30, 1984). We thus join the Licensing Board in urging the Commission to give the highest priority to the efforts to make the operator training and testing process a meaningful one. *See* LBP-82-56, *supra,* 16 NRC at 371 (¶ 2372).

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[60] Regulatory Guide 1.8 envisions similar increased staff "participation" in licensee training programs for both initial license candidates and those seeking requalification. *See, e.g.,* Reg. Guide 1.8, "Personnel Qualification and Training," 2d proposed rev. 2 (1980), §§ 2.2.2, 2.2.7. Although this document still exists only in draft form, it represents a public statement of the staff's current position.

In sum, proper training is essential to the safe operation of the plant and requires the closest scrutiny.[61] This is especially so here, where because of the role of operator error in the TMI-2 accident, training has been of key importance in this proceeding from the outset. There is no substitute for a complete and convincing record. We therefore remand to the Licensing Board that part of this proceeding devoted to training, for further hearing on the views of licensee's outside consultants (including the OARP Review Committee) in light of both the weaknesses demonstrated in licensee's training and testing program and the subsequent changes therein.

D. Non-licensed Operator Training

Although most of the attention at the hearing with regard to training was directed to licensed operators, the Licensing Board recognized the important functions of non-licensed personnel for the safe operation of the plant. The Board found that licensee has expanded and improved its training program for non-licensed employees. LBP-81-32, *supra*, 14 NRC at 441-42, 455-59 (¶¶ 164, 208-224). Although intervenors did not participate in the litigation of the issue, the Board also addressed Issue 4 specified in CLI-80-5, *supra*, 11 NRC at 409, concerning the qualifications of TMI-1 health physics personnel. It concluded that this staff is adequately trained to ensure effective implementation of licensee's radiological controls program. LBP-81-32, *supra*, 14 NRC at 505-11 (¶¶ 360-376).

On appeal, the Aamodts raise essentially three matters with regard to non-licensed operator training. First, they contend that the Board "failed to develop any significant record." Aamodt Brief at 12. The Aamodts rely on a November 1980 Inspection Report (No. 50-289/80-21) that identified several weaknesses in licensee's training

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[61] The record in this proceeding is replete with examples of where it is essential for an operator to be fully conversant with plant design and procedures. *See, e.g.*, ALAB-729, *supra*, 17 NRC at 832-35, 894 (action to enhance reliability of emergency feedwater system); 841-42, 846-47 (raising steam generator water level to 95 percent to promote boiler-condenser cooling); 861 n.213, 862 n.217 (closure of PORV block valve in event of a loss-of-coolant accident); 864 (prevention of low temperature overpressurization of the reactor vessel); 864-65 (mitigation of inadequate core cooling conditions); 866, 870-71 (intervention to combat unforeseen events); 880-81, 894 (reliance on redundant indication closest to saturation); 856, 860 886-87, 894 (connection of pressurizer heaters to emergency power). *See also* LBP-81-59, *supra*, 14 NRC at 1709-10.

We note in this connection a recent Notice of Violation citing numerous instances where licensee's personnel failed to follow proper operating procedures. The staff noted that licensee had admitted and identified most of these violations and took corrective action. Nonetheless, because of the large number of violations within a relatively short time, the staff determined that a $40,000 civil penalty should be imposed. *See* letter from R.C. DeYoung to P.R. Clark (May 7, 1984), Appendix at 4-5. Licensee has apparently decided to pay this fine. Wall St. J., May 16, 1984, at 53, col. 6.

program for non-licensed operators, including the absence of a written training program and a disorganized management overview. *See* Staff Exh. 4, NUREG-0680 (Supp. No. 1), Appendix B at 9. The staff indicated in that report, however, that it would apprise the Board and parties of its evaluation of licensee's corrective action during the hearing. *Ibid.* The staff fulfilled this commitment in Staff Exh. 13, NUREG-0680 (Supp. No. 2), at 2-4. There the staff described the content of licensee's training programs for auxiliary operators and plant technicians (including radiological control and chemistry technicians) and concluded that each complied with the pertinent regulatory requirements. The staff also noted that licensee had issued a training manual incorporating the details of these programs. The staff stated that it was reviewing the manual and would "assure its adequacy prior to any recommendation for restart of TMI-1." *Id.* at 4.[62] The staff also concluded that licensee's training program for non-licensed personnel was acceptable and that it considered the weaknesses identified in Inspection Report No. 50-289/80-21 to be resolved. *Ibid.* The Licensing Board took note of that evaluation, and the Aamodts have offered no basis to challenge it. *See* LBP-81-32, *supra*, 14 NRC at 459 (¶ 224).

Second, the Aamodts argue that the Licensing Board measured licensee's training program for non-licensed operators by the wrong standard, American National Standard for Selection and Training of Nuclear Power Plant Personnel ANSI/ANS-3.1 (1978). *See id.* at 441 (¶ 164). They point out that this standard preceded the TMI-2 accident and argue that the appropriate standard for augmented training should be the post-accident 1979 draft version of ANS-3.1.[63] Although the Board referred to ANSI/ANS-3.1 (1978), the record shows that the staff applied the even more rigorous requirements of the December 6, 1979, draft version of ANSI/ANS-3.1 to licensee's training program. The staff testified that it would apply the Second Proposed Revision 2 of Regulatory Guide 1.8 (September 1980) to all licensees. Crocker, *et al.*, fol. Tr. 12,653, at 7-8. That Regulatory Guide (at 10) explicitly incorporates and endorses the requirements of the 1979 version of ANSI/ANS-3.1. *Id.* at 5-6. Thus, although the Licensing Board's decision does not reflect it, the record shows that licensee's training program was, in fact, evaluated in terms of the post-TMI-2 standard sought by the Aamodts.

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[62] The staff has now completed its review of the manual and training program for non-licensed personnel, finding them acceptable. *See* letter from T.T. Martin to GPU Nuclear Corporation (January 12, 1983), Inspection Report No. 50-289/82-19 at 24-25; letter from T.T. Martin to GPU Nuclear Corporation (March 10, 1983), Inspection Report No. 50-289/83-02 at 10.

[63] The Aamodts refer to "Draft ANS 3.2-1979." Aamodt Brief at 13. We assume they mean ANS-3.1.

Third, the Aamodts complain that at the reopened hearing on cheating the Special Master erred in refusing to let Harry Williams, who had been briefly employed as a guard at TMI, testify about "looseness" in licensee's administration of Radiation Worker Permit tests during April 1979. Williams had alleged cheating and other improprieties by certain non-TMI employees (construction workers). The Special Master concluded, after *voir dire* of Williams, that he was a highly unreliable witness. The Special Master excluded Williams's testimony for that reason as well as its lack of probative value. LBP-82-34B, *supra*, 15 NRC at 988-89 (¶¶ 179-180). The Licensing Board agreed. LBP-82-56, *supra*, 16 NRC at 333 (¶ 2226). So do we, for the reasons stated by the Special Master. The Aamodts argue, however, that Williams's allegations have been effectively corroborated by a later incident involving licensee's failure to secure the answer keys to a radiation worker test. This same incident was the basis of a motion to reopen filed by the Aamodts and denied in ALAB-738, *supra*, 18 NRC at 193-94. We explained there that licensee's response to this incident was both prompt and sufficient. Indeed, it demonstrated that licensee's system for dealing with such irregularities was working. The Aamodts have provided no cause for us to reconsider either that conclusion or the Special Master's initial exclusion of Williams's testimony.

IV. STAFFING AND WORK HOURS

Two matters related to training are licensee's staffing plans and work schedule for operating personnel. The Aamodts express concern about licensee's ability to staff TMI-1 with enough high quality operators on each shift. They assert that the Licensing Board's staffing requirements are below the minimum standards set forth in several Commission documents, particularly NUREG-0737, "Clarification of TMI Action Plan Requirements" (November 1980), and NUREG-0731, "Guidelines for Utility Management Structure and Technical Resources" (September 1980). As we understand their argument, the Aamodts want a minimum of five shifts to operate the plant, with each shift to have a minimum of two senior reactor operators (SROs). They also want limits on overtime. Aamodt Brief at 16-19. The Licensing Board would require licensee to "employ all reasonable efforts to ensure personnel will be scheduled on a six-shift rotation" but otherwise authorizes lesser variations in shift rotations. The Board would also permit licensee to staff each shift with one SRO (who will act as shift supervisor), another person who is either an SRO or a reactor operator

(RO), and two other ROs. LBP-81-32, *supra*, 14 NRC at 580-81 (¶ 583, condition 9).

Subsequent events have essentially mooted the Aamodts' appeal on this matter. In July 1983, the Commission promulgated new regulations governing licensed operator staffing at nuclear power plants. These regulations, which took effect January 1, 1984, and apply to *all* licensees (including TMI), incorporate the NUREG-0737 criteria sought by the Aamodts. Pursuant to 10 C.F.R. § 50.54(m)(2)(i), licensee now must have a minimum of two SROs and two (or three) ROs[64] per shift. 48 Fed. Reg. 31,611, 31,614 (1983). In addition, 10 C.F.R. § 50.54(m)(2)(iii) requires at least one of the SROs to be "in the control room at all times" and an RO or SRO to be "present at the controls at all times." *Ibid.* These new regulations supersede the less stringent conditions imposed by the Licensing Board in 1981.[65]

Licensee has notified the staff of both its ability and willingness to satisfy this requirement. As of March 1984, it has 13 SROs and 20 ROs and "plans to utilize the *six-shift* rotation plan for licensed operators during startup" and power escalation testing. Letter from D.B. Bauser to Appeal Board (April 4, 1984), Attachment (letter from H.D. Hukill to T.E. Murley (March 30, 1984) at 3, 4) (emphasis added).[66] This number of SROs and ROs is more than enough to satisfy the new staffing requirements of 10 C.F.R. § 50.54(m)(2)(i) for all six shifts (12 SROs and 12 (or 18) ROs).[67] Thus, licensee will exceed the staffing requirements sought by the Aamodts.[68]

With respect to the Aamodts' concern about excessive overtime by licensed operators, the Commission staff has now adopted overtime

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[64] The new rule specifies two SROs and two ROs for a one-unit facility with one unit operating. A two-unit facility (with two control rooms) with only one unit operating requires two SROs and *three* ROs. TMI is, of course, such a two-unit facility, but because Unit Two is indefinitely shutdown, it is not clear whether it should be classed as a one-unit or two-unit facility for purposes of this rule. Because the Aamodts' concern is with the number of SROs and the rule requires two SROs for both one-unit and two-unit facilities, we need not resolve the question of how many ROs are required.

[65] This is so despite the contrary impression given by certain recent staff correspondence. *See* letter from J.F. Stolz to H.D. Hukill (February 22, 1984), Enclosure at 1-2, 3.

[66] As far as we are aware, the Commission has never set or suggested a specific number of *shifts* for any facility, leaving that to management prerogative. Licensee here has clearly expressed its preference for six shifts – a number that appears to be consistent with the Aamodts' position. We see no need to formalize this commitment further.

[67] *See* note 64, *supra*.

[68] The Aamodts express concern about the high attrition rate at TMI. Licensee's March 30 letter notes that only one licensed operator has resigned in the past two years. Licensee also sets out in chart format the experience of each member on each shift, showing a very favorable comparison with the baseline experience suggested for "Near Term Operating License" plants. Letter from D.B. Bauser to Appeal Board (April 4, 1984), Attachment (letter from H.D. Hukill to T.E. Murley (March 30, 1984) at 3, 1, Attachment 1).

restrictions. Before the accident at TMI-2, there were no such regulations or policy. NUREG-0737, however, noted studies showing that fatigue could affect operator performance. It also referred to inspections that revealed personnel at some plants remain on duty for extended periods of time. Consequently, the staff proposed overtime guidelines for interim use while the agency and industry working groups studied the matter further. NUREG-0737, *supra*, at 3-10 to 3-11 (IE Circular No. 80-02). Two years later, the staff revised NUREG-0737 and issued Generic Letter No. 82-12, "Nuclear Power Plant Staff Working Hours" (June 15, 1982). *See* 47 Fed. Reg. 7352 (1982). This reflects the current NRC policy on overtime and applies to *all* licensees and applicants.

The stated objective of the policy is "to prevent situations where fatigue could reduce the ability of operating personnel to keep the reactor in a safe condition." Consequently, enough personnel should be employed to "work a normal 8-hour day, 40-hour week" and to avoid "routine heavy use of overtime." The policy recognizes, however, that situations can arise that make overtime inevitable.[69] It therefore prescribes the following guidelines for licensees to follow:

> a. An individual should not be permitted to work more than 16 hours straight (excluding shift turnover time).
>
> b. An individual should not be permitted to work more than 16 hours in any 24-hour period, nor more than 24 hours in any 48-hour period, nor more than 72 hours in any seven day period (all excluding shift turnover time).
>
> c. A break of at least eight hours should be allowed between work periods (including shift turnover time).
>
> d. Except during extended shutdown periods, the use of overtime should be considered on an individual basis and not for the entire staff on a shift.

Generic Letter No. 82-12, Attachment at 2-3. Licensee has agreed to these restrictions and has already incorporated them into its Administrative Procedures and Technical Specifications for TMI-1. Letter from H.D. Hukill to D.H. Eisenhut (December 16, 1982); letter from J.F. Stolz to H.D. Hukill (September 1, 1983) at 1. *See* note 89, *infra*.

Aware of Generic Letter No. 82-12, the Aamodts nonetheless now argue that the new overtime guidance and restrictions are "not reassuring." Aamodt Brief at 29.[70] They fail to elaborate other than to

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[69] In fact, it seems logical that, in an emergency, overtime by certain employees would be desirable in order to assure continuity in some functions and to provide important information to the next shift.

[70] The Aamodts also contend that the Licensing Board erroneously denied them the opportunity to litigate operator fatigue in connection with both control room design and operator working hours. The *(Continued)*

urge "short hours." *Ibid.* Without more — including a nexus to the TMI-2 accident (*see* note 70, *supra*) — we are unwilling and unable to impose any stricter limitations on overtime than those to which licensee is already committed pursuant to Generic Letter No. 82-12. Moreover, these restrictions, in conjunction with licensee's fully-staffed, six-shift rotation and obligation to comply with 10 C.F.R. § 50.54(m)(2)(i), represent a significant improvement in licensee's operation. The Aamodts, in fact, have gotten all they originally sought with regard to plant staffing and work hours. Assuming that licensee's personnel are adequately trained (*see* pp. 1232-37, *supra*), we conclude that TMI-1 is sufficiently staffed to assure safe operation of the facility.

V. MAINTENANCE

Among the management competence issues the Commission directed the Licensing Board to consider in this proceeding was the adequacy of licensee's maintenance program. *See* CLI-79-8, *supra*, 10 NRC at 145; CLI-80-5, *supra*, 11 NRC at 409. In addition, the Board admitted and litigated TMIA's contention 5. As pertinent here, the contention alleged that licensee has deferred "safety-related" maintenance and repair in violation of its own procedures, failed to keep accurate and complete maintenance records, and used overtime extensively in performing safety-related maintenance. *See* LBP-81-32, *supra*, 14 NRC at 479 (¶ 277). (The entire contention is set out in Appendix C.) Although the Licensing Board identified some deficiencies in licensee's maintenance program (particularly its record keeping practices), it resolved all issues encompassed within TMIA contention 5 in licensee's favor. *See generally id.* at 479-501 (¶¶ 278-348). On appeal, TMIA raises a number of procedural and substantive objections to the Board's treatment of this im-

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Board excluded the Aamodts' "fatigue" evidence because it had no nexus to the TMI-2 accident itself or licensee's response to the accident. Tr. 17,256, 17,265-67. We have reviewed Mrs. Aamodt's testimony, fol. Tr. 12,931, and agree with the Board. *See also* Intervenor Response to Board Request for Evidence (March 10, 1981). That is not to say that her *general* points concerning the relation of fatigue and operator performance are not valid. Indeed, Mrs. Aamodt relies on the same material in NUREG-0737 that is discussed above and that undergirds the staff's current overtime policy. Where the Aamodts failed, however, is in showing a particular connection between fatigue and the TMI-2 accident — a linkage necessary in this *special* proceeding. *See* Commission Order of March 14, 1980 (unpublished) at 2. The points they raised are of general applicability to all plants — hence, the staff's eventual generic response.

As for control room design, that matter was thoroughly litigated in the design phase of this proceeding and to a lesser extent in this phase. *See* LBP-81-59, *supra*, 14 NRC at 1318-28 (¶¶ 907-920); LBP-81-32, *supra*, 14 NRC at 466-67 (¶¶ 244-247). The Aamodts raise no specific arguments on appeal in this regard.

portant matter.[71] As explained below, however, we see no basis for overturning the Board's decision on licensee's maintenance program.

A. TMIA's Procedural Objections

1. Burden of Proof

The Licensing Board candidly admitted that TMIA's maintenance contention "was not litigated . . . in the usual manner, . . . with Licensee first presenting its case on the subject, followed by the Staff and by any intervenors presenting direct evidence." *Id.* at 479 (¶ 278). The Board had directed TMIA to proceed with its case first because of TMIA's failure to comply with certain discovery requests and Board orders. As the Board explained, this would give licensee the opportunity to "discover" the specific dimensions of TMIA's case and thus permit it to respond more effectively. *Id.* at 480 (¶ 278). *See Northern States Power Co. (Minnesota)* (Tyrone Energy Park, Unit 1), LBP-77-37, 5 NRC 1298, 1300-01 (1977), *cited with approval in Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-613, 12 NRC 317, 338 (1980). TMIA now claims that this alteration in the order of evidence presentation was unfair and amounted to an improper shift in the burden of proof.

TMIA's claim is without merit. First, there is absolutely no indication in the Board's decision — and TMIA cites none — that TMIA in fact bore the burden of proof on contention 5. Indeed, throughout this entire special proceeding, that burden has been (and remains) on *licensee* to show cause why it should be authorized to restart TMI-1. *See Consumers Power Co.* (Midland Plant, Units 1 & 2), ALAB-315, 3 NRC 101, 105 (1976). On the other hand, by raising a particular contention challenging licensee's ability to operate TMI-1 in a safe manner, TMIA necessarily assumed the "burden of going forward" with evidence to support that contention. *See Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-123, 6 AEC 331, 345 (1973). The procedures employed by the Licensing Board here are entirely consistent with that responsibility.

Moreover, the Board was fully justified in requiring TMIA to proceed first. As the Board noted, it could have found TMIA in default for failing to comply with its discovery orders and dismissed its contention.

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[71] TMIA does not challenge the Licensing Board's decision on those parts of its contention 5 that concern licensee's maintenance budget and staffing plans. *See* LBP-81-32, *supra*, 14 NRC at 493-96 (¶¶ 320-330). Our own review of that part of the Board's decision discloses no error warranting corrective action.

LBP-81-32, *supra,* 14 NRC at 480 n.26 (¶ 278). *See* 10 C.F.R. §§ 2.707, 2.718(e). Instead, because of the importance of the issue, the Board chose to require TMIA to proceed with its case first. We find the Board's action to be a reasonable exercise of its discretion, fully in accord with agency law and the Administrative Procedure Act. *See Public Service Co. of Indiana* (Marble Hill Nuclear Generating Station, Units 1 and 2), ALAB-459, 7 NRC 179, 188 (1978); 10 C.F.R. § 2.731; 10 C.F.R. Part 2, Appendix A, § V(d)(4); 5 U.S.C. § 556. The Board's action was also in furtherance of the Commission's instruction in this very proceeding to ensure that all necessary information be received, but without undue delay. *See* CLI-79-8, *supra,* 10 NRC at 147.[72]

2. *Loss of Counsel*

TMIA was initially represented by legal counsel in this proceeding. After the presentation of its case-in-chief on contention 5, TMIA was unable to continue paying its legal fees and its counsel withdrew. TMIA now claims that the Licensing Board violated due process when, in January 1981, it imputed knowledge of what had transpired thus far to TMIA's new lay representative, Louise Bradford. It contends that the Board should have provided her with "constructive assistance" and should not have expected her to understand, analyze, and prepare cross-examination of licensee's witnesses. TMIA's Brief at 7.

When a *party* is permitted to enter a case late, it is traditionally expected to take the case "as it finds it." It follows that, when a party that has participated in a case all along simply changes *representatives* in midstream, knowledge of the matters already heard and received into evidence is of course imputed to it. The Licensing Board's only other alternatives here were to dismiss contention 5 or to relitigate what had already been presented. Neither would have been in TMIA's best interest, and the latter option would have been unfair to the other parties as well and caused undue delay. The record reflects that the Board was duly solicitous of TMIA's situation and essentially directed TMIA's former counsel to bring Bradford up to date on the case. Tr. 10,421-23, 10,431-32, 10,440-42. *See* ABA Model Code of Professional Responsibility EC 2-32 (1980) (now, ABA Model Rules of Professional Conduct

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[72] Subsequent to the Board's action, the Commission issued its *Statement of Policy on Conduct of Licensing Proceedings,* CLI-81-8, 13 NRC 452 (1981), in which it "reemphasized" the boards' authority and responsibility to take a wide range of measures to ensure the orderly conduct of NRC proceedings. *See id.* at 453, 454.

Rule 1.16(d)(1983)).[73] TMIA itself stated its intent to participate "in a more limited way" from that point on and apparently did not seek extra time to get caught up on the case. Tr. 10,421.[74]

The NRC's Rules of Practice are more liberal than those of some other agencies and courts, in that the NRC permits non-attorneys to appear and represent their organizations (like TMIA) in agency proceedings. *See* 10 C.F.R. § 2.713(b). *Compare* 49 C.F.R. §§ 1103.2, 1103.3 (Interstate Commerce Commission); 2d Cir. § 46(d); 3d Cir. R. 9; Fed. Cir. R. 7(a). Further, we do not hold lay representatives to as high a standard as we do lawyers. But the right of participation accorded *pro se* representatives carries with it the corresponding responsibilities to comply with and be bound by the same agency procedures as all other parties, even where a party is hampered by limited resources. *Statement of Policy on Conduct of Licensing Proceedings, supra* note 72, 13 NRC at 454. *See, e.g., Pennsylvania Power and Light Co.* (Susquehanna Steam Electric Station, Units 1 and 2), ALAB-693, 16 NRC 952, 956-57 (1982). Expecting Bradford to be familiar with her organization's own case neither is unfair nor violates due process.

3. Licensing Board Involvement

In a related vein, TMIA suggests that the Licensing Board itself should have participated more directly to compensate for TMIA's lack of legal and technical expertise. Specifically, in TMIA's view, the Board should have appointed independent experts to assist both TMIA and the Board in presenting and understanding the evidence on contention 5. As explained below at p. 1273, the Board was precluded by law from appointing anyone to assist TMIA in its case. With respect to the Board's calling upon independent experts to assist the Board itself, we pointed out in *South Carolina Electric and Gas Co.* (Virgil C. Summer Nuclear Station, Unit 1), ALAB-663, 14 NRC 1140, 1146 (1981), that this action is warranted in only the most extraordinary circumstances — *i.e.*, when " 'a board simply cannot otherwise reach an informed decision on the issue involved.' " The record here presents no such circumstance. The mere fact that TMIA may regard certain of the Licensing Board's

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[73] Despite the fact that intervenors ceased getting free transcripts during the proceeding (*see* p. 1273, *infra*), all documents and transcripts were still available in the local public document room.

[74] Bradford entered her appearance on January 15, 1981. At that time, there was no date set for hearing licensee's evidence on contention 5, but the Board assured her that she would have "some lead time" to prepare. Tr. 10,422. The Board, in fact, did not begin to receive testimony on this matter until February 24, 1981. *See* Tr. 13,528 *et seq.*

conclusions as arbitrary does not demonstrate the Board's inability to make an informed decision, so as to require outside expertise.[75]

TMIA's claim that the Board was obliged to play a more active role at the hearing is similarly without basis. Our canvass of the record reveals a board well aware of its responsibility to the public and the Commission "to ensure that it receives all information necessary to a thorough investigation and resolution of the questions before it." CLI-79-8, *supra*, 10 NRC at 147. *See* Tr. 3034. Particularly with respect to TMIA contention 5, the Board could have found TMIA in default and dismissed the contention. *See* pp. 1245-46, *supra*.[76] Yet, because of the importance of the issue, it chose to receive evidence on it. LBP-81-32 *supra*, 14 NRC at 480 n.26 (¶ 278). In addition to TMIA's 15 witnesses, the Board called another to testify on licensee's overtime practices — an issue specifically raised in contention 5. *Ibid.* (¶ 279). Further, the Board required licensee to produce additional evidence concerning its maintenance record keeping practices and pursued other areas of inquiry on its own. *Id.* at 488, 484, 497 (¶¶ 302, 290, 336). This scarcely shows a board content only to call "balls and strikes" and insensitive to its public responsibilities.

Accordingly, we reject TMIA's argument that it was unfairly and improperly impeded in developing the record on its contention 5.

B. TMIA's Substantive Objections

1. Deferral of Safety-related Maintenance

Briefly, TMIA sought to show, through the testimony of licensee's employees and a sample of numerous job tickets requesting maintenance work at Unit 1 before the TMI-2 accident, that licensee had deferred "safety-related" maintenance even beyond the time for such work specified in licensee's own procedures. Licensee responded with witnesses of its own who addressed the specific job tickets cited by TMIA. The staff adduced testimony as well, generally supporting licensee's claim that its past and present maintenance practices have not endangered the public health and safety. TMIA disagrees with the Licensing Board's finding that licensee deferred no significant maintenance work. *See id.* at 485 (¶ 296). It argues that the Board arbitrarily rejected or ignored its evidence, while relying on assertedly unsupported statements of licensee

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[75] Likewise, TMIA's random charges of the Board's "bias" are supported by neither the record nor the fact that the Board's ultimate conclusions are contrary to those urged by TMIA.

[76] The Board, of course, would still have been obliged to consider the general adequacy of licensee's maintenance program, as that was among the issues specified for hearing by the Commission. *See* p. 1244, *supra*.

and the staff. Further, TMIA complains that the Board did not explain its decision adequately.

A problem confronting the Board at the outset was the definition of "safety-related," as used in TMIA's contention 5. The problem remains on appeal, particularly insofar as TMIA objects to the Licensing Board's discussion of the parties' "agreement" concerning this term. *See id.* at 484-85 (¶¶ 291-295). We have reviewed the pertinent portions of the record and conclude that, overall, the Board's discussion reflects the gist of the parties' positions on the meaning of safety-related.[77] TMIA is correct, however, in identifying some discrepancies — minor ones, in our view — between the Board's opinion and its (TMIA's) statements at the hearing. For the sake of clarification, we believe the following more accurately states the parties' positions.

TMIA stated that it would call Joseph Colitz (Manager of Plant Engineering at TMI-1) to testify and to provide technical expertise on the matter of what is safety-related. TMIA indicated, however, that it might not agree with Colitz's views[78] and would leave it to the Board to draw its own conclusions. Licensee, on the other hand, was willing to accept Colitz's opinion. Tr. 2575-77. TMIA went on to offer its alternative view that the safety significance of a maintenance activity could be found on the face of the job ticket — *i.e.*, in the description of the function of the system to be repaired and in the priority assigned to the work order. The Board expressed its skepticism, though, as to the adequacy of TMIA's approach. Tr. 3032-38.

TMIA's criticism of the Board's actual evidentiary rulings and comments at the hearing, however, is not warranted on the record. TMIA has taken isolated remarks out of context and not fairly represented what occurred.[79] For example, TMIA excerpts parts of the transcript that suggest an arbitrary rejection of unspecified evidence by a board that is confused and uninformed. TMIA's Brief at 6-7. In fact, in one instance,

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[77] One point that is clear and disputed by no one is that safety-related, as used in TMIA's contention 5, was meant to have a common-sense, ordinary dictionary meaning. There was no intent to reflect any particular NRC usage of the term. *See* Tr. 2575-77, 2860-62, 2865-67. We therefore do not have the problem here that we recently certified to the Commission for resolution in *Long Island Lighting Co.* (Shoreham Nuclear Power Station, Unit 1), ALAB-769, 19 NRC 995 (1984).

[78] The Board, in fact, noted subsequent areas of disagreement between TMIA and Colitz. LBP-81-32, *supra*, 14 NRC at 484 (¶ 292).

[79] It should be kept in mind that TMIA's contention 5 alleged that licensee *had violated its own procedures* in deferring safety-related maintenance. But as the Licensing Board found, licensee had and has no fixed times within which certain work is to be performed. *Id.* at 483-84 (¶ 289). Strictly speaking, then, the Board could have ended its inquiry into that portion of the contention early on. Nonetheless, the Board found it important to pursue the broader issue of whether the examples of deferred maintenance cited by TMIA demonstrated significant deficiencies in licensee's maintenance practices. *Id.* at 484 (¶ 290).

after initially leaning toward rejection of certain evidence (TMIA Exh. 34A-K) on the ground that it was not related to nuclear safety, the Board nevertheless *admitted* it because it concerned quality control in licensee's record keeping practices. Tr. 3727-32.[80] In another instance cited by TMIA, the Board rejected TMIA Exh. 29A-D because the discussion on the record showed no safety significance to the work in question. Tr. 3671-75. TMIA claims this action was arbitrary because the Board "admittedly did not have sufficient information as to the exhibit's relevance to make a fair ruling." TMIA's Brief at 6. In fact, the Board simply referred to "a void of information" on the subject work orders, pointed out by counsel for the Commonwealth. Tr. 3675-76. If anything, that "void in information" detracts further from the probative value of the proffered exhibit and shows the correctness of the Board's ruling.

There is no doubt that this part of the record reflects a certain amount of confusion on the part of *all* participants. But this was of TMIA's own making; had it cooperated during discovery, there would have been no need for the Board to alter the usual order of procedure. *See* pp. 1245-46, *supra*. As a consequence, the presentation of evidence and testimony was unavoidably complicated. The transcript only reflects the Board's frustration in attempting to develop the record as fully and efficiently as possible — not the arbitrariness ascribed to it by TMIA. *See, e.g.*, Tr. 3032-38, 3126-32, 3662-63, 3731-32. TMIA wanted the Board to "draw its own conclusions." Tr. 2575. It appears to us that the Board did just that. It ruled on a substantial amount of evidence tendered by TMIA, admitting a good deal of it in the process. TMIA has not directed us to any particular evidence that was rejected and *explained* why it should have been admitted. We thus have no cause to conclude the Board was arbitrary in its treatment of TMIA's case on contention 5.

TMIA also argues that the Board failed to explain adequately the basis for its conclusions on maintenance deferral. In particular it objects to the Board's direct reliance on licensee's testimony for the conclusion that TMIA's work request exhibits do not show improper maintenance deferral. *See* LBP-81-32, *supra*, 14 NRC at 485-86 (¶ 296). We disagree with TMIA and find the Board's explanation sufficient. The Board noted that licensee's responsive written testimony addressed, in detail, each of the work requests admitted as TMIA's exhibits. The Board found nothing inconsistent between that testimony and the witnesses' additional testimony at the hearing. The Board also pointed out that, during its

[80] The Board discussed this evidence in its decision as well. *Id.* at 487, 490 (¶¶ 298, 308).

cross-examination of the witnesses, TMIA did not attempt to elicit further information about the exhibits.[81] Rather than setting out this extensive testimony, the Board listed all 20 exhibits with explicit references to the portion of the record that explained why each work request was not an example of improperly deferred maintenance. *Id.* at 486 (¶ 296). Given that no effective challenge was made to the testimony, no purpose would have been served by the Board's rehearsal of it. We thus find the Board's approach entirely reasonable in the circumstances.

Even on appeal, TMIA makes no more than a generalized attack on licensee's rebuttal to its work request exhibits. *See* TMIA's Brief at 8. Nonetheless, we have reviewed each exhibit and the corresponding testimony and concur in the Licensing Board's finding that no significant maintenance was unduly delayed. While many of the work requests seemed to show long delays in repair, licensee's witnesses explained that often the maintenance was performed immediately, but the paperwork on closing out the job was delayed or the matter would be held open for observation for six months or more. *See, e.g.*, Shovlin, *et al.*, fol. Tr. 13,533, at 25 (TMIA Exh. 13), 52-53 (TMIA Exh. 11), 76-77 (TMIA Exh. 31). In other instances, items were properly identified for repair at some time in the future — *i.e.*, at the next scheduled outage. *See, e.g., id.* at 53-55 (TMIA Exh. 19), 75-76 (TMIA Exh. 20). In still others, design modification was thought preferable to a repair (although not for safety reasons), leading to a longer than usual closeout of the work request. *See, e.g., id.* at 23-24 (TMIA Exh. 12), 56-58 (TMIA Exh. 22). In many cases, the problem was paperwork (*i.e.*, bad record keeping), not deferral of important safety-related work. *See, e.g., id.* at 30-34 (TMIA Exhs. 42, 43), 61-68 (TMIA Exhs. 16, 17, 18, 28).

Where the Board did address at greater length the particular items involved in the work requests, TMIA objects to the Board's conclusions. TMIA's Brief at 8-9. *See* LBP-81-32, *supra*, 14 NRC at 486-88 (¶¶ 297-299). In one instance, the Board *agreed* with TMIA that its exhibits showed bad maintenance practices in delaying replacement of certain filters. But the Board also found that licensee's new inclusion of monthly filter inspections in its preventive maintenance program would help to avoid a potential effect on safety-related equipment in the long run. *Id.* at 487 (¶ 298). We see no basis for disagreeing with the Board's treatment of this matter. Another of TMIA's exhibits concerned an alarm that infrequently (once or twice a year) sounds for no apparent

[81] The Commonwealth, however, conducted some cross-examination. *See, e.g.*, Tr. 13,599-606.

reason. The Board concluded from the record that this had no safety significance but commented critically on what was, by that time, a four-year delay in repairing it. *Id.* at 487-88 (¶ 299). We join in the Board's criticism of such inordinate delays, but we are unable to conclude on this record, as TMIA suggests, that this matter presents a risk to the public health and safety. *See* Shovlin, *et al.*, fol. Tr. 13,533, at 27-29; Tr. 13,602-04.

Although the Licensing Board found (correctly, in our view) no significant deferral of safety-related maintenance, that was not intended as an endorsement of all aspects of licensee's maintenance program. The Board found licensee's former system for designating the priorities for corrective maintenance work "clearly unsatisfactory as conceded by Licensee." LBP-81-32, *supra*, 14 NRC at 482 (¶ 285). Under that system, there were three general priorities: Priority 1 - urgent; Priority 2 - routine; Priority 3 - low priority. They reflected neither an estimate of work time for the job nor its safety significance. Shovlin, *et al.*, fol. Tr. 13,533, at 51. As a consequence, the designation of a priority for a given work request was a largely subjective undertaking. Because it could not be relied on to highlight the really important maintenance, "real" priorities were determined on an *ad hoc* basis at meetings held three times a week and attended by maintenance and operations personnel. LBP-81-32, *supra*, 14 NRC at 482 (¶¶ 285-286).

As of October 1980, this system was supplanted by the following four new priority categories:

> *Priority 1:* Can *only* be classified by superintendents, department heads or shift supervisors; will cause a plant shutdown; reduce generation; has a time clock of very short duration; is an immediate industrial or nuclear safety hazard; compromises nuclear safety or security, reactor control or power conversion cycle control system in so far as to present a clear threat of initiation of a trip or severe transient; imposes or threatens increased personnel radiation exposure; constitutes one element of a multievent failure which would result in initiation of a trip or transient.
>
> *Priority 2:* Could cause a plant shutdown if operation is continued too long; redundant component and backup is no longer available; could cause a plant limitation in the near future; time clock on the component that will require it to be repaired in a timely fashion; items that should be repaired when plant conditions allow.
>
> *Priority 3:* Routine corrective maintenance that does not impact plant operation.
>
> *Priority 4:* Corrective maintenance to clear minor problems that don't actually affect the operation of any components; all change modifications and any improvements that are not related to plant performances.

Id. at 481-83 (¶¶ 284, 287). The old work request form was also replaced by a computerized "job ticket." This reflects the work originator's priori-

ty recommendation (which may be changed by his or her immediate supervisor) *and* the priority ultimately established by the Manager of Plant Maintenance (or his or her designee). Tr. 3096-98.

TMIA contends that the new priority system does not amount to any real change. It claims the categories are still too subjective and ambiguous, and there are no guidelines for determining, for example, what constitutes "an immediate industrial or nuclear safety hazard." TMIA also argues that the review process is essentially the same: the initiator recommends a priority and his or her supervisor reviews it; the new procedures and computerized job ticket simply formalize this. In TMIA's view, the changes reflect a concern for form over substance, while the potential for the abuses of the old system remains. TMIA also complains that the individual managers responsible for maintenance are the same now as under the old system.

We disagree with TMIA, in that we believe licensee's new priority designations do represent a meaningful improvement over its former system. Priorities 1 and 2, in particular, provide useful guidance for plant personnel. *See* p. 1252, *supra*. Any such system is inherently subjective, no matter how detailed the priority categories, and will require varying degrees of skilled and informed judgment. Licensee's new priorities are no exception. But it must be kept in mind that it is not laymen who will make these maintenance determinations. It will be trained, experienced plant personnel,[82] and their decisions will be reviewed by at least two levels of management.

With respect to that review procedure, however, we agree with TMIA that there appears to be little or no substantive change from the previous system.[83] The originator of the work request recommends a priority, his or her supervisor reviews it, and the Manager of Plant Maintenance (or his or her designee) passes ultimate judgment on the matter. The only real difference from the old system is that the new job tickets show on their face the ultimate priority assigned by the Manager of Plant Maintenance. *See* Tr. 3096-99. The new *form* is thus somewhat clearer, but we fail to perceive any substantive change in how priorities are assigned and reviewed. Unlike TMIA, however, we do not find anything objectionable in this procedure. It seems eminently reasonable and

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[82] This provides yet another example of the important role of training in the safe operation of TMI-1. *See* p. 1239, *supra*. Properly trained personnel should find these priorities unambiguous and readily amenable to application to most maintenance problems that arise.

[83] We are compelled to note that both the written and oral testimony on the new maintenance procedures is less than clear and does not always appear entirely consistent. *Compare* Lic. Exh. 2; Shovlin, *et al.*, fol Tr. 13,533, at 14-19, 40-41; Tr. 3096-99. Our conclusions are based on a common-sense reading of the record. Of course, if our understanding of the record is in error, we expect the parties to call that to our attention, with proper documentation.

desirable that the work request originator's supervisor would review his or her recommendation and that the Manager of Plant Maintenance (or similar official) would be responsible for the ultimate priority assignment.[84]

TMIA characterizes as the "most relevant point regarding maintenance practices" the fact that the same pre-1979 maintenance managers are still in charge of the department today. TMIA's Brief at 12.[85] What should not be overlooked, however, is that these are the same managers who recognized the need for improvement in the system and developed new procedures to that end. Moreover, as discussed above, we agree with the Licensing Board that there was no significant deferral of safety-related maintenance. Hence, the abuses TMIA perceives have not been shown on this record. We have no basis to adjudge them "incompetent," as TMIA suggests. *See generally* LBP-81-32, *supra*, 14 NRC at 419-22, 440-41 (¶¶ 87-94, 156-162).

2. *Record Keeping*

Another aspect of TMIA's contention 5 alleged that the failure to keep accurate and complete maintenance records shows licensee's disregard for safety. The Licensing Board found that TMIA had demonstrated poor record keeping in the past by licensee. *Id.* at 489 (¶ 304). For example, the Board noted problems with duplicative work requests, unexplained or ambiguous "cancellations," and lost job tickets. *Id.* at 489-90 (¶¶ 305-309). The Board concluded, however, that licensee has properly responded to these deficiencies, principally through a new computerized system that tracks the maintenance job tickets. *Id.* at 490 (¶ 310). TMIA demurs, claiming that the new computer system itself has problems and has not been shown to be effective.

To be sure, when the new computer system ("Generation Maintenance System," or GMS) was developed in the late 1970s, some of the same record keeping problems as existed under the old system continued. *See* Shovlin, *et al.*, fol. Tr. 13,533, at 29-30. But as the Board pointed out, TMIA has ignored licensee's corrective actions undertaken since 1979. LBP-81-32, *supra*, 14 NRC at 491 (¶ 312). *See* Shovlin, *et al.*, fol. Tr. 13,533, at 30-34. Many of the early startup problems in the GMS were the inevitable result of making the transition from a manual

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[84] Further, this hierarchy should result in uniformity in the application of the four priorities to particular work requests.

[85] The former lead shift maintenance foreman, however, has recently been reassigned and replaced, apparently as a routine personnel change. Letter from D.B. Bauser to Appeal Board (January 27, 1984) at 2.

to an automated information system. Licensee has moved to correct those deficiencies, and the testimony by the time of the hearing revealed an effective system for tracking maintenance work requests. *Id.* at 12-21, 35-39.[86]

That is not to say licensee's record keeping system is perfect. The Board noted several areas, all involving quality control (QC), where there is still room for improvement. TMIA, however, has failed to show that any of these areas is of safety significance.

First, the Board opined that Quality Control should sign off (initial) at each QC "observation hold point[]," rather than only at the completion of the job. LBP-81-32, *supra*, 14 NRC at 492 (¶ 317). The Board found that licensee had complied with its own procedures in this regard and that it did not reveal "a serious problem on the part of management attitude." Nonetheless, the Board found that the ability to audit the QC records would be enhanced by the addition of intermediate QC sign-offs. *Id.* at 495-96 (¶ 328). Because these extra notations will supplement the maintenance history for a particular job, we join in the Board's recommendation. Requiring this as a condition of restart, however, is not warranted; the significant factor is that QC signs off at the completion of the job.

Second, the Board commented that delays in noting QC approval for the work should be minimized. *Id.* at 492 (¶ 318). It noted as well, though, that these delays were not shown to have an impact on plant safety, and that the enlargement of licensee's QC staff should result in fewer future delays. *Id.* at 496 (¶¶ 329-330). TMIA has presented no reason to doubt the Board's judgment on that score.

Third, the Board strongly urged licensee to consider revising its new job ticket format to reflect better the nuclear safety effect of the requested *work*, where the maintenance is to be performed on a *non-QC* component. *Id.* at 492-93 (¶ 319). We endorse the Board's view, and apparently licensee does as well. It has now revised its job ticket so that management must explicitly agree that particular work will have no effect on nuclear safety, irrespective of the QC/non-QC status of the work. *See* Board Notification BN-84-016 (January 27, 1984).[87]

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[86] One action licensee took was a monthly review of all outstanding work requests in an effort to clear out those that had been cancelled, completed, or superseded. Shovlin, *et al.*, fol. Tr. 13,533, at 30. We have been informed that this review is now undertaken on a quarterly basis "due to the fact that the great majority of old work requests have, over time, been removed from the computer system." Letter from E.L. Blake, Jr., to Appeal Board (November 29, 1983), Attachment at 2.

[87] The Licensing Board also noted that, due to a limited data base, the Component History Report provided by the GMS does not always reliably reflect the QC status of the component involved in a given work request. LBP-81-32, *supra*, 14 NRC at 491 (¶ 313). Acknowledging this shortcoming in i

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While pointing out these several areas that, in its view, warrant minor improvement, the Board emphasized the clear benefits of the GMS:

> The automated system, with the rapid retrieval of information in various formats, and the administrative checks to avoid the problems of duplicative requests, multiple work not being documented as it was performed, and priority designations being checked at appropriate management levels to assure the computerized system accurately reflects the real priority, all represent substantial improvement.

LBP-81-32, *supra*, 14 NRC at 490 (¶ 310). It therefore reasonably concluded that licensee's conceded record keeping problems appeared to be solved. Because any such finding is necessarily predictive, the Board suggested that the staff give special attention, during its routine future inspections, to the efficacy of licensee's already improved maintenance record system. *Id.* at 492 (¶ 315). TMIA has shown no basis for *requiring* more.

3. Overtime

TMIA's contention also alleged that licensee extensively relied on overtime in performing maintenance, in further disregard of the public's safety. Its argument is similar to that of the Aamodts (*see* pp. 1242-44, *supra*): overtime should be prohibited because it increases the risk of carelessness due to fatigue. Although the Licensing Board considered this issue at length, TMIA claims the Board gave this matter "shoddy treatment." TMIA's Brief at 14. *See* LBP-81-32, *supra*, 14 NRC at 496-501 (¶¶ 331-348). According to TMIA, the Board mischaracterized the testimony, was arbitrary, and failed to provide a reasoned analysis of the evidence.

At the outset, the Licensing Board correctly observed that "[m]uch of the maintenance and modification work [at a nuclear plant] can be done only during refueling outages." *Id.* at 496 (¶ 332). A staff large enough to perform these functions without overtime would be idle much of the time during normal operation. Moreover, the quality of safety-related maintenance is often enhanced when it is begun and completed by the same crew, particularly where some of the employees have special skills. Licensees must balance these various considerations. *Id.* at 496-97 (¶¶ 332-333).

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system, licensee stated that it does not consider this particular computer printout as official documentation. As the history in the data base expands, its reliability will be enhanced. In the meantime, machinery history is maintained on cards and not through the use of this computer printout. *See* Shovlin, *et al.*, fol. Tr. 13,533, at 38-39.

With that in mind, the Board turned to the evidence. It heard from three witnesses, all current or former TMI maintenance employees. Their testimony reflected the whole range of views on overtime. Some employees personally disliked it but felt compelled by management to work overtime, some liked it for the extra money, and some were neutral. *Id.* at 497-98 (¶¶ 335-338). The Board considered the testimony highly subjective and was unable to determine if licensee had had sound overtime practices or not. But it relied heavily on a staff inspection report that found no evidence that licensee's use of overtime had affected the quality of the maintenance performed. *Id.* at 498-500 (¶¶ 339-342). The Board also found that TMIA's concerns — not supported by the record — were, in any event, mooted by a subsequent staff statement on overtime, IE Circular No. 80-02. *Id.* at 500 (¶ 343).

The Board's decision belies TMIA's characterization of it as "shoddy treatment." The decision is consistent with the testimony and other evidence, and we have been given no reasonable cause to disturb the Board's findings on maintenance overtime practices.[88] Insofar as TMIA objects to the Board's mootness finding, we would agree that the mere adoption by the staff of a new "policy" on overtime does not in and of itself moot TMIA's issue. Unless the policy amounts to a regulatory requirement or a party agrees to be bound by it, there is no assurance that the standards enunciated in the policy will be observed and enforced. But as we explained at p. 1243, *supra*, since the Licensing Board's decision, the Commission has adopted a new overtime policy (embodied in Generic Letter No. 82-12), and licensee has agreed to be bound by it.[89] The policy, which discourages routine heavy use of overtime and sets guidelines for those inevitable occasions when overtime will be necessary, expressly applies to key maintenance personnel and major maintenance work. Deviation from the guidelines is permitted only if senior management, taking account of personnel effectiveness, authorizes it. Generic Letter No. 82-12, *supra*, Attachment at 2-3. In our view, this new policy, binding on licensee, is an adequate response to TMIA's stated concern in contention 5 about the "extensive" use of overtime for maintenance work.

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[88] Hearing from additional witnesses, as TMIA urges, would not have added to the scope of the testimony presented to the Board (*see* p. 1257, *supra*), or made the employees' personal views on overtime less subjective. *See* LBP-81-32, *supra*, 14 NRC at 498 (¶ 339).

[89] As noted at p. 1243, *supra*, licensee has incorporated the new overtime restrictions into its technical specifications. As such, they become part of its operating license and are legally binding. *See Portland General Electric Co.* (Trojan Nuclear Plant), ALAB-531, 9 NRC 263, 272-73 (1979).

VI. MANAGEMENT RESPONSE TO THE TMI-2 ACCIDENT

In CLI-80-5, *supra*, 11 NRC at 409, the Commission directed the Licensing Board to consider (as Issue 10)

> whether the actions of Metropolitan Edison's corporate or plant management (or any part or individual member thereof) in connection with the accident at Unit 2 reveal deficiencies in the corporate or plant management that must be corrected before Unit 1 can be operated safely[.]

Licensee and the staff presented direct evidence on this issue, but none of the intervenors did. The staff, and Licensing Board as well, focused principally on the flow of information, during and after the accident, from licensee to the NRC, the Commonwealth, and others.[90] On appeal, TMIA argues that the Board has not resolved Issue 10, and that there is no reasonable assurance that licensee has corrected all the asserted management problems revealed by the TMI-2 accident.

A. Witness Credibility

TMIA first complains that the witnesses presented by licensee on this issue were not credible. Those witnesses were: William S. Lee, President of Duke Power Company, who served as an assistant to Herman Dieckamp (GPU President) beginning a week after the accident; William Wegner, a consultant from Basic Energy Technology Associates, Inc. (BETA); and Robert W. Keaten and Robert L. Long (*see* note 48, *supra*), two members of licensee's management. While we would not go so far as to find them "not credible," we do find that the direct testimony of licensee's witnesses was not particularly probative or responsive to the issue at hand. But we also find that the Licensing Board appears to share that view, inasmuch as it did not rely on their testimony to any significant extent in reaching its conclusions on Issue 10.

For example, after summarizing Lee's testimony, the Board noted that Lee described his view of licensee's response to the accident after he arrived on the scene one week later, rather than licensee's response at the time — which is the focal point of the "information flow" issue. LBP-81-32, *supra*, 14 NRC at 539 (¶ 465). *See* Lee, fol. Tr. 13,251. As for Keaten and Long, the Board found their testimony "more positive

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[90] Also included under Issue 10 was the Board's brief discussion of the then-ongoing Department of Justice investigation into certain of licensee's past practices. *See* LBP-81-32, *supra*, 14 NRC at 557 (¶¶ 504-506). This matter came to be known as the "Hartman allegations" and is discussed more fully in ALAB-738, *supra*, 18 NRC at 183-92. *See also* p. 1205, *supra*; pp. 1276-78, *infra*.

than appears warranted," and does not rely on it for any substantive findings. LBP-81-32, *supra*, 14 NRC at 539 (¶ 466). *See* Keaten and Long, fol. Tr. 13,242.[91] The Board found the "broader perspective" of Wegner's brief testimony on this issue "more accurate." According to him, the problems that led to the accident were shared throughout the civilian nuclear power industry. At the time of his testimony before the Board, Wegner considered it still too early to expect that all of the deep seated problems would be corrected. He essentially concluded, however, that licensee was making progress in that direction, sufficient to permit restart. Wegner, fol. Tr. 13,284, at 33-35. Other than summarizing his testimony, however, the Board does not appear to have given it any particular weight on Issue 10. Indeed, Wegner's testimony is so general and brief that the Board would have been hard pressed to use it as support for any specific finding.

Thus, although the testimony of licensee's witnesses on Issue 10 was not especially useful, it also did not provide the evidentiary basis for any critical finding by the Board. Accordingly, we see no error in the Board's decision in that regard.

B. Information Flow

1. Motion to Reopen (TMIA Exhs. 49 and 50)

TMIA argues that the Licensing Board erred in rejecting two exhibits it offered in connection with a motion to reopen the record on Issue 10. TMIA Exh. 49 is a March 1981 report by the Majority Staff of the U.S. House of Representatives Committee on Interior and Insular Affairs, entitled "Reporting of Information Concerning the Accident at Three Mile Island." It is known as the "Udall Report" and is critical of licensee's actions on March 28, 1979, the date of the TMI-2 accident. TMIA Exh. 50 is actually TMIA's July 2, 1981, Motion to Require Further Development of the Record. Attached to the motion is a June 1981 review of the Udall Report by Edward C. Abbott, a Senior Fellow for the NRC's Advisory Committee on Reactor Safeguards (ACRS). Abbott agrees with the Udall Report's conclusions.

According to TMIA, "[t]he Board took official notice of every other federal government report on the information flow topic," except for the Udall Report. That was the only such report that concluded that two of licensee's officials, former TMI Station Manager Gary Miller and

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[91] The Licensing Board could also have fairly described it as "self-serving"; in our view, the testimony is more self-serving than is ordinarily expected from a proponent's own statement.

former Met Ed Vice President John Herbein, "deliberately withheld information" on the day of the accident from state and federal officials. TMIA's Brief at 24. The others, in particular Staff Exh. 5, NUREG-0760, "Investigation into Information Flow During the Accident at Three Mile Island" (January 1981), at 11, concluded that, while licensee was "not fully forthcoming on March 28, 1979," neither did it intentionally withhold information. In TMIA's view, the Licensing Board relied too heavily on NUREG-0760: it used facts selectively and is therefore not a credible document. It asserts that the Board should have formally admitted the Udall Report and Abbott's review to provide more balance. TMIA also offered, a week after it moved to reopen, to provide witnesses to sponsor the two exhibits. Tr. 22,997-98. On appeal, TMIA requests that we review "sua sponte" [sic: de novo] all of "the raw materials" on this subject. TMIA's Brief at 25.

The record on information flow during the accident had closed several months before TMIA filed its motion to reopen for receipt of Exhs. 49 and 50. TMIA was therefore obliged to show that the motion was timely and addressed a significant issue, and that it might alter the outcome. *Diablo Canyon, supra* note 50, 11 NRC at 379.[92] Also, the Board had explained on several occasions earlier in the hearing that the Udall Report was not the type of matter of which the Board could take official notice and that, for it to be treated as formal evidence, it must be proffered in a timely fashion and sponsored by a witness. Tr. 12,006-07, 20,776-82, 21,011-15. *See Duke Power Co.* (William B. McGuire Nuclear Station, Units 1 and 2), ALAB-669, 15 NRC 453, 477 (1982).

Several months later, on the last day of the hearing, when TMIA for the first time formally tendered the Udall Report with possible witness sponsorship, the Board was justified in finding that it was not a timely offer. Further, TMIA conceded that the raw material in the Udall Report was essentially the same as in NUREG-0760, which was in evidence. TMIA Exh. 50, Motion at 2. Only the conclusions differed. Thus, as to both the Udall Report and Abbott's review, the Board stressed that, because it (the Board) was responsible for reaching conclusions on licensee's response to the accident, the conclusions of others would not be of any particular value. Tr. 22,998-99. In other words, while the *facts* as to what happened were important (and were in evidence in NUREG-0760), the *opinions* of the Udall committee and Abbott would not have influenced the Board's decision one way or the

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[92] TMIA incorrectly states the staff "endorsed" its motion. TMIA's Brief at 24. Rather, the staff did "not interpose an objection" and suggested that, if the Board granted the motion, it should also admit into evidence other reports, which were more favorable to licensee's position. Tr. 22,965.

other. We agree with the Board here that, once it is fully apprised of the facts, it is able and obliged to form its own conclusions. This is not a situation involving the competing opinion testimony of experts in a technical field. Thus, the Board did not err in denying TMIA's motion.

The important consideration is that, despite TMIA's contrary representation to us, the Board treated equally all of the various governmental reports and memoranda concerning information flow that were not admitted into evidence. It did not take official notice of any of them or make any findings solely on the basis of such extra-record material. The only actual evidence on this issue was NUREG-0760 (Staff Exh. 5), and it was properly sponsored by a witness, who thus was available for cross-examination. *See* LBP-81-32, *supra*, 14 NRC at 540-42 (¶¶ 469-471). Nevertheless, the Licensing Board was unquestionably aware of the conflicting conclusions reached on basically the same underlying data. In fact, to demonstrate its awareness of these views it set forth and discussed significant portions of the Udall Report and other documents. *Id.* at 546-51 (¶¶ 482-489). Furthermore, the Board was not wholly persuaded by the conclusions and terminology of NUREG-0760 either.[93] The Board "interpreted" the statement in NUREG-0760 that licensee was "not fully forthcoming" in providing information as meaning that licensee's officials intentionally — *i.e.*, consciously — held back information, possibly because they did not appreciate the severity of the situation. The Board agreed with former Commissioner Hendrie's comment that this was "cold comfort indeed." *Id.* at 544 (¶ 477).

In sum, we see no purpose that would have been served by the formal receipt into evidence, at the eleventh hour, of the Udall Report and Abbott's review of it. The factual material discussed by both was already in evidence, and the Board was aware of the differing conclusions reached on those same data by several different entities. There is no error in the Board's evidentiary rulings on TMIA Exhs. 49 and 50.

2. John Herbein and Gary Miller

TMIA's principal argument in regard to the Board's treatment of Issue 10 is that the Board failed to pursue thoroughly the roles of licensee officials John Herbein and Gary Miller in responding to the accident. For example, TMIA cites an instance where Miller (former

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[93] TMIA also attacks the credibility of NUREG-0760, contending that at a December 1981 public meeting its author, Victor Stello, in essence recanted his earlier conclusions and now agrees with the Udall Report. TMIA's Brief at 25. But in a subsequent memorandum to Commissioner Gilinsky, served on the parties on March 10, 1982, Stello states that his views on information flow "remain unchanged" from those expressed in NUREG-0760.

TMI Station Manager) knowingly provided incomplete information to Commonwealth official William Dornsife. *See* Staff Exh. 5, NUREG-0760, at 108-1 to 108-3, 112-1 to 112-5. According to TMIA, the Board should have questioned Dornsife about this matter at the hearing. As for Herbein, TMIA contends that he demonstrated bad judgment on several occasions (*e.g.*, assertedly pulling Miller offsite at the height of the emergency to meet with Lieutenant Governor Scranton). Acknowledging that it (TMIA) declined to litigate this matter, TMIA argues that the Board was "derelict in its duty" to pursue Herbein's conduct on its own. TMIA's Brief at 27. The implications for the public health and safety are significant, according to TMIA, because of the high level position Herbein held with licensee. TMIA also expresses concern that the Board did not examine fully how the involved individuals interpreted the events of March 28, 1979.

It would certainly be unfair to suggest that the Board did not devote considerable attention to licensee's role in providing the Commonwealth and the NRC with information at the time of the accident. *See generally* LBP-81-32, *supra*, 14 NRC at 537-55 (¶¶ 461-497). It is apparent from the Board's opinion itself, however, that not all the questions concerning information flow were fully explored on the record. In addition to raising questions about the principal evidence, NUREG-0760 (*see* p. 1261, *supra*), the Board identified a number of points or witnesses that *could* have been pursued further. *See, e.g., id.* at 543-44, 552 (¶¶ 475, 476, 491).

But with respect to Miller, the Board stressed that no party had alleged he was unfit for his then-present position as Manager of the Startup and Test Department, and that intervenors had not questioned available witnesses on Miller's actions. Conceding the relevance of personal integrity to any job, the Board concluded Miller's role in the flow of accident information had assumed less importance in view of Miller's change in job duties. *Id.* at 545 (¶ 479). The Board made similar observations concerning Herbein. It noted TMIA's failure to litigate this matter in a timely fashion and found particularly significant the Commonwealth's and the staff's decisions not to challenge Herbein's fitness for a management position. *Id.* at 551-52 (¶ 490). Also influenced by the Commission's apparent determination not to take enforcement action with respect to information flow, the Board concluded it would not be worthwhile, from a public health and safety standpoint, to conduct further inquiry on its own, especially given its limited investigatory resources. *Id.* at 552-53 (¶¶ 491-493).

Although we have both the benefit of hindsight and an appreciation for the Board's enormous task in conducting this prolonged hearing on a

plethora of issues in addition to those dealing with management competence, we agree with TMIA that the Board should have pursued the inquiry into information flow more fully on its own. Despite the absence of active intervenor participation on this issue, the Board was nonetheless obliged to make all reasonable efforts to resolve lingering questions. In CLI-79-8, *supra*, 10 NRC 141, the Commission ordered the Licensing Board to conduct a hearing on specified issues. In CLI-80-5, *supra*, 11 NRC 408, it further "directed" the Board to examine 3 broad issues and 13 specific ones including the actions of licensee's management in response to the TMI-2 accident. Neither the hearing itself nor the litigation of the specified issues was dependent upon the active participation of intervening parties. In the course of hearing and deciding those issues, the Licensing Board was thus bound "to ensure that it receive[d] all information necessary to a thorough investigation and resolution of the questions before it." CLI-79-8, *supra*, 10 NRC at 147.[94]

To be sure, the Board's lack of its own investigating team and lack of authority to direct the staff in the performance of its duties effectively limit the Board's ability to comply with the Commission's mandate. *See Carolina Power and Light Co.* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), CLI-80-12, 11 NRC 514, 516 (1980). But the Board can at least call and examine witnesses of whom the Board is aware and who are likely to have information necessary for the proper resolution of the issues before it. *See generally* 10 C.F.R. § 2.718.[95] In this case, the Board could have called Dornsife and another involved Commonwealth official, Thomas Gerusky, as well as Herbein and Miller, to testify directly about the communications that occurred among them on March 28, 1979.[96]

We also believe the Board was wrongly "influenced by the fact that the Commission itself, in the context of its oversight of the staff's enforcement actions, elected not to recommend further censure of individuals because of improper disclosure of information." LBP-81-32, *supra*, 14 NRC at 552 (¶ 492). Generally, where the Commission wants to foreclose adjudicatory inquiry into a matter in favor of enforcement

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[94] The Licensing Board's pursuit of this matter is thus distinguishable from a board's raising of an issue *sua sponte* in an operating license application proceeding. *See* 10 C.F.R. § 2.760a.

[95] It is clear from *Summer*, *supra*, 14 NRC at 1152-57, that, in the proper circumstances, NRC adjudicatory boards are empowered to call witnesses to help develop the record. Our strong criticism of the Licensing Board's effort in that case to call outside consultants to give *expert* testimony is easily distinguished from the situation here, where the needed testimony concerned the witnesses' factual recollections, more than expert opinions.

[96] The Board obviously had several other individuals in mind as well who might be able to contribute testimony. *See* LBP-81-32, *supra*, 14 NRC at 552 (¶ 491).

action, it so indicates unambiguously, as in the case of the O and VV incident. *See* p. 1231, *supra*. Here, the Board cites, and we are aware of, no expression or even suggestion of such a Commission intent with regard to the information flow issue.[97] Moreover, we view it as unwise for a board to give too much weight to enforcement action or the lack thereof. The Commission's enforcement program has a different purpose and scope than adjudication. Further, the independence of the adjudicatory boards is essential to preserve the integrity of the hearing process. The Commission itself noted in *South Texas, supra*, 12 NRC at 289, that

> [a] decision by the Director of Inspection and Enforcement in an enforcement action does not bind a [l]icensing board in an operating license adjudication from making a decision which would further restrict, or even deny a license for, the operation of a facility. The [b]oard must make its decision based upon the record in the case before it.

The same should apply for a special proceeding such as this, particularly when the Board has been directed to hear certain issues that may also be subject to enforcement action.

Be that as it may, we see no purpose that could be meaningfully served at this late date by requiring further hearing on Herbein's and Miller's actions on the day of the accident. Apart from denial of restart authorization, the Board correctly observed that "the most adverse outcome of such an inquiry . . . would be the removal of Mr. Herbein from some or all of his proposed duties." LBP-81-32, *supra*, 14 NRC at 552 (¶ 491) (footnote omitted). The same would be true for Miller. That has effectively been accomplished: neither is now employed by GPU Nuclear, the actual licensee subject to NRC jurisdiction. *See* notes 3 and 45, *supra*.

Although TMIA suggested to the Licensing Board that this would be an appropriate remedy, it now argues on appeal that the removal of these licensee officials does not "exonerate the corporate entity . . . ultimately responsible. . . ." TMIA Exh. 50, Motion at 3; TMIA's Brief at 27. We would agree that, *if* further hearing established significant improper action by Herbein and Miller — or indeed any employee — the corporate entity itself must bear some of the responsibility. The degree would depend on the circumstances and conduct involved. In that sense, then, the corporate entity can never be held blameless for past acts. But the question here is whether the corporate entity can reasonably assure more responsible conduct by its managers in the future.

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[97] Indeed, it is by no means clear that further enforcement action is out of the question. Various investigations of TMI are still under way and inquiry into the information flow issue may well be included. *See, e.g.*, Board Notifications BN-[83]-117 (August 4, 1983) and BN-83-152 (October 3, 1983).

A corporate entity is a "person" in the legal sense that it can sue and be sued and incur responsibilities, but in a real sense it can "act" solely at the direction of individuals. Replacing high level *managers* can therefore effect a corresponding substantive change in the philosophy and overall behavior of *management.* In this connection, we stress that we find only that the Board erred in not pursuing the Herbein and Miller matter further; we do not pass judgment on their actions. Nonetheless, it cannot be gainsaid that their absence from the ranks of licensee's managers removes a large hurdle in licensee's path to proving it is competent to manage TMI-1 in a safe manner.[98]

3. The Dieckamp Mailgram

On May 9, 1979, Herman Dieckamp, President of GPU, sent a mailgram to Congressman Morris Udall in an effort to correct assertedly erroneous information about TMI reported in the *New York Times* the day before. The story concerned a "pressure spike" that had occurred within the TMI-2 containment at about 1:50 p.m. the day of the accident. As the Licensing Board explained, this "was a sudden increase in containment pressure from about 3 to 28 psig, followed by a rapid decrease to 4 psig. . . . It was caused by a sudden burning or explosion of hydrogen, which would be symptomatic of core damage." LBP-81-32, *supra,* 14 NRC at 555 (¶ 499). This increased pressure initiated containment spray. There are conflicting statements, set out in NUREG-0760, as to how several employees in the TMI-2 control room interpreted this at the time. Licensee did not report the pressure spike to the NRC or the Commonwealth, however, until a day or so after it occurred. *Ibid.* (¶ 499). The pertinent part of Dieckamp's mailgram for our purposes here is his statement that

> [t]here is no evidence that anyone interpreted the "pressure spike" and the spray initiation in terms of reactor core damage at the time of the spike nor that anyone withheld any information.

Staff Exh. 5, NUREG-0760, at 117-1.

The staff investigated this matter to determine if Dieckamp's mailgram contained a material false statement in violation of section 186 of

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[98] We also note that the "corporate entity" to which TMIA refers has been denied permission to operate TMI-1 for more than five years. Virtually every aspect of its plant management and operation has undergone, and will continue to be subject to, scrutiny by the NRC and myriad external organizations (including intervenors) greater than that to which most other plants are subjected. Thus, it cannot be fairly said that the corporate entity has escaped sanction for its action in connection with the TMI-2 accident.

the Atomic Energy Act, 42 U.S.C. § 2236, and concluded it did not. *Id.* at 45-46. The Licensing Board considered this matter more broadly, in terms of its implication for management integrity. Nonetheless, it agreed with the conclusion of the staff witness who testified on this issue that Dieckamp believed the statement was true when he made it. As the Board saw it, the staff's inquiry into the matter was "equal to or better than any the Board could make." Thus, it regarded the staff view as "reliable enough to set the matter to rest." LBP-81-32, *supra*, 14 NRC at 556 (¶ 501). *See also ibid.* (¶ 503). The Board equivocated, though, commenting that, in retrospect, perhaps it should have pursued the matter by recalling Dieckamp to testify. *Ibid.* (¶ 502).[99] It decided against this, however, because it would mean "substantial delay" in issuing its decision and "a serious distraction" from the other important issues involved in the proceeding. *Ibid.* (¶ 503).

TMIA thus complains that the Board erred in not resolving this issue as part of its overall responsibility to resolve Issue 10. We agree. The Board itself essentially conceded both the importance of this issue to management integrity and the unresolved nature of it. *See* Tr. 13,063, 13,060.[100] As is the case with the actions of Herbein and Miller on the day of the accident, the Board was obliged to pursue the circumstances of the Dieckamp mailgram as best it could, given the limits on its authority and resources. *See* pp. 1262-63, *supra*. Indeed, we think the Board greatly underestimated its own ability to ferret out the facts, while overestimating the thoroughness of the staff's inquiry on this matter.

In the first place, the staff's review of the matter was solely from the standpoint of whether Dieckamp had made a material false statement as that term is used in the Atomic Energy Act. *See* Staff Exh. 5, NUREG-0760, at 45-46. That narrow focus was bound to have influenced the staff investigators in the questions they asked and conclusions they reached.[101]

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[99] When Dieckamp testified on other issues, neither the Board nor any party questioned him with regard to the mailgram to Congressman Udall. Further, licensee presented no testimony on this subject at the hearing. LBP-81-32, *supra*, 14 NRC at 556 (¶ 502).

[100] Our citation to Tr. 13,063 refers to lines 20-23. These are identified by "A" as the witness's words; it is clear from the context, however, that it is the Board speaking, beginning with line 16.

[101] The Board stated that staff witness Norman C. Moseley "made it clear [when testifying] that IE did not rest entirely upon such narrow grounds as duty to report under the Atomic Energy Act." *Ibid.* (¶ 501). It infers this from Moseley's statement that he believed Dieckamp thought he (Dieckamp) was being truthful at the time he sent the mailgram. *See* Tr. 13,063-64. We do not agree with the Board's assessment of the scope of the staff inquiry. Moseley's statement was no more than a specific answer to the Board's specific leading question during the hearing. It reveals little or nothing about the scope of the staff's actual inquiry while under way. If anything, the transcript shows Moseley thought there might be different ways to interpret Dieckamp's statement; but because Moseley did not believe they were worth pursuing, he suggested that the Board question Dieckamp about it. *See* Tr. 13,062. This hardly shows breadth in the scope of the staff's approach to this matter.

More important, though, is that the staff's investigative report, upon which the Board was so willing to rely, is wholly conclusory. It is devoid of any explanation of *why* the staff believed some of those it interviewed, but not others — namely, those whose statements suggested knowledge or a suspicion (by one or more persons) as to the cause of the pressure spike at the time it occurred.[102] With respect to Joseph Chwastyk, Brian Mehler, and Theodore Illjes, the staff just summarily concluded that their respective recollections about the pressure spike and its possible connection to the presence of hydrogen were "in error" or occurred after March 28, 1979. *Id.* at 28, 29.[103] Nor do the excerpts of these individuals' statements to the staff investigators, appended to NUREG-0760, supply any basis for the staff's conclusions. *See id.* at 57-1 to 57-11, 59-1 to 60-1, 77-1 to 81-1, 87-1 to 89-2, 91-1 to 91-6. Finally, it is not readily apparent that the staff even interviewed the principal individual involved in this incident, Dieckamp himself. The transcript *suggests* the staff interviewed him on the subject of the mailgram, but NUREC-0760 does not include any reference to such an interview. *See* Tr. 13,063; Staff Exh. 5, NUREG-0760, at 22-31, 45-46, Appendix B at 1-5 (list of attachments).

Thus, the Board did not have a reasonable basis for relying on the staff's investigation of this matter. Notwithstanding the additional delay it would have caused, and as in the case of Herbein and Miller, the Board should have pursued the matter on its own by seeking testimony from Dieckamp, those in the control room at the time of the pressure spike, and those from whom Dieckamp got the information conveyed in his mailgram. But unlike Herbein and Miller, Dieckamp is still a high level "presence" at GPU Nuclear. Although he was recently replaced as Chairman and Chief Executive Officer of GPUN, he remains a Director there and thus will continue to participate in the management of GPUN, albeit to a far lesser extent. Notice to the Commission, *et al.* (February 6, 1984). It is not unreasonable to expect that, as a former Chairman and CEO, Dieckamp will have a more commanding voice in directing the affairs of GPUN than many of his fellow members of the Board. Moreover, he sent the mailgram to Congressman Udall in his capacity as President of the parent firm, GPU — a position he still holds (along with Chief Operating Officer and Director).

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[102] None of these persons testified before the Licensing Board on this subject.

[103] The fact that *other* persons interviewed did not have similar personal recollections is irrelevant to the Dieckamp mailgram inquiry. It is important here to emphasize what is at issue *in this regard* and what is not. First, was there evidence that *anyone* interpreted the pressure spike and containment spray in terms of core damage *at the time of the spike*, and was any such information withheld? Second, on what information, and from what source(s), did Dieckamp base *his* statement?

We therefore believe that it is important that this matter be further explored by the Licensing Board so as not, in the Board's own words, to "leave it dangling." Tr. 13,060. Again, we do not suggest any wrongdoing by Dieckamp; the record as only partially developed does not permit a determination one way or the other. Accordingly, we remand to the Board for further hearing on the significance of Dieckamp's mailgram vis-a-vis licensee's competence to manage TMI-1 safely.

We recognize that such a hearing, now five years after the fact, may not be particularly fruitful. Memories fade, making selective recall a problem. But unlike the staff and Licensing Board, we believe it is worth some additional effort, even at this late date. *See* LBP-81-32, *supra*, 14 NRC at 556 (¶ 503). Although delay and distraction were disincentives to reopening in 1981, they do not figure as prominently now. In fact, it would seem logical for the Board to pursue this matter at the same time it commences hearing on the training issues we have remanded above. *See* p. 1239, *supra*. Moreover, the scope of the Board's inquiry is relatively limited. As we pointed out at note 103, *supra*, the focus should be on (1) whether *anyone* interpreted the pressure spike and containment spray, at the time, in terms of core damage, and (2) who or what was the source of the information that Dieckamp conveyed in the mailgram.

VII. CORPORATE ORGANIZATION

Two of the issues the Commission directed the Licensing Board to consider at the hearing are:

> (1) Whether Metropolitan Edison's command and administrative structure, at both the plant and corporate levels, is appropriately organized to assure safe operation of Unit 1;
>
> . . .[and]
>
> (6) whether the relationship between Metropolitan Edison's corporate finance and technical department is such as to prevent financial considerations from having an improper impact upon technical decisions[.]

CLI-80-5, *supra*, 11 NRC at 408-09. As in the case of Issue 10 (*see* p. 1258, *supra*), licensee and the staff presented testimony on these subjects, but intervenors did not. In each instance, the Board resolved the issue favorably to licensee. LBP-81-32, *supra*, 14 NRC at 412, 518 (¶¶ 67, 401). TMIA's objections to the Board's decision generally parallel those it raised in connection with Issue 10. According to TMIA, the Board erred in resting its decision on only the unreliable, self-serving testimony of licensee and staff witnesses; consequently, its decision does not really resolve either issue. But unlike the case of Issue 10, we

disagree with TMIA and find that the Board did a thorough job of developing the record on Issues 1 and 6. Further, it satisfactorily resolved each. *See id.* at 403-41, 514-18 (¶¶ 46-162, 387-401).

A. Command and Administrative Structure

With respect to the organization of licensee's corporate structure (Issue 1), TMIA's principal point goes to the reliability of the various witnesses.[104] In TMIA's view, NRC staff witnesses Lawrence P. Crocker, Frederick R. Allenspach, Richard R. Keimig, and Donald R. Haverkamp lack the necessary expertise to testify on the proper management structure of a nuclear power plant. TMIA further disputed their objectivity and credibility. BETA consultants William Wegner and Murray E. Miles, called on behalf of licensee, assertedly have no management-related experience or training. William S. Lee, President of Duke Power Company and another licensee witness, lacked objectivity and credibility because of "his prominent position in the nuclear industry." TMIA's Brief at 20. TMIA argues that the Board was obliged to inquire beyond their testimony.

The *curricula vitarum* and testimony of these witnesses refutes TMIA's broad attack. Staff witnesses Crocker and Allenspach conceded they lacked formal management training, but their experience over the years in the military, research, and the AEC/NRC qualifies them to testify on this subject. Tr. 11,990-91. *See* Resumes of Lawrence P. Crocker and Frederick R. Allenspach, fol. Tr. 12,653.[105] More important, perhaps, is their principal authorship of NUREG-0731, "Guidelines for Utility Management Structure and Technical Resources," *supra*. This report — still in draft form and prepared in response to the TMI-2 accident — represents the NRC staff's current guidelines for utility management.

Both the Commission, through its early acknowledgment of the lack of standards in this area, and the Licensing Board, in its recognition of

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[104] TMIA also accordingly complains about the Board's rejection of TMIA's proposed findings on this topic, which would have found the witnesses unreliable.

[105] The same can be said for Keimig and Haverkamp. *See* Resume of Richard R. Keimig, fol. Tr. 11,946; Resume of Donald R. Haverkamp, fol. Tr. 11,934.

TMIA's treatment of Haverkamp, who at the time of his testimony was a Senior Resident Inspector at TMI, is particularly unjustified. TMIA states that his "objectivity in evaluating GPU's management structure was questioned." TMIA's Brief at 20. The implication is that there was a reason to doubt his objectivity. Review of the portion of the transcript upon which TMIA relies shows no such thing. One of the members of the Licensing Board took the occasion of Haverkamp's appearance as a witness to ask a *general* question she had "wanted to ask . . . of resident inspectors for a long time — how does a resident inspector maintain his independence when he is the NRC person on-site amongst many of the utility personnel." Tr. 12,025.

the inherent shortcomings in the NUREG-0731 guidelines, demonstrate that this is new territory to explore. CLI-80-5, *supra*, 11 NRC at 409-10; LBP-81-32, *supra*, 14 NRC at 429 (¶ 118). The staff's testimony, however, reflects an earnest effort to look at the right factors — the experience of numerous utilities, the recommendations of various TMI-2 investigations and studies, and the views of the American Nuclear Society. Tr. 11,984-90.

TMIA's assertion that William Wegner and the other consultants from BETA have no management training or experience is similarly unwarranted. Wegner served for 15 years as Deputy to Admiral Hyman Rickover, Director of the Department of Energy's Division of Naval Reactors. Wegner's responsibilities in that position were extensive. Perhaps most relevant here is that he developed the Navy's senior officer training program, the purpose of which was to prepare commanding officers to manage the engineering operations under their control. Wegner's colleagues at BETA also have impressive credentials that show their expertise to testify on management issues. *See* Wegner, fol. Tr. 13,284, Attachment 1.[106]

TMIA questions William Lee's objectivity and credibility because of his prominent position in the nuclear industry. Yet it is that prominent position — President of Duke Power Company, a recognized leader in the field by virtue of its experience in the design and construction, as well as operation, of commercial nuclear reactors — that qualifies Lee to testify on the indicia of good management. *See, e.g.*, LBP-81-32, *supra*, 14 NRC at 408, 430 (¶¶ 56, 120-121).[107] His testimony is favorable to licensee, as one would expect, especially in view of his role assisting Dieckamp soon after the accident. *See* p. 1258, *supra*. *See generally* Lee, fol. Tr. 13,251. But we are unable to conclude that his testimony is so inherently biased or incredible as to render it unreliable.

TMIA argues that the Licensing Board should have gone beyond the proffered testimony, but it does not explain what more the Board should or could have done. The record clearly shows the Board's active participation in the litigation of Issue 1. It requested licensee's high level managers to appear and testify at the hearing, it was liberal with regard

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[106] Interestingly, TMIA in a later motion to reopen was more than willing to admit and rely on BETA's expertise. Through that motion, TMIA sought reopening on the basis of a more recent BETA Report, which criticized licensee's management on the basis of efficiency, not safety. *See* ALAB-738, *supra*, 18 NRC at 198-99.

[107] We thus distinguish Lee's testimony on management organization from his testimony on Issue 10, licensee's response to the TMI-2 accident, which we found not particularly probative or responsive. *See* p. 1258, *supra*.

to the scope of cross-examination, and it questioned the witnesses extensively itself. LBP-81-32, *supra*, 14 NRC at 401, 431 (¶¶ 41, 125). *See, e.g.*, Tr. 11,537-76, 13,263-81, 13,300-23. Further, the Board doggedly pursued the subsidiary issue of licensee's operational quality assurance program virtually on its own. LBP-81-32, *supra*, 14 NRC at 424-28 (¶¶ 107-115). Unlike the matters discussed in Section VI above, the Board did not leave open any fruitful areas of inquiry regarding licensee's management structure.

Most of TMIA's criticism of the Board's decision on Issue 1 is thus directed at the source of the evidence supporting that decision, rather than the substance of either the evidence or the decision. TMIA, however, challenges several particular Board findings. The first is that "[i]ndividual members of the management organization appearing before us seemed to have a clear understanding of their responsibilities, limitations, and the resources available to them." *Id.* at 410 (¶ 59). TMIA claims this is "irrelevant to a conclusion of management competence." TMIA's Brief at 21. TMIA's point has eluded us, for a manager's understanding of his or her responsibilities in *any* organization is an integral part of overall management competence. TMIA also contends that the Board's favorable comment on the demeanor of licensee's managers at the hearing is likewise "irrelevant." In this connection, it argues that the Board erred in finding several of these managers competent. *Ibid.* But the Board's observations about the witnesses' demeanor were entirely appropriate and relevant to — albeit not controlling on — the matter of their competence.[108] As the Board explained,

> [c]onsidering the many days spent by some of them under cross-examination, the opportunities to reveal incompetence were abundant, but none of them appear[s] to be incompetent or intellectually unsuited for his assignment. They are very serious about their responsibilities but appear to be confident in their abilities.

LBP-81-32, *supra*, 14 NRC at 431 (¶ 127).[109]

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[108] TMIA's objections to the Board's comments on witness demeanor here are inconsistent with its argument on the role of witness demeanor insofar as Michael Ross is concerned. TMIA's Brief at 33. *See* p. 1218, *supra*.

[109] As for the four managers TMIA implies are incompetent, Arnold and Herbein are no longer employed by licensee GPU Nuclear (*see* note 45, *supra*); we have previously found no basis to question Shovlin's competence (*see* p. 1254, *supra*); and although we have no basis to find Dieckamp not competent, we have determined that further hearing on the circumstances of his mailgram to Congressman Udall is warranted (*see* p. 1268, *supra*).

B. Financial/Technical Relationship

As for Issue 6 — whether financial considerations can have an improper effect on technical decisions — TMIA again complains that the Board erred in relying exclusively on the assertedly unreliable testimony of licensee and staff witnesses, particularly that of Herman Dieckamp. TMIA questions Dieckamp's statement that safety always takes precedence over economics.[110] It also contends that increased manpower (including in-house technical support) and expenditures, which licensee claims it devotes to TMI, do not necessarily mean safer operation.

We see no basis to disturb the Board's findings on Issue 6. Granted, there was little evidence on this issue (primarily that of Dieckamp), but no intervenor even proposed findings on it.[111] Unquestionably, Dieckamp's testimony is favorable to licensee, and not surprisingly so. That alone, however, does not render it unreliable. We have reviewed his statement and conclude, as did the Licensing Board, that there are enough "checks and balances" within the GPU budget process to assure that economics will not unduly affect technical necessity. *Id.* at 515-18 (¶¶ 392-400). *See* Dieckamp, fol. Tr. 13,437. We would agree with TMIA that increased manpower and expenditures do not necessarily guarantee that safety is licensee's paramount concern. On the other hand, as the Licensing Board recognized, it is some evidence of GPU's willingness to meet "the unique demands of its nuclear obligations." LBP-81-32, *supra*, 14 NRC at 518 (¶ 400). Moreover, the resolution of this issue must be viewed in the context of licensee's commitments and actions in the many other areas examined in this proceeding. We see no evidence on this record, and TMIA points to none, that would suggest that licensee has sacrificed the public health and safety for the sake of economy. *But see* Board Notification BN-83-152, *supra* note 97, at 2, and p. 1280, *infra*.

VIII. PROCEDURAL OBJECTIONS

Intervenors have raised a number of objections to the manner in which the hearing below was conducted. We have already addressed

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[110] According to TMIA, Dieckamp's statement in this regard conflicts with the evidence on licensee's "excessive" overtime practice. TMIA's Brief at 22. But as discussed at pp. 1256-57, *supra*, licensee's past overtime practice was not found to be excessive, and, for the future, overtime will be permitted only in accordance with Generic Letter No. 82-12.

[111] The Board correctly noted that the limited attention devoted to this by the staff was neither "adequately helpful," nor "entirely correct." The Board did, however, accept the staff's assessment that financial considerations would not unduly influence licensee's technical decisions. LBP-81-32, *supra*, 14 NRC at 514-15 (¶¶ 389-390). *See* Staff Exh. 4, NUREG-0680 (Supp. 1), at 26-27.

some of those objections in the context of particular issues to which they pertain. *See, e.g.*, pp. 1245-48, *supra*. We now turn to intervenors' remaining procedural complaints.

A. Intervenors' Lack of Resources

TMIA charges that the hearing process was a "fiasco." TMIA's Brief at 3. It stresses the wide imbalance of resources between it, on the one hand, and licensee and the staff, on the other. In TMIA's view, the Licensing Board showed a "callous disregard" for its hardships and made no attempt to assist it. *Id.* at 2, 3.

TMIA's criticism of the Board and hearing process is simply not warranted. We have noted at numerous instances throughout this decision the Board's sensitivity to intervenors' lack of funds and expertise, as well as its active participation in assuring the fullest possible development of the record on almost all issues. But the fact of the matter is, the Board could do no more. In CLI-80-19, 11 NRC 700 (1980), the Commission (reluctantly) denied a specific request for intervenor funding in this case on the basis of advice from the Comptroller General and its own understanding of the appropriations legislation for fiscal year 1980. A subsequent Comptroller General letter decision, No. B-200585 (December 3, 1980), concluded that the fiscal year 1981 appropriations legislation for the NRC precluded intervenor assistance. Accordingly, the Commission Chairman directed that any such assistance cease, including the provision of free hearing transcripts. *See Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit No. 1), ALAB-625, 13 NRC 13, 14-15 (1981). Thus, the Board was prohibited by law from "balancing" the resources of the parties. The very length of the record and the myriad Licensing Board and Appeal Board decisions in this proceeding, however, are testament to the meaningful role intervenors were permitted to play, and did in fact play.

B. Pace of the Hearing

Both TMIA and the Aamodts complain in general terms that the pace of discovery and the hearing itself (especially on the cheating matter) was too fast. But they provide no specifics to aid our review of their claim. For our part, we can only observe that the hearing stretched over a period of many months and seemingly adequate opportunity for discovery was provided. We also note again that, except for the specific areas identified in this decision, the record is fully developed and shows substantial participation by intervenors in cross-examination of many licen-

see and staff witnesses. Despite their admittedly limited resources, intervenors nevertheless appear to have kept "up to speed" for much of the hearing, suggesting that the pace was not unfairly rigorous.

The Aamodts complain further that they have been prejudiced by an oral ruling of the Licensing Board on January 18, 1982. That ruling denied them an extension of time in which to supplement their proposed findings on the cheating incidents. Aamodt Brief at 32. Again, we are denied the specific dimensions of their argument. The record, however, reflects the following. All parties had agreed upon a schedule for filing proposed findings. Because they had not obtained access to all transcripts as promptly as they anticipated, the Aamodts sought and obtained from the Board (acting on behalf of the Special Master) two extensions of time to file. The Board, however, denied a further extension request. The Aamodts thus filed some findings but subsequently sought to file others. The Special Master denied the latter attempt, finding no good cause for their delay. The Aamodts tried once more, and again the Special Master found no basis to accept the late material. *See* Special Master Memorandum and Order of February 11, 1982 (unpublished); Special Master Memorandum and Order of April 14, 1982 (unpublished); Aamodt Proposed Findings (January 18, 1982) at 19-20.

The Aamodts have provided us with no reason to overturn these several Board and Special Master rulings. They had ample opportunity to plead their cause below and did not succeed. Further, they have failed on appeal to show or explain how they have *in fact* been prejudiced.[112]

Although it does not relate directly to the pace of the hearing, the Aamodts also complain that the public address system at some hearing sessions was "prejudicial" to members of the public. Aamodt Brief at 30. Although the Aamodts provide no particular citations to the record or evidence of such prejudice, the transcript shows an appropriate degree of sensitivity by the Board to this issue. *See, e.g.*, Tr. 12,141-42. Appellate review can effectively provide no more. It is, of course, the hearing participants' obligation to alert boards to this type of problem at the time it occurs. It must be remembered, however, that the tradeoff for holding hearings near the reactor site is that the hearing facilities may well be less than optimum.

C. The Sequestration Order

During the reopened hearing on cheating, the Special Master issued a sequestration order at the request of some parties. The general purpose

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[112] We note that the proposed findings were directed to the Special Master, whose decision was in large part compatible with the Aamodts' view of the reopened hearing on cheating.

of the order was to prevent witnesses presently or formerly employed by licensee from discussing their testimony with one another. Tr. 23,532. The order thus provided that, except for certain exceptions not pertinent here, no prospective witness was to be in the hearing room while another witness was testifying. Such witnesses were also precluded from discussing before or after their testimony certain specified matters concerning the examination process. Special Master Sequestration Order of November 12, 1981 (unpublished).

On the last day of the hearing, the Aamodts orally moved to stay the hearing pending a separate evidentiary hearing on certain contacts between licensee's counsel and two licensee witnesses, allegedly in violation of the sequestration order. *See* Tr. 26,712-13. The Aamodts contended that this was evidence of what they believed was a pattern of improper coaching of witnesses by licensee's counsel. They inferred such coaching because many of licensee's witnesses were not, in their opinion, forthcoming in their testimony. Licensee, the staff, and the Commonwealth opposed the motion. Licensee's counsel vigorously denied the charges of impropriety. He claimed that the discussion with two licensee witnesses about the unexpected testimony of an NRC staff witness did not constitute a breach of the order.[113]

The Special Master denied the Aamodts' motion. Although he himself was disappointed in the quality of much of the testimony, he found no evidence of a pattern of improper witness coaching. He also concluded that licensee's counsel had acted on a good faith interpretation of the sequestration order. Tr. 26,788-99. A month later, the Aamodts sought reconsideration, and the Special Master denied that as well. He determined that the relief requested — a stay and collateral proceeding — was disproportionate to the limited fact of counsel's one communication. The Special Master confirmed his views that there was no violation of the literal terms of the sequestration order, and that counsel had acted out of a good faith desire to obtain information useful in cross-examination of a staff witness who had provided direct testimony not previously revealed during discovery. Special Master Memorandum and Order of February 9, 1982 (unpublished).

The Aamodts argue on appeal that licensee violated the spirit, if not the letter, of the sequestration order, and that the Special Master's ruling was thus in error. We find no error in the Special Master's ruling. Clearly, there was no literal violation of the order, as the Aamodts concede. We are also inclined to find no violation of the spirit of the order. There is nothing in the discussions surrounding the adoption of

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[113] The testimony concerned the incident involving Husted and P, discussed briefly at p. 1221, *supra*.

the order that suggests the parties contemplated its application to the preparation of licensee's counsel for *cross*-examination of a *staff* witness. *See, e.g.*, Tr. 23,532-55, 23,838-59, 23,910-11. On the other hand, those same discussions show the desire of licensee's counsel to comply with the letter *and* spirit of the order, while at the same time fulfilling his professional responsibilities to his client. *Ibid.* But even if the action of licensee's counsel could reasonably be construed as contrary to the intent of the order, we believe the Special Master's measured response was appropriate. Licensee's counsel was bound by his own ethical obligations to prepare for cross-examination of the staff witness on his "surprise" testimony. Had that testimony been revealed in discovery or in a prefiled direct statement, licensee's counsel surely could have prepared for cross-examination by discussing it with his own witnesses. There is also no evidence of more than one such instance, or any real indication that counsel improperly coached any witness. *See generally Consumers Power Co.* (Midland Plant, Units 1 and 2), ALAB-691, 16 NRC 897, 918-19 (1982), *review declined,* CLI-83-2, *supra,* 17 NRC 69 (1983). The Special Master thus rightly concluded that counsel had acted in good faith and no further inquiry or sanction is warranted.

IX. MOTION TO REOPEN: LEAK RATE FALSIFICATION AT TMI-1

The final matter before us at this juncture is the Aamodts' motion to reopen the record to examine allegations of falsification of leak rate data at TMI-1. In ALAB-738, *supra,* we granted motions to reopen, filed by both TMIA and the Aamodts, for hearing on similar allegations concerning *TMI-2* (the Hartman allegations) and remanded the matter to the Licensing Board. *See* 18 NRC at 183-92 for a discussion of the allegations and our disposition of the motions.[114] Soon thereafter, we received a series of Board Notifications, in which the staff concluded, contrary to its earlier position in Staff Exh. 13, NUREG-0680 (Supp. No. 2), at 9-10, that there were indications of the same practices concerning leak rate testing at Unit 1 as had been discovered at Unit 2. *See* Board Notifications BN-83-138 (September 2, 1983); BN-83-138A (September 23,

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[114] Although no party sought review of our decision, the Commission has indefinitely stayed that hearing. Commission Order of October 7, 1983, *supra.* One month later, a federal Grand Jury handed down an 11-count criminal indictment against licensee's corporate predecessor, Metropolitan Edison, in connection with the Hartman allegations. On February 28, 1984, Met Ed pleaded guilty to one count and no contest to six others. The remaining four counts were dismissed on the U.S. Attorney's recommendation. The company was fined and ordered to establish a $1 million fund for emergency planning. Notice to Commission, *et al.* (March 2, 1984), Attachment (Plea Agreement).

1983); BN-83-138B (October 6, 1983); BN-83-138C (October 25, 1983). *See also* LBP-81-32, *supra*, 14 NRC at 557 (¶¶ 504-506). On January 24, 1984, not long after oral argument of these appeals, the Aamodts moved to reopen, primarily on the basis of these Board Notifications and their underlying documents.

UCS supports the Aamodts' motion.[115] The staff also supports it, on alternative theories. The staff believes that the issue of leak rate testing irregularities at TMI-1 is within the scope of the reopened hearing we have already ordered on the Hartman allegations. In the alternative, it argues that the Aamodts' motion meets the standards for reopening as we applied them in ALAB-738. Licensee opposes the Aamodts' motion solely on the basis that they have not met their considerable burden of showing that a different result might have been reached had this information been considered initially. Licensee's Response to Aamodt Motion (February 8, 1984) at 4.[116] Licensee contends that the Board Notifications do not contain sufficient facts to provide a basis for reopening. It thus urges us to await the outcome of the investigations that the staff indicated in the Board Notifications were under way. *Id.* at 3-4. Curiously, however, licensee volunteers that it was prepared to litigate Unit 1 leak rate testing practices at the reopened hearing on the Hartman allegations. *Id.* at 2.

We grant the Aamodts' motion and remand this matter to the Licensing Board for hearing. We note at the outset that we cannot agree with the staff's belief that alleged falsification of leak rate data at TMI-1 is encompassed within the reopened hearing on the Hartman allegations. To be sure, the matters are closely related. Hartman's allegations, however, were expressly limited to Unit 2.[117] We also noted differences in the classifications of the leakage pathways for the two units. ALAB-738, *supra*, 18 NRC at 192 n.30. Thus, there would have been no basis *at that time* for our reopening the record to explore leak rate practices at both units.

But now the staff has brought to our attention, through its Board Notifications, its actual change in position with regard to Unit 1 from that originally stated in Staff Exh. 13, NUREG 0680 (Supp. No. 2). We explained in ALAB-738, *supra*, 18 NRC at 189-90, our belief that, because the Licensing Board made its management competence decision subject to the then-ongoing Department of Justice investigation into the

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[115] TMIA filed no response to it.

[116] Thus, no party challenges the other two criteria considered for reopening – the timeliness of the Aamodts' motion or the significance of the matter it raises. *See Diablo Canyon*, *supra*, 11 NRC at 879.

[117] During an interview, in fact, Hartman stated his belief that the operators at Unit 1 never had any problem getting "good" leak rate data. Faegre & Benson Report, Vol. Four, Hartman Interview at 76.

Hartman allegations referenced in NUREG-0680, it effectively determined that consideration of that matter might well have made a difference in the outcome.[118] The same necessarily follows for the new allegations concerning leak rate practices at TMI-1. Indeed, as the staff notes, the implications of the new allegations are potentially more significant, inasmuch as they involve the very unit that is the subject of this restart proceeding. *See* NRC Staff's Answer to Aamodt Motion (February 9, 1984) at 5 n.3.

Our decision to grant the Aamodts' Motion is only reinforced by the Investigative Reports (# 1-83-028 and supplement) and underlying documents recently served on the parties and us.[119] The overall conclusion of the reports is favorable to licensee: neither a systematic pattern of falsification nor a motive to falsify the leak rate data was discovered. On the other hand, the reports disclosed (1) a lack of understanding concerning record keeping requirements; (2) ignorance (over a period of several years) by both operating staff and management of the existence and significance for leak rate calculations of a "loop seal" in the instrumentation system; and (3) inattention during the pre-accident period to work requests that would have highlighted the loop seal problem. These reports and documents are not before us as evidence. But we believe they are the type of material that is best scrutinized by the Licensing Board as part of its review of *all* of the circumstances surrounding the leak rate testing practices at Unit 1. Licensee was prepared to address this matter at the reopened hearing. *See* p. 1277, *supra*. Hence, it is logical that the Licensing Board consider it in conjunction with the hearing we have ordered on the Hartman allegations.[120]

X. SUMMARY AND CONCLUSIONS

We have considered all the myriad arguments raised on appeal and have reviewed the extensive record.[121] Many of those arguments are

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[118] Interestingly, licensee did not argue that intervenors failed to meet their burden on this point in their motions to reopen on the Hartman allegations. *See* ALAB-738, *supra*, 18 NRC at 189 n.20.

[119] These are the reports that licensee requested we await before ruling on the Aamodts' motion.

[120] Licensee has informed us that it has commissioned its own investigation on leak rate measurement practices at TMI-1 and TMI-2. Letter from D.B. Bauser to Appeal Board (February 7, 1984). Presumably, it would introduce the results of that inquiry into evidence at the hearing.

[121] Many of the points raised by intervenors were not properly preserved for appeal, not fully developed, not supported by citations to the record, or based on references to the record or other authority that did not support the points for which they were cited. Nonetheless, we have endeavored in this opinion to discuss specifically all discernible arguments. Those not addressed are without merit.

We also stress that the Licensing Board and Special Master issued a total of three very comprehensive, well written, and well organized opinions and numerous orders solely on management

(Continued)

without merit. Others have been essentially mooted by the passage of time, personnel changes, or superseding regulatory requirements. But in several important areas, we agree with intervenors that the record does not support the Licensing Board's favorable findings concerning licensee's management of TMI-1. We therefore find it necessary to remand this proceeding to that Board for further record development in those areas.

The most significant issue requiring further hearing is training. Because the safe operation of the plant is so heavily dependent upon the operators' skill, the importance of training cannot be overstated. The cheating and related incidents called into question the adequacy and integrity of licensee's entire training and testing program. Although we have found that the reopened record on the cheating itself was as fully developed as possible,[122] the impact of those findings on the Licensing Board's earlier conclusions on licensee's training program was not given the full consideration it warrants. In particular, the Board should have sought further testimony, in light of the cheating incidents, from the OARP Review Committee, whose views the Board previously found so persuasive.

Another important area where the record is not as complete as it should be concerns the response of licensee's management to the TMI-2 accident. The Board was obliged to pursue this Commission-mandated issue as thoroughly as possible. To the extent that it did not satisfactorily resolve questions concerning the actions of Gary Miller and John Herbein in the flow of information the day of the accident, it erred. But because neither is now employed by licensee, we see no useful purpose in pursuing the matter at a further hearing. The record on this issue is also incomplete with regard to the circumstances surrounding a mailgram sent by GPU President Herman Dieckamp to Congressman Morris Udall. The Board's reliance on the NRC staff's assessment of this matter was not justified; the Board should have inquired more deeply on its

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issues. There was thus no need for our own recitation of all the facts developed at the hearing, especially on issues not the subject of any appeal. That is not to say, however, that we have failed to abide by our commitment in ALAB-685, 16 NRC 449, 451-52 (1982), to consider the whole record. Matters not specifically addressed, in our view, do not warrant corrective action.

[122] Subject to a few exceptions, we are also in general agreement with most of the Board's findings regarding the various individuals implicated in the cheating. We support the conditions imposed by the Board in that regard and expect licensee to abide by the commitments reflected in its agreement with the Commonwealth.

A related development subsequent to the Board's decision on cheating — the promotion of Charles Husted — warrants the imposition of another condition. The record, in our view, gives us cause to question licensee's judgment in this matter. We therefore require that licensee not delegate any supervisory responsibilities to Husted insofar as the training of non-licensed personnel is concerned.

own. Because Dieckamp remains an important corporate official, we believe the matter must be further explored, and accordingly we remand to the Board for additional hearing on this limited issue.

We are also persuaded that the record should be reopened for hearing on the allegations of improper leak rate practices at TMI-1. As we previously concluded in ALAB-738, *supra*, with regard to similar allegations at TMI-2, these charges raise significant questions that may well have affected the Licensing Board's management decision, had it been fully apprised of the facts at the time.

We have several concluding observations. Appellate review requires us to base our judgment on the adjudicatory record, though we have not been reluctant to take note of newly supplied, essentially "objective" information that served to clarify a point or moot an issue. We are, of course, aware of several recent reports that are generally favorable to licensee's restructured, new management.[123] But these and other such subjective documents are not evidence and thus have not been fairly tested through litigation. We are likewise aware of several ongoing investigations by the NRC that cast a shadow over the record on several issues before us — for example, the effect of financial considerations on technical judgments. *See* Board Notification BN-83-152, *supra*, Enclosure (NUREG-1020, Vol. 1, at 10-1 to 10-24). But unresolved allegations similarly cannot supply a reasoned basis for a decision. We previously reopened the record in this proceeding for hearing on the Hartman allegations, and we further reopen here on related charges. Moreover, we find it necessary to remand for additional hearing before the Licensing Board on several important issues, including training. In sum, what we said in ALAB-738, *supra*, still holds true: "we cannot make any final judgment on appeal as to licensee's management competence and integrity without an adequate record." 18 NRC at 190. From our perspective, the final chapters of this proceeding are yet to be written.

This proceeding is reopened and remanded to the Licensing Board for further hearing in accordance with this opinion.

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[123] Examples are the November 1983 report by Admiral Rickover, "An Assessment of the GPU Nuclear Corporation Organization and Senior Management and Its Competence to Operate TMI-1," and the NRC staff's most recent Systematic Assessment of Licensee Performance (SALP Board Report) (April 2, 1984).

It is so ORDERED.

FOR THE APPEAL BOARD

C. Jean Shoemaker
Secretary to the
Appeal Board

APPENDIX A

Specific management competence issues (CLI-80-5, *supra*, 11 NRC at 408-09):

(1) Whether Metropolitan Edison's command and administrative structure, at both the plant and corporate levels, is appropriately organized to assure safe operation of Unit 1;
(2) whether the operations and technical staff of Unit is qualified to operate Unit 1 safely (the adequacy of the facility's maintenance program should be among the matters considered by the Board);
(3) [w]hat are the views of the NRC inspectors regarding the quality of the management of TMI Unit 1 and the corporate management, staffing, organization and resources of Metropolitan Edison;
(4) whether the Unit 1 Health Physics program is appropriately organized and staffed with qualified individuals to ensure the safe operation of the facility;
(5) whether the Unit 1 Radiation Waste system is appropriately staffed with qualified individuals to ensure the safe operation of the facility;
(6) whether the relationship between Metropolitan Edison's corporate finance and technical departments is such as to prevent financial considerations from having an improper impact upon technical decisions;
(7) whether Metropolitan Edison has made adequate provision for groups of qualified individuals to provide safety review of and operational advice regarding Unit 1;
(8) what, if any, conclusions regarding Metropolitan Edison's ability to operate Unit 1 safely can be drawn from a comparison of the number and type of past infractions of NRC regulations attributable to the Three Mile Island Units with industry-wide infraction statistics;
(9) what, if any, conclusions regarding Metropolitan Edison's ability to operate Unit 1 safely can be drawn from a comparison of the number and type of past Licensee Event Reports ("LER") and the licensee's operating experience at the Three Mile Island Units with industry-wide statistics on LER's and operating experience;
(10) whether the actions of Metropolitan Edison's corporate or plant management (or any part or individual member thereof) in connection with the accident at

Unit 2 reveal deficiencies in the corporate or plant management that must be corrected before Unit 1 can be operated safely;

(11) whether Metropolitan Edison possesses sufficient in-house technical capability to ensure the simultaneous safe operation of Unit 1 and clean-up Unit 2. If Metropolitan Edison possesses insufficient technical resources, the Board should examine arrangements, if any, which Metropolitan Edison has made with its vendor and architect-engineer to supply the necessary technical expertise;

(12) whether Metropolitan Edison possesses the financial resources necessary to safely operate Unit 1 in addition to cleaning up Unit 2;* and

(13) such other specific issues as the Board deems relevant to the resolution of the issues set forth in this order.

APPENDIX B

Specific issues in the reopened proceeding on cheating (Licensing Board Memorandum and Order of October 14, 1981 (unpublished), *supra*, at 2-4):

1. The extent of cheating by TMI-1 operator license candidates on the NRC license examinations in April 1981, and on any other Licensee- or NRC-administered examinations, including but not limited to the following: the Kelly examinations (including Category T) in April 1980; Category T make-up examinations subsequently administered by the company; the ATTS mock examinations in early April 1981; and such other examinations as the Special Master shall deem relevant. These latter shall include any other Licensee-administered qualification or mock exam or NRC-administered exam since the accident at TMI-2.
2. The adequacy of the Staff's investigation of, and NRC response to, the cheating incident and rumors of cheating in the April 1981 NRC examinations.
3. The adequacy of Licensee's investigation of, and Licensee's response to, cheating or possible cheating in the examinations listed in Issue 1 above.
4. [Issue 4 has been combined with Issue 3.]
5. The extent of Licensee management knowledge of, encouragement of, negligent failure to prevent, and/or involvement in cheating in the above mentioned NRC and Licensee examinations.
6. The existence and extent of Licensee management involvement in cheating as alleged by the Aamodts in paragraph 7 in response to the Board's Order of August 20, 1981.
7. The existence and extent of Licensee management constraints on the NRC investigation of cheating and rumors of cheating in the NRC April 1981 examinations.
8. The adequacy of Licensee management response to the incident in July 1979 referred to in the IE investigation report and involving one of the two operators terminated as a result of cheating on the NRC April 1981 examinations.

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*The Commission later eliminated this as an issue for consideration at hearing. CLI-81-3, 13 NRC 291, 296-97 (1981).

9. The adequacy of Licensee's plans for improving the administration of future Licensee qualification examinations for licensed operators and candidates for operator licenses, including the need for independent administration and grading of such examinations.
10. The adequacy of the administration of NRC licensing examinations for TMI-1 personnel, including proctoring, grading, and safeguarding the integrity of examination materials; the adequacy of the Staff's review of the administration of Licensee's Category T examinations; and the adequacy of the Staff's plan for retesting operators and monitoring its NRC examinations to assure proper adherence to NRC testing requirements in order to assure that the purposes of the NRC examinations, because of the nature of the questions, cannot be defeated by cheating, the use of crib sheets, undue coaching or other evasive devices.
11. The potential impact of NRC examinations, including retests, and operator terminations on the adequacy of staffing of TMI-1 operations.
12. The sufficiency of management criteria and procedures for certification of operator license candidates to the NRC with respect to the integrity of such candidates and the sufficiency of the procedures with respect to the competence of such candidates.

APPENDIX C

TMIA's contention 5, in its final form, states (LBP-81-32, *supra*, 14 NRC at 479):

It is contended that Licensee has pursued a course of conduct that is in violation of 10 CFR 50.57, 10 CFR 50.40, 10 CFR 50.36, 10 CFR 50.71 and 10 CFR 50 Appendix B, thereby demonstrating that Licensee is not "technically . . . qualified to" operate TMI Unit 1 "without endangering the health and safety of the public." This course of conduct includes:

a. deferring safety-related maintenance and repair beyond the point established by its own procedures (see, e.g. A.P. 1407);
b. disregarding the importance of safety-related maintenance in safely operating a nuclear plant in that it:
   1. [deleted]
   2. proposed a drastic cut in the maintenance budget;
   3. [deleted]
   4. fails to keep accurate and complete maintenance records related to safety items;
   5. has inadequate and understaffed QA/QC programs related to maintenance;
   6. extensively uses overtime in performing safety-related maintenance.

Atomic Safety and Licensing Boards Issuances

Cite as 19 NRC 1285 (1984) LBP-84-20

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

Charles Bechhoefer, Chairman
Dr. Frederick P. Cowan
Dr. Jerry Harbour

In the Matter of

Docket Nos. 50-329-OM&OL
50-330-OM&OL
(ASLBP Nos. 78-389-03-OL
80-429-02-SP)

CONSUMERS POWER COMPANY
(Midland Plant, Units 1 and 2)

May 7, 1984

The Licensing Board admits two of three proposed contentions based upon allegations made in complaint filed by a third party in a civil lawsuit against the Applicant.

LICENSING BOARDS: AUTHORITY TO REGULATE PROCEEDINGS

The Licensing Board declines to utilize its general authority to shape the course of a proceeding, 10 C.F.R. § 2.718(e), as foundation to accept a proposed late-filed contention or to consider what is in essence a motion to reopen the record, in the face of explicit Commission standards governing those situations.

RULES OF PRACTICE: CONTENTION, ADMISSIBILITY OF

The specificity and basis requirements for a proposed contention, 10 C.F.R. § 2.714(b), are satisfied where the contention is based upon allegations in a sworn complaint filed in a judicial action (notwithstanding that the allegations are contested), and the applicable passages therein are specifically identified. Further basis is found in several documents, although they may be subject to multiple interpretations.

RULES OF PRACTICE: NONTIMELY SUBMISSION OF CONTENTIONS

In balancing the five factors considered in determining the admissibility of late-filed contentions, 10 C.F.R. § 2.714(a), a licensing board must consider all five factors but need not give the same weight to each factor; where a proponent demonstrates "good cause" for late filing, the showing required on the other factors is diminished.

RULES OF PRACTICE: REOPENING OF PROCEEDINGS

Where proposed new contentions were proffered prior to close of the record in the segment of the proceeding in which the matters were litigated, but the ruling upon the contentions takes place subsequent to the record's closing, the choice of governing standards is based upon the status of the record at the time the proposed contentions were first offered: whether the contention was timely proffered, and whether it presents important information regarding a significant issue.

MEMORANDUM AND ORDER
(Ruling on Motions Arising from Dow Litigation)

On July 14, 1983, Dow Chemical Co. filed suit in the Circuit Court for the County of Midland, Michigan against Consumers Power Co. (hereinafter CPC or Applicant), seeking a declaratory judgment and monetary relief arising out of a contract under which the Applicant agreed to supply Dow with steam to be produced by the Midland facility. During our first hearing session in Midland, Michigan following that filing, Ms. Barbara Stamiris and Ms. Mary Sinclair, Intervenors in this consolidated proceeding, each filed a motion based on the Dow lawsuit. Ms. Stamiris seeks to litigate in the OM proceeding three contentions based on Dow's complaint (Dow contentions). Ms. Sinclair seeks to

hold open the OM/OL record pending the completion of the Dow lawsuit.

The Applicant opposes litigation of all three of the Dow contentions. The NRC Staff would have us litigate all three of them. Both the Applicant and Staff oppose Ms. Sinclair's motion.

For reasons hereinafter set forth, we admit for litigation two of the three contentions proposed by Ms. Stamiris and decline to admit the third. We also deny Ms. Sinclair's motion, but without prejudice to her moving to supplement or reopen the record should the Dow lawsuit uncover information of significance to this proceeding and not a part of the existing record or the record to be developed hereafter.

I. STAMIRIS MOTION

A. Ms. Stamiris' motion was presented orally on July 28, 1983 (Tr. 19,358-65) and was followed by a written motion dated August 8, 1983 (corrected on August 12, 1983). As set forth in the written motion, Ms. Stamiris is seeking to litigate the following three contentions derived from the Dow lawsuit:[1]

1. Consumers misrepresented its time schedule for completion of the Midland plants to the NRC, including the NRC Staff and this Licensing Board. *See* paragraphs 20, 37, 39-48.

2. Consumers used and relied on U.S. Testing test results to fulfill NRC regulatory requirements while knowing that these test results were invalid. *See* par. 24, 35.

3. Consumers knowingly represented to the NRC that the single test boring taken near the diesel generator building demonstrated that unmixed cohesive fill had been used as a foundation for safety-related structures at the site even though this test boring actually indicated that random fill had been improperly used in these areas. *See* par. 27.[2]

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[1] The July 14, 1983 complaint was dismissed by the Court *sua sponte* for procedural reasons on July 15, 1983, with directions to Dow to file a complaint complying with specified procedures within 10 days. Dow filed a First Amended Complaint on July 18, 1983. Paragraph references in the proposed contentions refer to paragraphs of the initial July 14, 1983 complaint (which is considerably more detailed than the First Amended Complaint).

[2] This third contention was later restated as follows:

> Consumers knowingly misrepresented to the NRC that a single test boring taken near the diesel generator building indicated that unmixed cohesive fill had been used, or alternatively, did not disclose to the NRC that the single test boring demonstrated the use of random, improperly compacted fill in the area and constituted evidence of site-wide problems.

Second Supplemental Memorandum, dated October 5, 1983.

Ms. Stamiris further sought discovery on these contentions, both in the form of new discovery and as a claim that certain documents referenced in the Dow complaint had not been turned over to her in response to earlier discovery requests which, she claims, called for production of such documents.

On August 17, 1983, the Applicant filed a response (corrected on August 18, 1983) which offered to make available to parties the documents which it had provided to Dow ("Dow documents") and to which reference was made in the Dow complaint. The Applicant urged that we defer ruling on the contentions pending examination by the Intervenors of the Dow documents, and that, if Ms. Stamiris found it appropriate, she should thereafter supplement or resubmit her motion. On the merits, however, the Applicant set forth its grounds for opposing all three contentions.

In a telephone conference call on August 25, 1983, we heard arguments of all parties concerning the Applicant's response and we adopted the Applicant's suggestion that we defer ruling on Ms. Stamiris' proposed contentions and request for discovery until such time as all parties had had a chance to review the Dow documents. We also requested the Applicant to make available certain other documents. Memorandum and Order (Memorializing Telephone Conference Call of 8/25/83), dated August 29, 1983. On or about August 25, 1983, the Applicant made available the Dow documents; on September 14, 1983 it provided the additional documents identified by the Board.

Thereafter, on September 21, 1983, Ms. Stamiris filed a Supplemental Memorandum which, as a result of time constraints (Tr. 20,792), was limited to the first of her contentions. On the same day, we held oral argument on all of her contentions, in which all parties participated (Tr. 20,791-873). At that time, the Staff took the position that all three should be accepted (Tr. 20,805-06). On October 5, 1983, with leave of the Board granted on September 23, 1983 (Tr. 21,202), Ms. Stamiris filed a Second Supplemental Memorandum, in support of her second and third proposed contentions. The Applicant filed a written response on October 14, 1983 (corrected on October 17, 1983). We heard further argument on those contentions on October 31 (Tr. 21,297-305).

During the early part of April 1984, counsel for the Applicant and NRC Staff each telephoned the Board to advise us that each would be filing additional information bearing on the Dow contentions and to suggest that we defer our ruling on those contentions (which was then

imminent) until we had received the additional information.[3] We have followed that suggested course of action.

The first communication we received was a Board Notification from the Staff (BN 84-091), dated April 27, 1984, advising that an allegation regarding misrepresentation of soils data provided to NRC had been received, that it could be material and relevant both to QA/QC issues before us and to the proposed Dow contentions, and that the allegation was being referred to the Office of Investigations (OI) for evaluation. No additional identifying information was set forth, but we presume (from the reference to "soils data") that the information would have a bearing on the second or third proposed contention.

The second communication we received was a letter from the Applicant, dated April 30, 1984, advising that CPC had become aware of discrepancies in records of several borings made during the 1977 investigation of the settlement of the administration building. This information has a potential relevance to proposed contentions 2 and 3.[4]

Finally, by letter also dated April 30, 1984, the Applicant advised us that document discovery in the CPC-Dow litigation had brought to light certain Bechtel documents bearing on Bechtel Forecast 6 which, according to the Applicant, may be inconsistent with its response to Ms. Stamiris' motion. (This is the information about which the Applicant had earlier notified us.) The Applicant further advised that the Bechtel documents are subject to a protective order in the Dow litigation and cannot be released at this time. CPC suggests that we rule on the "Dow" issues without regard to the newly discovered information (although it offers to initiate the process under the protective order for disclosure of the documents, if we deem it necessary).

B. In proposing her contentions, Ms. Stamiris asserts that all three of them bear on her already-admitted management attitude contentions and that, accordingly, the record should be supplemented or reopened to incorporate the newly developed information brought out by the Dow complaint. In her written motion, she asserts that, in considering her proposals, we should act under our inherent authority to shape the course of proceedings over which we preside (*citing, inter alia, Offshore Power Systems* (Floating Nuclear Power Plants), ALAB-489, 8 NRC 194, 201-08 (1978); 10 C.F.R. § 2.718(e); and 5 U.S.C. § 556(c)).

In contrast, the Applicant regards the first contention as a new contention and thus subject to the requirements for late-filed contentions set

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[3] The Applicant confirmed its telephone communication by letter dated April 17, 1984, which has been circulated to all parties.

[4] Apparently this is not the information which the Applicant advised us by telephone was forthcoming.

forth in 10 C.F.R. § 2.714(a). With respect to the second and third contentions, the Applicant would utilize the standards for reopening a record. In asserting that we should consider all three new issues, the Staff does not definitively spell out what standards we should utilize.

We recognize that Ms. Stamiris has raised a number of management-attitude issues in this proceeding and that her first issue here bears ultimately on that subject. Nonetheless, the subject matter of her other management-attitude contentions — *i.e.*, "providing information [to NRC] relevant to health and safety standards with respect to resolving the soil settlement problems" (OM Contention 1), and implementation of the QA program with respect to soil settlement issues (OM Contention 3) — is far removed from the scheduling representations on which the first proposed contention is founded. In admitting Ms. Stamiris' earlier management-attitude contentions, we explicitly limited their managerial-attitude aspects "to factors which could be said to bear upon the Applicant's managerial attitude in resolving [soil settlement] issues." Prehearing Conference Order, dated October 24, 1980, at 4 (unpublished). The management attitude alleged in the first proposed contention (as well as in the material false statement alleged in the Modification Order) may be analogous to (and hence have some bearing on) the attitude alleged in OM Contentions 1 and 3, but the technical subject matter is disparate enough that the first proposed contention must properly be deemed a new contention.

That being so, we seriously doubt whether we could employ our general authority to shape the course of a proceeding as the foundation for accepting such a new contention, particularly since the Commission has in place explicit standards for dealing with new "late-filed" contentions. 10 C.F.R. § 2.714(a).[5] We thus will apply the standards for late-filed contentions in determining whether the first proposed contention should be accepted.

As for the second and third contentions, both raise allegedly new information bearing on issues already litigated. Ms. Stamiris' motion for us to consider this information is in substance a motion to reopen the record on such issues. Because the Commission has explicit standards governing the reopening of the record of a proceeding to consider new information on issues already litigated, we decline to use our general authority to shape the course of a proceeding as the foundation for considering what in essence is a motion to reopen the record. We will instead

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[5] A "late-filed" contention is any contention filed after 15 days prior to the first special prehearing conference which (in the OM proceeding) was held in September 1980. 10 C.F.R. § 2.714(b); *see Consumers Power Co.* (Midland Plant, Units 1 and 2), LBP-82-63, 16 NRC 571, 576 (1982).

consider the second and third contentions under standards for reopening the record.[6]

The allegedly new information in these contentions was proffered prior to the close of the record on the segment of the proceeding in which the matters were litigated. For that reason, we will evaluate these contentions on the basis of the same standards we spelled out in ruling on motions of Ms. Stamiris and the Applicant earlier in this proceeding — *i.e.*, whether the motion was timely and whether it presents important information regarding a significant issue. *See* Memorandum and Order (Denying Motion to Reopen Record on Containment Cracks), LBP-83-50, 18 NRC 242, 246-48 (1983); Applicant's Motion to Reopen and Supplement the Record on Sinclair Contention 14, dated October 28, 1983, at 1-3 (ruled upon favorably by Licensing Board at Tr. 22,655-56).[7] *See also* p. 1296, *infra*.

C. We now turn to each of Ms. Stamiris' proposed contentions.

1. Inasmuch as we are considering Ms. Stamiris' first contention — which alleges that Consumers misrepresented to the NRC the time schedule for completion of the facility — as a late-filed contention, we must initially consider whether the contention meets normal contention requirements. If so, we must additionally consider the factors for late-filed contentions set forth in 10 C.F.R. § 2.714(a) — *i.e.*:

> (i) Good cause, if any, for failure to file on time.
> (ii) The availability of other means whereby the petitioner's interest will be protected.
> (iii) The extent to which the petitioner's participation may reasonably be expected to assist in developing a sound record.
> (iv) The extent to which the petitioner's interest will be represented by existing parties.
> (v) The extent to which the petitioner's participation will broaden the issues or delay the proceeding.

In applying these factors, we must determine whether application of all of the five factors, on balance, favors admission of the contention. *Duke Power Co.* (Catawba Nuclear Station, Units 1 and 2), CLI-83-19,

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[6] The Applicant would also have us apply the standards for reopening a record to the first contention (response at 6-7, 28-29). If we regarded the contention as adding new information to matters already litigated, we would have done so (but would not apply standards for late-filed contentions). Since we regard the first proposed contention as a new contention, and since (as Ms. Stamiris points out, Tr. 20,838) the OM record was not closed at the time it was filed, we decline to apply the standards for reopening a record to that contention.

[7] The circumstance that our ruling here follows the closing of the record of a major segment of the OM/OL proceeding does not alter the governing standards, which are based on the status of the record at the time the proposed contentions were first offered. *Cf. Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), LBP-84-13, 19 NRC 659, 716 n.43 (1983).

17 NRC 1041 (1983); *see also Consumers Power Co.* (Midland Plant, Units 1 and 2), LBP-82-63, 16 NRC 571, 576-78 (1982). In balancing the factors, however, we are not necessarily required to give the same weight to each one of them. *Florida Power & Light Co.* (St. Lucie Nuclear Power Plant, Unit 2), ALAB-420, 6 NRC 8, 22 (1977) (cited approvingly by the Commission in *Catawba*, CLI-83-19, *supra*, 17 NRC at 1046); *Midland*, LBP-82-63, *supra*, 16 NRC at 577. Where a proponent demonstrates "good cause" for late filing, the showing required on the other factors is decreased. *St. Lucie*, ALAB-420, *supra*, 6 NRC at 22; *Wisconsin Public Service Corp.* (Kewaunee Nuclear Power Plant), LBP-78-24, 8 NRC 78, 83 (1978); *cf. Nuclear Fuel Services, Inc.* (West Valley Reprocessing Plant), CLI-75-4, 1 NRC 273, 275 (1975).

Turning first to whether the normal contention requirements have been satisfied, the Commission's rules require that there be filed "contentions which petitioner seeks to have litigated • • •, and the bases for each contention set forth with reasonable specificity." 10 C.F.R. § 2.714(b). The Applicant claims that Ms. Stamiris has not satisfied the basis and specificity requirements (response at 28).

The basis asserted by Ms. Stamiris is primarily the first Dow complaint. The Applicant asserts that Ms. Stamiris should back up her accusations "with something more substantial than allegations made in a complaint" (*id.*). Back of this claim is its view that a complaint represents no more than unproved allegations — *i.e.*, what a party hopes to prove — and may not be regarded as "new evidence" (*id.* at 14). At oral argument, the Applicant portrayed the complaint as "a lawyer's document • • • an advocate's piece" (Tr. 20,841). The Applicant also emphasizes that it has denied the allegations of the complaint (response at 17). In short, the Applicant appears to be asserting that a complaint in a judicial action cannot serve as a basis for a contention, at least where its allegations have been denied.

We disagree. Under a long line of NRC holdings, we should not attempt to ascertain, prior to admitting a contention, the validity or merit of its bases, only whether the bases have been set forth with adequate specificity. *Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980); *Alabama Power Co.* (Joseph M. Farley Nuclear Plant, Units 1 and 2), ALAB-182, 7 AEC 210, 216, *rev'd on other grounds*, CLI-74-12, 7 AEC 203 (1974); *Duquesne Light Co.* (Beaver Valley Power Station, Unit 1), ALAB-109, 6 AEC 243, 244-45 (1973). Ms. Stamiris has not only identified the basis (the Dow complaint, which is a sworn document) but has identified the particular paragraphs of the Dow complaint which she asserts support

her contention. She thus has set forth her basis with reasonable specificity.[8]

Moreover, in her first supplemental memorandum, Ms. Stamiris has pointed to several of the Dow documents which, she claims, support her contention. She discussed these documents during oral argument, pointing to how, in her opinion, they demonstrated that Consumers was not telling the full truth to NRC (Tr. 20,792-98). By doing so, she has supplied additional bases for her contention. Moreover, although we cannot rule now on the sufficiency of those documents, we do note that they include information which, in our view, at least represents a "showing * * * sufficient to require reasonable minds to inquire further" (*cf. Vermont Yankee Nuclear Power Corp. v. Natural Resources Defense Council, Inc.*, 435 U.S. 519, 554 (1978)).

In particular, we note that Bechtel Forecast 6, presented to CPC in January 1980, calculated the fuel load date for Unit 2 (scheduled as the first to be completed) to be April 1984.[9] A review of the Bechtel Forecast by a CPC staff team, dated May 5, 1980 ("Review Report"), analyzes several completion possibilities and concludes that, "even though we take minor exception to various sections of the estimate as presented, we generally agree with Bechtel both on schedule and cost, and are recommending a total project estimate based on the premise" (document 0014312, at 2). The document includes the statement (at 1 of transmittal letter) that "[n]o distribution of the CPCo F/C #6 Review Report is being made outside of the Company."

Notwithstanding the recommendation of its staff, CPC management decided to retain July 1983 as the target fuel load date for Unit 2 (document 0013524, also attachment 8 to Applicant's response). CPC also attempted to convince the NRC to structure its OL review on the basis of that target (document 00358). Whether the justifications advanced for that target date (*e.g.*, documents 00234 and 00237) were reasonable is an appropriate topic for litigation. In addition, as Ms. Stamiris points out, some documents suggest that CPC may have maintained two schedules — one for internal use and another for others, including NRC (*e.g.*, document 009546). Further, whether the Staff was aware of CPC's

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[8] In an earlier proceeding involving CPC, a Licensing Board considered allegations from a complaint in a suit filed in a U.S. District Court in determining whether to reopen the record. In denying the motion to reopen the record, the Board considered the allegations in the complaint in the light most favorable to the petitioner, without raising any question as to the propriety of relying on such allegations. CPC apparently did not raise any objections to consideration of the substance of the allegations of the complaint. *Consumers Power Co.* (Midland Plant, Units 1 and 2), LBP-75-6, 1 NRC 227, 229, *aff'd*, ALAB-283, 2 NRC 11 (1975), *clarified*, ALAB-315, 3 NRC 101 (1976).

[9] The Licensing Board and then-parties were first informed of Bechtel Forecast 6 by letter dated February 8, 1980.

Review Report when it made its scheduling determinations in 1980, and whether (assuming it not to have had access to the report at that time) information in the report could have altered its scheduling determinations, are also appropriate subjects for litigation. The Bechtel documents about which CPC recently advised us also may be pertinent to this contention.

We recognize that, as the Applicant readily admits, the various documents may be subject to more than one interpretation. That being so, however, the proper way to resolve such interpretive uncertainties is through litigation of the contention. In short, we find that Ms. Stamiris' proposed Contention 1 sets forth appropriate bases with adequate specificity and hence satisfies the contention requirement of 10 C.F.R. § 2.714(b).

Since we regard this contention as "late-filed," we turn to the factors for late-filed contentions which we must consider (*see* p. 1291, *supra*). No party explicitly discussed these factors in its written submissions — Ms. Stamiris was relying on a different theory to support litigation of the contention and the Applicant believed it to be Ms. Stamiris' obligation to provide information in support of her contention (Tr. 20,820, 20,835). Nonetheless, through oral argument at which all parties asserted their positions, we were able to develop sufficient information in order for us to balance the five factors.[10]

First, Ms. Stamiris has demonstrated "good cause" for her delay in filing the contention. The contention is based primarily on the Dow complaint, and it was submitted initially only two weeks after the Dow complaint was filed. It is noteworthy that CPC's Review Report, which in our view represents important information concerning CPC's truthfulness, was first made known to the Intervenors and Board (and, as far as we know, the Staff as well) after the filing of the Dow complaint in July 1983.[11] This factor balances in favor of admission of the contention.

The second and fourth factors also balance in favor of admission of the contention. No other means are available for Ms. Stamiris to obtain the relief which we could grant if we were to find that Consumers did in fact knowingly misrepresent information to, or conceal information

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[10] Ms. Stamiris offered to submit information in support of a "late-filed" contention, if we were to reject her theory that we could admit the issue through our authority to shape the course of a proceeding (motion at 7 n.2). Although we have rejected Ms. Stamiris' theory (p. 1290, *supra*), we have a sufficient record to perform the requisite balance of factors.

[11] We commend the Applicant's counsel for voluntarily providing this potentially damaging document to the Board and parties, through the Applicant's response to Ms. Stamiris' motion.

from, the NRC -- *i.e.*, license denial or conditions such as the replacement of particular personnel. Moreover, Ms. Stamiris probably would not have standing to intervene in the Dow-Consumers lawsuit (Tr. 20,856). Ms. Stamiris' interest will not be represented by existing parties since, absent our acceptance of the contention, there would be no issue in this proceeding raising the question of scheduling misrepresentations. Finally, although NRC's Office of Investigations could investigate alleged false statements, such an investigation (if it determined certain statements to be false) might in effect only postpone litigation of such statements. Both the Applicant and Ms. Stamiris oppose that method of resolving this issue (Tr. 20,870-72).

In our view, Ms. Stamiris' participation may reasonably be expected to assist in developing a sound record on the question of management attitude. The basic issue will be the credibility of CPC's witnesses. In the past, Ms. Stamiris' cross-examination (and that of counsel who is to represent her on this issue) has been effective on questions of this type. She has also brought to our attention many pertinent documents bearing on such issues. We expect she would do so on this contention. Indeed, she has already identified a considerable quantity of particularized information regarding the substance of this contention. The third factor accordingly balances in favor of admission of the contention.

As all parties recognize, the litigation of this contention could consume considerable time and effort. The issues in the consolidated proceeding accordingly will be somewhat broadened. (The proponent of the contention views it as somewhat narrower than does the Applicant. *See* Tr. 20,811-13.) Inasmuch as the fuel load date for Unit 2 is now estimated by the Applicant to be July 1986 (*see* letter to Board from the Applicant, dated April 12, 1984), we agree with Ms. Stamiris (Tr. 20,851) that there should be no delay in concluding the proceeding prior to the fuel load date, whether or not we admit this contention. Reflecting the broadening of the proceeding, however, this factor balances slightly -- but only slightly -- against admission of the contention.

Given that the first four factors balance strongly in favor of admission of the contention and the last factor balances only slightly to the contrary, we believe that the balance of the five factors favors admission of the contention. Since the requirements for a litigable contention have also been satisfied, we are accordingly admitting the contention. As we discussed with the parties (Tr. 20,861-63, 22,666), the period of time covered by the contention is to extend from the release of Bechtel's Forecast 6 in January 1980, through November 1983.

The parties discussed extensively whether the proposed contentions should be regarded as OM or OL contentions. In our view, the first

could be regarded as a part of either proceeding, but the second and third are clearly OM contentions. Given consolidation, the allocation of contentions to a particular proceeding does not make too much difference. For convenience, we are numbering the contentions we are accepting as OM contentions. The first proposed contention will become OM Contention 6. Nevertheless, we expect to render decisions covering some OM issues prior to the completion of litigation of these new contentions. Any decisions we make which could be influenced by the outcome of the new contentions will be expressly subject to change in light of that outcome. Moreover, the designation for convenience of the first contention as an OM issue is not to be taken as limiting the relief we could grant to that appropriate in the OM proceeding; relief in the OL proceeding may also be considered, to the extent appropriate (*e.g.*, to the consideration of corporate character).

2. The second proposed contention alleges that the Applicant used and relied on test results provided by U.S. Testing Company to fulfill NRC requirements while knowing that these test results were invalid. That CPC used and relied on such test results is no secret: evidence to that effect has long been a part of the record of this proceeding (*e.g.*, Stamiris Exh. 3, Attachments 9, 11 and 14; NRC Inspection Reports 78-20 and 80-32/33 (Attachments 2 and 3 to testimony of Gallagher, ff. Tr. 1754); Tr. 2438-39 (Gallagher)). The new allegation in this contention is that CPC knew that the U.S. Testing test results were invalid at the time it relied on these results before the NRC.

As we previously stated (p. 1291, *supra*), in determining whether to reopen the record as of the time the motion was submitted, we must inquire whether the motion was timely and whether it presents important information regarding a significant issue. The Applicant claims that the motion with respect to this contention is "not timely" (response at 17) but provides no elaboration of its statement. It founds its opposition largely on its argument that no "new evidence" justifying reopening of the record has been presented.

We disagree on both counts. In the first place, although the Applicant's truthfulness has been the subject of some earlier testimony, the allegation of CPC's knowledge of invalidity of the tests represents significant new information stemming from the filing of the first Dow complaint. The initial submission of Ms. Stamiris' contention two weeks later clearly satisfied the timeliness requirement.

More important, for reasons we have spelled out earlier (pp. 1292-93, *supra*), we regard the Dow complaints, which are sworn documents, as valid bases for the contention. We need not determine the validity of the positions contained therein in order to rely on the complaints to

reopen the record. Both complaints allege that Consumers knowingly relied on inaccurate information before the NRC. This information has a direct bearing on the management capability and attitude which we are evaluating in this proceeding, and it appears to differ from the information previously entered into the record.

Indeed, even though Ms. Stamiris is not required to satisfy the standard because of the time she filed her motion, we believe that, if proved, the alleged misstatements of information could significantly change the end result which we might otherwise reach. Thus, not only could such false statements, if proved, warrant severe sanctions but, in addition, they could signify a lack of management character sufficient to preclude an award of operating licenses, at least as long as the responsible individuals retained any responsibilities for the project. *South Texas*, LBP-84-13, *supra*, 19 NRC at 674-75, and cases cited particularly *Consumers Power Co.* (Midland Plant, Units 1 and 2), CLI-83-2, 17 NRC 69, 70 (1983).

The Applicant directs our attention to the circumstance that the amended complaint (¶ 12) presents this claim only on "information and belief"; it also characterizes the claim as "absurd" in postulating that it would act contrary to its own interest by relying on test results known to be inaccurate (response at 14). We decline to resolve these positions at this time, since they go to the merits of the contention. We note, however, that "information and belief" pleadings are accorded considerable judicial stature (5 C. Wright & A. Miller, Federal Practice and Procedure: Civil § 1224 (1969)). "[A] corporation [such as Dow] may find pleading on information and belief a useful form of allegation when its information has been received from subordinate employees within the firm" (*id.*). Further, we might also observe that what may be "absurd" from a corporate viewpoint may not necessarily be absurd from the individual viewpoint of a particular corporate official or agent.

Other information stemming from the documents provided to the parties and Board also supplies bases for this contention. For example, it appears that both CPC and Bechtel (CPC's agent) had knowledge of infirmities in certain U.S. Testing results some time around February 1978. *See* letter from J.F. Newgen (Bechtel) to D. Edley (U.S. Testing), dated February 1, 1978 (copy received by Consumers on February 10, 1978) (Attachment 3 to Ms. Stamiris' Second Supplemental Memorandum dated October 5, 1983). Although the document relates to tests performed for the administration building, it includes statements which could be construed as indicating Bechtel's awareness of a more pervasive failure of U.S. Testing to conform to testing specifications (Tr. 2573-74 (Gallagher)).

Nonetheless, the Applicant's testimony presented in July 1981 indicated that, on the basis of borings taken from September 27-30, 1977, the Company determined that the grade beam failure of the administration building was localized. Keeley, ff. Tr. 1163, at 5. U.S. Testing was also said to have used similar procedures for a number of its tests throughout the site (Tr. 1263 (Keeley)). But CPC, in discussions with the NRC Staff as late as the summer of 1979, appears to have continued to portray the cause of the U.S. Testing inaccuracies with respect to the administration building borings as "administrative problems" (document 7908170390), despite knowledge of more severe problems as early as the fall of 1977 (Audit Report F-77-32, Board Exh. 3; Bechtel "Administration Building" Report dated December 1977, document SB 13752). Indeed, the Staff was not even informed of the grade beam failure until December 1978, despite the fact that the NRC's investigation into the diesel generator building settlement began in October 1978 and the administration building settlement was considered by some Staff members as indicative of soils compaction deficiencies in the area of the nearby DGB (Tr. 2336, 2341, 2345-47, 2412 (Gallagher)).[12]

The Staff also testified that it had no basis for concluding that information regarding the administration building (a nonsafety structure) had been intentionally withheld from NRC (Tr. 2342, 2357 (Gallagher)). This proposed contention, if proved, could alter the record in this regard. For that reason, the information appears to be important to an issue which is also significant.[13] Moreover, Ms. Stamiris initially filed her motion in a timely fashion, two weeks from the filing of the first Dow lawsuit. The standards for reopening the record have thus been clearly satisfied for this contention. We will admit this contention as OM Contention 7.

3. Ms. Stamiris' third proposed contention concerns a test boring taken near the DGB and analyzed by U.S. Testing Company. The analysis of this boring by U.S. Testing Company involves one or more of the tests alleged in the previous contention to have been falsified. The third contention is very close to the second in alleging that the Applicant knowingly misrepresented the results of the boring to the NRC.

To the extent that this contention is based on information in the Dow complaint, it was submitted in a timely fashion. But unlike the previous

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[12] Apparently the Staff did not become aware of the February 1, 1978 letter to U.S. Testing until some time after December 1978 (Tr. 2572-73 (Gallagher)).

[13] The information about which the Staff informed us on April 27, 1984, and that concerning which the Applicant advised us in the April 30, 1984 communication which we discuss first (p. 1289, *supra*) could also be relevant to this contention. We express no opinion on this matter at this time.

contention, there is no significant allegation here that has not been previously addressed in this proceeding. The Applicant was already charged with making a material false statement that *incorrectly* indicated the placement of random fill rather than controlled compacted cohesive fill and has agreed not to contest that issue. For its part, the NRC Staff agreed that the material false statement was not made intentionally. Joint Exh. 6; Hood, *et al.*, ff. Tr. 1560, at 4-6.

Even more important, the boring log in question has been introduced into evidence and was the subject of extensive testimony. *See* Stamiris Exh. 19; Tr. 3437-41 (Peck) and 3589-3636 (Kane). Although the soil in question is different from what the FSAR represented, it nevertheless is competent soil (Tr. 3618-19 (Kane)).[14] Either type would have been acceptable if it had been compacted correctly (Tr. 4426-27 (Kane, Hood)).

In short, all of the information in the bases relied upon by Ms. Stamiris appears to have already been considered in this proceeding. The Staff asserts that we should litigate this contention because of the allegation that, at the time of the boring in 1977, CPC knew the problem was site-wide and provided the NRC with incorrect information (Tr. 20,806). An affirmative intent by the Applicant to mislead the NRC on a significant matter would, of course, be a serious indictment of the Applicant's managerial attitude. We read the contention (either in its initial or revised forms, *see* note 2, *supra*) as being based on alleged misinformation about the soil type used for plant fill. Nothing in the bases relied upon by Ms. Stamiris in both versions of this contention would indicate that the types of materials utilized for plant fill were a site-wide problem. Indeed, we do not view the log itself as indicating any problem with the soil type, as alleged in both forms of this contention. For that reason, we do not perceive that Ms. Stamiris has brought to our attention with respect to this contention any significant new information of the type which would warrant a reopening of the record.[15] Since standards for reopening the record on this contention have not been satisfied, we decline to reopen on this matter.

We note that the question of the Applicant's knowledge or lack of knowledge of the site-wide nature of any soils deficiencies is a part of

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[14] We assume that, in giving this testimony, Mr. Kane took account of the hammer weight and fall in relying on the blow counts shown on Stamiris Exh. 19 and discussed by CPC in its letter to us of April 30, 1984. If not, we call upon the Staff to advise us promptly (with an appropriate affidavit, if necessary).

[15] Unlike with respect to a new, timely filed contention, on a motion to reopen the record, we can give some consideration to the substance of the information sought to be added to the record. *Vermont Yankee Nuclear Power Corp.* (Vermont Yankee Nuclear Power Station), ALAB-138, 6 AEC 520, 523-24 (1973); *cf. Houston Lighting and Power Co.* (Allens Creek Nuclear Generating Station, Unit 1), ALAB-590, 11 NRC 542 (1980).

Ms. Stamiris' second contention which we are accepting. The question stressed by the Staff in supporting the third contention will thus likely be considered to some extent in our resolution of the second contention.

We also note that our ruling rejecting the third proposed contention does not take into account the information provided to us by the Applicant on April 30, 1984 (the first CPC communication of that date discussed on p. 1289, *supra*), except with respect to the matter described in note 14, *supra*. Nor does it consider the information provided to us by the Staff on April 27, 1984. Insofar as we can ascertain, we regard this new information as possibly relevant to the third proposed contention but more likely relevant either to matters heretofore litigated or, alternatively, to a potential contention comparable to the third proposed contention (*i.e.*, knowledge of site-wide deficiencies) but premised not on whether information on soil type was withheld but rather on whether information was withheld as to the degree of compaction. We trust that the Applicant and/or Staff will keep us and the parties advised of any new information of this type which may develop.

4. Ms. Stamiris has asked for discovery on her proposed contentions, both in the form of documents allegedly not turned over to her previously and new discovery. We will not determine whether any documents should have been, but were not, turned over to Ms. Stamiris earlier. We note that, upon further checking, Ms. Stamiris discovered that she had received certain of the documents she initially thought had not been turned over to her.

CPC has already voluntarily supplied many documents to the parties and Board. We believe that further discovery on the two admitted contentions is warranted, but only to the extent it seeks information or documents relevant to those contentions beyond what CPC has already supplied. The discovery we are permitting will be so limited.

In addition, to the extent we must evaluate discovery requests, we will consider, as within the proper scope of discovery, information tending to demonstrate, or leading to information that could demonstrate whether CPC knowingly made false statements to the NRC (either the Staff or a Licensing Board). By "knowingly," we are including intentional falsehoods, intentional incomplete statements, intentional omissions, and statements made "with disregard for the truth." *Houston Lighting and Power Co.* (South Texas Project, Units 1 and 2), CLI-80-32, 12 NRC 281, 291 n.4 (1980); *id.*, LBP-84-13, 19 NRC at 674-75. But whether CPC *should have known* that a statement was inaccurate or incomplete is not in itself a part of these contentions (although it may bear substantially on issues already admitted to this proceeding).

We are presently authorizing a four-month period for formal discovery, commencing on the date when the Applicant's reply findings on QA/management attitude issues are to be submitted (currently June 8, 1984). We direct that parties engaged in discovery on these two contentions send us monthly reports (either individually or collectively) on the progress of discovery. (These reports should be filed on the first Monday-workday of each month, beginning in August 1984.) Ms. Stamiris has requested four to six months for discovery (Tr. 20,813, 20,864); we will utilize these reports to determine whether additional discovery is warranted.

Bearing in mind the fact that these contentions are limited to knowing misrepresentations (as defined above), we would hope that the parties could agree (prior to trial of the issues) to a limitation of scope to matters clearly tending to demonstrate or suggest such knowing misrepresentations. We would also trust that the parties will attempt to develop methods for pre-trial settlement or dismissal of at least portions of these issues, to the extent appropriate. Such a course of action appears consistent with that favored by several parties at oral argument (Tr. 20,806, 20,814-15, 20,865-68)

II. SINCLAIR MOTION

Ms. Sinclair's motion was made orally (Tr. 19,341-46, 19,382-83) and followed by an almost identical written motion dated July 28, 1983. It seeks to have the record of this consolidated proceeding held open until the completion of the Dow lawsuit, on the ground that information may be obtained through discovery in that litigation "which will be pertinent to the issues of the OM and OL proceedings" and that it is important that "all available facts" relative to those issues be considered by us. Ms. Sinclair spells out eight areas of inquiry where, she claims, "more information can be expected."

The Applicant opposed Ms. Sinclair's motion, both through an oral response (Tr. 19,346-47) and in a written response dated August 17, 1983. The Staff also generally opposed Ms. Sinclair's motion, although it recognized one allegation of the Dow litigation (the scheduling matter) which should be litigated before us (Tr. 19,350-52, 19,356-57, 19,397) Mr. Wendell H. Marshall, another Intervenor, supported Ms. Sinclair's motion by mailgram dated July 29, 1983.

We do not believe that the relief sought by Ms. Sinclair's motion is warranted. In the first place, Ms. Sinclair is only speculating at this time that the Dow lawsuit will lead to the discovery of significant information

pertinent to the OM or OL proceeding which would not otherwise be incorporated into this record. Many of the issues in the Dow lawsuit are not particularly pertinent to matters before us. In that connection, the two new Stamiris contentions which we are accepting incorporate in our view the allegations of the Dow lawsuit most closely related to the matters at issue in the OM/OL proceeding. One of those contentions will litigate the scheduling allegation which the Staff, in commenting upon Ms. Sinclair's motion, found appropriate to consider in this proceeding.

Furthermore, if the Dow lawsuit should produce truly significant information not previously included in the record here and pertinent to the OM/OL proceeding, Ms. Sinclair could (depending on the status of this proceeding) move to supplement the record and incorporate it into this proceeding, or to reopen the record of this proceeding, or (if, all levels of review within NRC have been completed) seek consideration of the matter under 10 C.F.R. § 2.206.

Finally, the length of the Dow lawsuit, and hence the scope of relief being sought by Ms. Sinclair, is presently indeterminate. All proceedings, of course, even this one, must at some point come to an end. *See United States v. Interstate Commerce Commission*, 396 U.S. 491, 521 (1970). In our view, it would be "productive of little more than untoward delay" for us to freight the possible conclusion of the OM/OL proceeding with the uncertainties of the Dow lawsuit. *Southern California Edison Co.* (San Onofre Nuclear Generating Station, Units 2 and 3), ALAB-171, 7 AEC 37, 39 (1974); *Cleveland Electric Illuminating Co.* (Perry Nuclear Power Plant, Units 1 and 2), ALAB-443, 6 NRC 741, 747-48 (1977).

For these reasons, we are denying Ms. Sinclair's motion. This denial is without prejudice to Ms. Sinclair's seeking (to the extent appropriate) the other forms of relief which we have outlined, particularly to supplement or reopen the record before us.

III. ORDER

In light of the foregoing discussion and the entire record on the motions before us, it is, this 7th day of May 1984,

ORDERED

1. That Ms. Stamiris' motion to admit three new contentions is *granted in part* and *denied in part*. Proposed contentions 1 and 2, renumbered as OM Contentions 6 and 7, are admitted; proposed contention 3 is denied.

2. That discovery on new OM Contentions 6 and 7 is authorized to the extent indicated in part I.C.4 of this Memorandum and Order. Parties are *directed* to file reports as set forth therein (pp. 1300-01, *supra*).

3. That Ms. Sinclair's motion to hold open the record of this proceeding pending completion of the Dow lawsuit is *denied*, without prejudice to Ms. Sinclair's later seeking (to the extent appropriate) to supplement or reopen the record before us.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

Charles Bechhoefer, Chairman
ADMINISTRATIVE JUDGE

Cite as 19 NRC 1304 (1984) LBP-84-21

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD

Before Administrative Judges:

James L. Kelley, Chairman
Dr. Richard F. Foster
Dr. Paul W. Purdom

In the Matter of

Docket Nos. 50-413
50-414
(ASLBP No. 81-463-06-OL)

DUKE POWER COMPANY, ***et al.***
(Catawba Nuclear Station,
Units 1 and 2)

May 30, 1984

The Licensing Board grants Applicants' unopposed motion to authorize fuel loading and certain precriticality testing prior to a Board decision on safety and environmental issues. The Board finds that it is not required to decide the merits of any of the issues pending before it as a precondition to favorable action on the motion and that the proposed activities will not pose any danger to the public.

MEMORANDUM AND ORDER
(Authorizing Issuance of a License to Load Fuel and Conduct Certain Precritical Testing)

On April 11, 1984, the Applicants filed a "Motion for Authorization to Issue a License to Load Fuel and Conduct Certain Precritical Testing." The motion was based on representations that "the activities

for which authorization is sought will pose no risk to public health and safety" and that "the contentions which are presently pending before this Board are not relevant to the authority being requested." The motion was supported by technical affidavits describing the activities to be conducted and their safety implications.

On April 23, 1984, the Intervenors Palmetto Alliance and Carolina Environmental Study Group filed their response to the motion. Based on the Applicants' description of the activities proposed, the Intervenors stated their belief that such activities "will pose no technical threat to the public health and safety." The Intervenors further stated that they "do not oppose the conduct of such activities," reserving their right to be heard in opposition to future requests to conduct activities at Catawba involving criticality. The Intervenors urged the Board to refrain from making findings with respect to the contentions presently in controversy, viewing such findings as unnecessary for the authority presently sought by the Applicants.

On May 1, 1984, the NRC Staff filed its response to the Applicants' motion, supported by a technical affidavit. The Staff agreed with the Applicants (and the Intervenors) that "since the activities sought to be authorized are not likely to lead to accidents affecting the health and safety of the public, the admitted contentions are not relevant to the activities for which authorization is sought." Response at 2-3. The Staff went on to explain in some detail the nature of the risks posed and their lack of safety significance to the admitted contentions. The Staff (like the other parties) concludes that "there are no factual issues in controversy which require findings based on the record of the proceeding."

As our summary of the pleadings indicates, there were no significant disagreements among the parties on the substance of the pending motion. After the pleadings were filed, therefore, the parties took the commendable course of developing a stipulation which has now been signed by all parties and submitted to the Board for approval. A copy of the "Stipulation Among the Parties," dated May 15, 1984, is attached hereto (not published) and incorporated herein. On the basis of the pleadings and affidavits before us and considering the scope of the contentions pending in this proceeding, the Board finds that the activities to be authorized, as described in the attached stipulation, pose no significant risk to public health and safety and that therefore the admitted contentions in this proceeding are not relevant to such activities. No findings on those contentions are made or implied by this Memorandum and Order.

In accordance with the foregoing, the attached Stipulation is approved and the Director of Nuclear Reactor Regulation is authorized, upon

making findings on all applicable matters specified in 10 C.F.R. § 50.57(a), to issue to the Applicants a license to load fuel and conduct certain precritical testing at the Catawba facility, as more particularly described in the attached Stipulation Among the Parties dated May 15, 1984. This authorization is subject to the conditions that (1) the Applicants shall report to the Board and parties all nonconformances or deviations occurring in authorized activities, and (2) the Intervenors shall have an opportunity to be heard with respect to any further authority for activities at Catawba where fission product and decay heat generation are involved.

FOR THE ATOMIC SAFETY AND
LICENSING BOARD

James L. Kelley, Chairman
ADMINISTRATIVE JUDGE

Bethesda, Maryland
May 30, 1984

[The attachment has been omitted from this publication but may be found in the NRC Public Document Room, 1717 H Street, NW, Washington, DC 20555.]

Directors' Decisions Under 10 CFR 2.206

DIRECTORS' DECISIONS

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

OFFICE OF NUCLEAR REACTOR REGULATION

Harold R. Denton, Director

In the Matter of **Docket No. 50-333**
(10 C.F.R. § 2.206)

POWER AUTHORITY OF THE STATE OF NEW YORK
(James A. FitzPatrick Nuclear Power Plant)

May 8, 1984

The Director of the Office of Nuclear Reactor Regulation denies a petition submitted by Ellyn R. Weiss and Robert D. Pollard on behalf of the Union of Concerned Scientists requesting that operation of the James A. FitzPatrick Nuclear Power Plant be suspended pending the determination of the adequacy of the pipe supports at the facility to withstand normal operating loads and seismic events.

TECHNICAL ISSUE DISCUSSED: 10 C.F.R. PART 21

The obligation to make a Part 21 report to the NRC does not arise until it is determined that a defect within the meaning of Part 21 exists.

DIRECTOR'S DECISION UNDER 10 C.F.R. § 2.206

I.

By letter to the Commission dated September 12, 1983, Ellyn R. Weiss and Robert D. Pollard, on behalf of the Union of Concerned Scientists (hereinafter referred to as UCS or the petitioner) requested

that immediate action be taken to suspend operation of the James A. FitzPatrick Nuclear Power Plant. UCS based its request upon correspondence it had obtained which questioned the adequacy of pipe supports at FitzPatrick. That correspondence, a letter dated June 30, 1983 from Target Technology, Ltd. to the FitzPatrick licensee, the Power Authority of the State of New York (PASNY), informed PASNY of Target's opinion that piping supports at FitzPatrick required corrective action. Target had been hired by PASNY to reanalyze a group of pipe supports at FitzPatrick following the discovery in 1979 that Stone and Webster, the facility's architect-engineer, had apparently miscalculated the seismic stresses in certain safety-related piping systems with which these supports[1] were associated.

Based on the concerns expressed by Target, the petitioner requested an immediate shutdown of FitzPatrick to enable a full NRC inspection of the questionable pipe supports. UCS asked that operation not be resumed until "commitments" made in the FitzPatrick Final Safety Analysis Report (FSAR) and requirements contained in applicable Office of Inspection and Enforcement (IE) Bulletins had been met at FitzPatrick. The petitioner further requested that the Commission initiate appropriate enforcement action regarding these issues, in particular requesting that the NRC determine whether the reporting requirements of Part 21 of the Commission's regulations were violated regarding the Target letters, or whether a material false statement was made by PASNY in certifying to the NRC that the calculated stresses of the piping supports were checked against the applicable standards. UCS's letter was referred to the staff for treatment as a petition pursuant to section 2.206 of the Commission's regulations.

By letter dated September 23, 1983, the Director of the Office of Nuclear Reactor Regulation denied the petitioner's request for immediate relief. At that time, it was determined that the pipe support systems at FitzPatrick did not pose an immediate safety hazard, based upon the licensee's reassessment of the pipe support analyses and corrective actions and the NRC's own visual assessment of a sample of the pipe supports alleged to be damaged.

Upon my request pursuant to 10 C.F.R. § 50.54(f), the licensee responded to UCS's petition by letter dated November 18, 1983. The staff has evaluated the UCS petition and other pertinent information. For the reasons stated in this decision, the petitioner's request is denied.

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[1] Hereinafter designated as "affected supports."

II.

A brief historical review is helpful at this point to place the petitioner's assertions in proper perspective. In March 1979, in the course of evaluating certain piping design deficiencies at the Beaver Valley Power Station, significant discrepancies were observed between the computer code employed by Stone and Webster in the original seismic analysis of safety-related piping systems and the then currently acceptable computer code. These discrepancies were attributed to the different methods used to combine earthquake load components. It was determined that these discrepancies had the potential to cause significant adverse effects on the ability of certain piping systems to withstand seismic events. As a result, the Beaver Valley licensee suspended power operation of that facility on March 9, 1979. It was also found that four other facilities, including FitzPatrick, could anticipate similar problems because the same erroneous computer code was employed in the original designs. Consequently, the NRC ordered these plants to suspend operation until such time as all affected safety-related piping systems were reanalyzed for seismic events using the acceptable computer code. If the reanalyses indicated components which deviated from applicable American Society of Mechanical Engineers (ASME) Code requirements, suspension of operation was to continue until such deviations were rectified. The Show-Cause Order suspending operation of FitzPatrick was issued on March 13, 1979. *See* 44 Fed. Reg. 16,510 (1979).

In response to the findings at Beaver Valley, IE Bulletin 79-07, "Seismic Stress Analysis of Safety-Related Piping," was issued to all power reactor licensees on April 14, 1979. This bulletin requested licensees to identify all safety-related piping systems for which seismic analyses were performed using the erroneous modal-response combination technique, and to submit a plan of action and estimated schedule for seismic reanalyses of these systems. Licensees were also requested to conduct a preliminary assessment of safety impacts. The bulletin also specified that all reanalyses should reflect the existing or "as-built" configurations of the piping systems and associated supports. On July 2, 1979, IE Bulletin 79-14, "Seismic Analysis for As-Built Safety-Related Systems," was issued to all licensees in order to address the subject of nonconformance with design documents, as reflected in "as-built" piping system configurations, and the impact of these nonconformances on the validity of seismic analyses performed as part of the original design. This bulletin requested that licensees undertake an inspection program to verify conformance to design documents, and to consider the need for seismic reanalyses where nonconformances were identified.

The NRC lifted the suspension of facility operation imposed by the March 13th order on August 14, 1979 upon finding that the licensee had shown cause why operation of the FitzPatrick plant should not remain suspended, and that "FitzPatrick could safely withstand the effects of seismic events should they occur." *See* 44 Fed. Reg. 49,530 (1979). At this point in time, the licensee had completed reanalyses of all affected supports inaccessible during normal operation as well as many of the accessible supports.[2] The August 14th order required the licensee to complete reanalyses of the remaining supports and to propose a schedule for implementation of any needed modifications within 60 days of startup. The licensee also continued its efforts to respond to the action items contained in IE Bulletins 79-07 and 79-14. Staff reviews later found the licensee's responses to 79-07 and 79-14 acceptable and these bulletins were subsequently closed out for FitzPatrick.[3]

Target Technology, Ltd. was retained by the licensee in 1979 to perform pipe support calculations for 348 supports at FitzPatrick. These supports were identified by the licensee as possibly requiring modifications as a result of the seismic reanalyses performed in connection with IE Bulletins 79-07 and 79-14 and the Show-Cause Order. In a September 3, 1980 letter from Target to the licensee, Target indicated that its effort was nearing completion and that the calculations performed so far were limited to meeting the acceptance criteria for the combination of normal plus seismic loads. Target proposed a follow-on task of determining whether the 348 supports also satisfied the acceptance criteria for normal operating loads only. An estimated scope of work and proposed cost for this task were provided in the letter.

In a subsequent letter dated December 20, 1982 from Target to the licensee, Target stated that the pipe support evaluations performed in 1979-80 were not in complete compliance with the licensee's FSAR commitments because the supports were not evaluated against normal load acceptance criteria. Furthermore, Target stated that "there may be supports which will require modification to bring the plant to FSAR compliance" and that it considered this matter to be a safety concern as well as a potentially reportable item under 10 C.F.R. Part 21. On January 3, 1983, Target provided the licensee, at the latter's request, with a sample list of twenty supports which, according to Target, had the potential of not meeting Code-allowable limits for normal operating loads. The licensee referred this list to Stone and Webster for evaluation and

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[2] Modifications to these supports, where indicated by the reanalyses were completed prior to startup.

[3] *See* NRC Inspection Reports 50-333/81-09, 50-333/81-12, and 50-333/84-04.

concurrently initiated its own evaluation to determine whether a reportable defect under 10 C.F.R. Part 21 existed.

In a third letter from Target to the licensee dated June 30, 1983, Target documented its comments on a meeting which took place on June 27th among the licensee, Stone and Webster, and Target to discuss the pipe support matter. In this letter, Target stated that some supports included in its January 3, 1983 list of twenty supports "clearly exhibit physical signs of structural damage from normal operating loads and have safety implications for the plant."[4] Furthermore, Target alleged that "because the as-built condition of the plant did not match the piping configurations which were initially analyzed," the support loads changed dramatically for many supports. In addition, Target stated that the design code actually employed for pipe supports at FitzPatrick was not consistent with design code commitments contained in the Final Safety Analysis Report (FSAR).

To assess the allegations made by Target regarding pipe support deficiencies at FitzPatrick, the licensee retained United Engineers and Constructors. United Engineers' effort, which commenced during the summer 1983 refueling outage, consisted of a review of Stone and Webster's analytical methodology, procedures and calculation packages for pipe support design at FitzPatrick. United Engineers also performed field inspections of selected pipe supports to verify that piping system/support design configurations were reflected by the as-built condition of pipe supports. While United Engineers' field inspections identified certain dimensional discrepancies in several supports, none of the supports showed any evidence of physical damage.

III.

The petitioner's request for initiation of enforcement action was based upon five concerns the petitioner believed Target raised in its June 30, 1983 letter to the licensee. *See* Petition at 2. These issues are discussed below.

1. Ability of FitzPatrick Pipe Supports to Withstand Normal Operating Loads

In questioning the adequacy of a large number of pipe supports to withstand normal operating loads, the petitioner relies upon alleged evi-

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[4] Target did not specifically identify which supports, or how many, exhibited damage.

dence of physical damage to various supports, as reported by Target. In addition, UCS alleges that discrepancies exist between as-built piping system configurations and the configurations used in many of the original design calculations. *See* Petition at 2.

Assessment of this concern has been the focal point of independent inspections conducted by the licensee, the NRC, and United Engineers and Constructors. The licensee performed a visual inspection of eighteen of the twenty supports[5] identified by Target as having a seismic loading component of less than 33% of the total load. This loading component is significant in that it raised the possibility that Code-allowable limits for normal operating loads alone may not be met. The inspection, which was conducted in July 1983 during FitzPatrick's refueling outage, revealed damage to only one of the supports. The damage, which was confined to a structural steel I-beam located above a trunnion on a main steam line, consisted of a localized deformation of the beam's lower flange and cracked concrete surrounding the base-plate embedment to which the beam was welded. The licensee had been aware of the flange deformation since 1979 when it was discovered during field walkdown activities related to IE Bulletin 79-14. An evaluation of the bent flange conducted by Stone and Webster and the licensee at the time of its discovery in 1979 indicated that the support was still capable of withstanding normal operating loads. The cracked concrete, however, was not identified in 1979 because the area (a main steam tunnel wall) was covered with insulation and the embedment was not considered to be within the inspection boundary of the pipe support under IE Bulletin 79-14.

A subsequent inspection by the NRC during the summer 1983 outage of a sample of the group of twenty supports called into question by Target, including the single support identified by the licensee as being damaged, showed no other evidence of damage. In addition, both the NRC and United Engineers inspected supports other than those called into question by Target during the summer 1983 outage and after restart in autumn 1983. These inspections focused on supports located in high-energy, large-diameter piping systems, located near critical components

[5] Of the two remaining supports, one was modified and relocated within the torus during the 1981-82 refueling outage and the other was modified during the summer 1983 outage. These modifications were the result of the Mark I Containment Long-Term Program (for all Mark I licensees) and provided an increased safety margin to the subject supports.

and penetrations. No other evidence of pipe support damage was identified.[6]

Assessment of the impact of discrepancies between as-built and as-designed piping system data on the validity of piping and support analyses has been addressed by the licensee in response to IE Bulletin 79-14. It should be emphasized that both IE Bulletins 79-14 and 79-07 were directed at potential nonconservatisms in only the seismic portion of the pipe stress analyses performed for safety-related systems.[7] Bulletin 79-07 addressed an error discovered in the method employed to combine earthquake load components. This error, which led to the five-plant shutdown in March 1979 and subsequently to the issuance of 79-07, therefore had no bearing on the normal loads portion of the piping system analyses or on the associated normal loads acting on the supports.

IE Bulletin 79-14 regarding nonconformances to design documents, however, did have a potential effect on the normal loads portion as well as the seismic portion of the piping system analyses, even though the bulletin itself addressed only the latter. Identification of nonconformances at FitzPatrick was conducted concurrently with the licensee's efforts with respect to IE Bulletin 79-07, which specified that any reanalyses reflect as-built data, and the Show-Cause Order. As a result, any significant nonconformances, as they were discovered, were factored into the reanalyses which, as stated above, consisted of both a seismic load and a normal load analysis. Therefore, both the seismic and normal support loads computed during the 1979 reanalysis effort reflected as-built data. Modifications were made to those supports where a potential safety concern could have existed, as identified by the reanalyses and resulting from the computer code error and/or as-built nonconformances. These modifications resulted in increased support strength, and were intended to enhance the ability of the affected supports to withstand earthquake loads.

The 1983 inspections performed by NRC and United Engineers also included an assessment of nonconformances in safety-related piping systems. United Engineers' field inspections of a sample group of supports, and a subsequent inspection by the licensee, identified certain

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[6] The specific scope, support sampling rationale, and findings of the inspections performed by the licensee, NRC, and United Engineers have been documented in the following references: Letter from J.P. Bayne (PASNY) to D.B. Vassallo (NRC) (September 21, 1983); NRC Inspection Report 50-333/83-18; NRC Inspection Report 50-333/83-24; Letter from R.W. Barton (United Engineers) to J.P. Bayne (PASNY) (December 19, 1983).

[7] Pipe stress analysis entails computation of the responses from both normal operating and earthquake loadings. Resulting loads at support locations are computed as part of these analyses.

dimensional discrepancies in several supports.[8] These supports, however, showed no evidence of physical damage. The discrepancies consisted of undersized or missing fillet welds and dimensional deviations in structural steel members. Although these discrepancies would not contribute to support damage under normal plant operation, and were of a nature such that invalidation of piping stress analyses would not be expected, Stone and Webster reevaluated the affected supports using the as-built data to ascertain analytically whether these discrepancies challenged the ability of the supports to withstand normal operating loads. Stone and Webster concluded, on the basis of this reevaluation and from the lack of visual evidence of damage, that the integrity of the supports under normal loading conditions was not compromised.[9] The staff performed an audit of Stone and Webster's reevaluation effort, including the methodology employed and a representative sampling of calculations, and found it to be acceptable.[10]

An assessment by the NRC of the damage to the main steam line support attributes the cause of the damage to improper installation resulting in insufficient clearances to accommodate normal thermal expansion of the main steam piping. This conclusion is supported by the staff's examination of photographs of the damaged support provided by the licensee and taken during the summer 1983 outage. This examination indicated that the local deformation evident on the lower flange of the I-beam as well as the visible pattern of concrete damage is consistent with the directions and points of application of the forces and moments that would be induced by restraint of thermal growth. Examination of photographs of a mirror image support on another main steam line of identical configuration and subject to the same design loadings showed no evidence of physical damage.

To correct the deficiency arising from the damage to the main steam line support, the licensee modified the support prior to plant restart in September 1983 to eliminate the need for the load resisting capacity of the damaged embedment. Although the loads induced by thermal restraint will still exist at the modified support, their magnitudes should

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[8] *See* letter from R.W. Barton (United Engineers) to J.P. Bayne (PASNY) (November 11, 1983); Letter from J.P. Bayne (PASNY) to D.B. Vassallo (NRC) (December 19, 1983).

[9] *See* letter from J.P. Bayne (PASNY) to D.B. Vassallo (NRC) (December 19, 1983); Letter from J.P. Bayne (PASNY) to D.B. Vassallo (NRC) (January 20, 1984).

[10] To determine whether the integrity of the supports under seismic loading was compromised, Stone and Webster also performed a seismic loading reevaluation of the affected supports and concluded that the discrepancies identified by United Engineers and the licensee did not result in an inability of the supports to withstand earthquake loadings. In addition, the staff audited Stone and Webster's seismic load reevaluation for the affected supports. This audit, which was similar in scope to the normal loads audit, found Stone and Webster's effort to be acceptable.

now be significantly reduced because of the additional clearance created by the locally deformed lower flange. Nevertheless, as part of NRC's continuing inspection program, the staff plans to inspect this support during the next outage to verify the adequacy of the modifications.

Based on the above considerations, the petitioner's concern that a large number of supports at FitzPatrick may not be able to withstand normal operating loads appears unfounded.

2. Lack of Consideration of Normal Operating Loads

UCS relies upon Target's June 30, 1983 letter as the basis for its concern that design calculations were never performed for normal operating loads during the 1979 seismic reevaluation effort ordered by the NRC. UCS appears to be concerned that many of the supports at FitzPatrick, particularly those subjected to a relatively low seismic loading component, would not meet the normal load criterion. The technical issue inherent in this concern is whether the support designs at FitzPatrick meet the acceptance criteria for normal loads, and whether a loss of support integrity can result under normal operating conditions if these criteria are not met. *See* Petition at 3.

Piping stress analysis entails the computation of pipe wall stresses at various locations in a piping system as caused by pressure, deadweight loads, other sustained mechanical loads, thermal expansion, and occasional loads including those due to earthquakes. This information is used in design of the piping itself. In addition, the results of the piping analysis provide input to the support analysis for each of the designated loading conditions. The pipe support stresses are then calculated and compared to allowable stresses specified in the acceptance criteria for each loading condition.

The loading conditions and allowable stress limits applicable to support design for FitzPatrick are as follows:

$$DL + THER + SRSS(DBE, OCC) \leq 1.33 \times ALLOWABLE$$
(seismic loading condition, allowable limit)

$$DL + THER + OCC \leq ALLOWABLE$$
(normal loading condition, allowable limit)

where

DL	=	Deadweight Load
THER	=	Thermal Load
DBE	=	Design Basis Earthquake Total Load
OCC	=	Occasional Transient Loads
SRSS	=	Square Root of Sum of Squares (of quantities in parentheses)
ALLOWABLE	=	American Institute of Steel Construction (AISC) Code Stress Basis Allowable

These loads, load combinations, and allowable limits are part of a design specification developed by the licensee in order to comply with the American Institute of Steel Construction (AISC) Code. It is the second criterion, pertaining to normal operating loads, that concerns the petitioner.

UCS is particularly concerned by Target's allegation that Target was told by the licensee and Stone and Webster in 1979 not to consider the second criterion pertaining to normal operating loads as part of the support evaluation effort. Whether or not Target was told not to conduct a normal loads evaluation has little, if any, bearing on the ability of the pipe supports to withstand those loads. As noted earlier, the major issue in the five-plant shutdown and the issuance of IE Bulletins 79-07 and 79-14 was the validity of the seismic portion of the design basis pipe stress analysis and, consequently, the ability of the supports to withstand earthquake loads, as determined by meeting the seismic acceptance criterion set forth above. The March 1979 Show-Cause Order and Bulletins 79-07 and 79-14 did not specifically request the licensee to determine whether the facility's supports met the normal load acceptance criterion. Furthermore, the codes applicable to pipe support design for FitzPatrick do not explicitly state the load combinations to be met for subsequent pipe support changes, including whether normal loads needed to be calculated.[11]

No threat to public health and safety would result from the case in which supports satisfying the seismic condition allowable limit were not

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[11] However, the staff would require the licensee to perform and document a normal loads evaluation for plant modifications when the lack of a normal loads evaluation would impact the technical specifications or result in an unreviewed safety question. *See* 10 C.F.R. § 50.59. Neither of these situations arose from the pipe support design procedures used by the licensee during the FitzPatrick seismic reevaluation effort.

checked against the normal load condition allowable limit. This conclusion is based on the following considerations. In the worst case, where the seismic load component (DBE) in the first condition was zero, the allowable stress limits would be exceeded by a maximum of 33%. Because of the safety factors employed in defining the allowable limits, an increase of this amount would not result in the material yield stress being exceeded with an attendant loss of support integrity. As a result of the reanalyses performed in 1979, the as-built piping system configurations were reflected in both the normal load and seismic load terms appearing in these conditions.

Furthermore, the licensee performed a normal loads evaluation in August 1983, using the second condition for each of 342 supports within the scope of Target's original work to determine if the Code-allowable for normal loads was, in fact, exceeded. Based on this analysis, 337 supports were found to be within the allowable limits. The limits were exceeded for five supports. Further detailed evaluation of these five supports revealed the use of many conservatisms in the original design computations. By use of more realistic assumptions, the licensee was able to demonstrate that normal load limits would, in fact, not be exceeded. The staff audited the normal loads evaluation performed by the licensee, including the calculation packages for the five supports that exceeded Code-allowable limits. This audit, which comprised an evaluation of the methodology employed and an examination of a representative sampling of calculations, found the licensee's effort to be acceptable. Additionally, Stone and Webster performed and documented a normal load reevaluation of all affected supports for which it was the engineer-of-record, which included the twenty supports identified by Target, and determined that the normal loads condition was met in all cases. The staff performed a similar audit of Stone and Webster's reevaluation effort and found the Stone and Webster reevaluation to be acceptable. The total number of supports evaluated by the licensee and by Stone and Webster comprise all the affected supports at FitzPatrick. Therefore, the staff concludes that the normal loads acceptance condition has been satisfied for all affected supports and that no structural modifications to these supports are necessary.

3. Use of Appropriate Code Regarding Earthquake Stresses

The petitioner relies upon Target's understanding of the FitzPatrick FSAR to question whether the proper standard was used in designing the pipe supports to withstand seismic loads. It is asserted that in the FSAR the licensee stated it would use ANSI Code B31.1.0 - 1967 in

designing the FitzPatrick pipe supports. In fact, stated Target, the FitzPatrick architect-engineer used the AISC Code in designing the supports. Consequently, the petitioner is concerned that supports found acceptable using the AISC Code could exceed the allowable limits for seismic loads under ANSI B31.1.0. *See* Petition at 3-4.

According to the licensee, both the ANSI B.31.1.0 and AISC Codes were utilized in the design of supports at FitzPatrick.[12] Integrally welded or bolted attachments to piping and standard catalog items such as hangers and spring cans were designed in accordance with ANSI B31.1.0, whereas the AISC Code was employed for supplementary steel support members. Use of the AISC Code for the design of these members is consistent with section 120.2.4 of ANSI B31.1.0, which states that "supplementary steel shall be designed in accordance with the standards prescribed by the American Institute of Steel Construction (AISC) or the equivalent." In sum, the petitioner's allegation appears to stem from a misinterpretation regarding proper application of the design codes.[13]

4. Failure to Take Action on Problems Identified by Target Technology

In its June 30, 1983 letter, Target expressed its concern to the licensee that activities Target viewed as necessary to comply with IE Bulletins 79-02, 79-07 and 79-14 had not been completed. Target noted that it had informed PASNY in letters dated September 3, 1980 and December 20, 1982, of the necessity for additional action.[14] The petitioner uses this information to assert that the licensee has been on "written notice . . . since at least September of 1980" of the need for additional action. Accordingly, the petitioner views the licensee's failure to take action on the "defect" identified by Target until July 1983 as a violation of 10 C.F.R. Part 21 for which enforcement action is appropriate. *See* Petition at 4-5, 7.

Part 21 of the Commission's regulations, which implements section 206 of the Energy Reorganization Act, requires:

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[12] *See* letter from J.A. Gray (PASNY) to H.R. Denton (NRC) (November 18, 1979).

[13] The petitioner questions whether the licensee made a material false statement "in certifying to NRC that all calculated stresses were checked against the allowables specified in ANSI Code B31.1." when in fact an AISC Code was also utilized. *See* Petition at 7. The statement at issue in the FitzPatrick FSAR is not false or misleading. The ANSI standard which the licensee stated in the FSAR would be used for piping elements (*see* Final Safety Analysis Report, James A. FitzPatrick Nuclear Power Plant, Vol. 8 at C.12.5-16 (July 1982)), sanctions use of the AISC standard for supplementary steel support members. Thus, the licensee complied with ANSI B31.1.0 in designing the FitzPatrick pipe supports.

[14] In Target's view, the additional action to be taken was a normal loads evaluation of the piping supports.

> *[a]ny individual director or responsible officer* of a firm constructing, owning, operating or supplying the components of any facility or activity which is licensed or otherwise regulated pursuant to the Atomic Energy Act . . . *who obtains information reasonably indicating:* (a) that the facility, activity or basic component . . . fails to comply with the Atomic Energy Act . . . or any applicable rule, regulation, order or license of the Commission relating to substantial safety hazards or (b) that the facility, activity, or basic component . . . contains defects, which could create a substantial safety hazard, *to immediately notify the Commission of such failure to comply or such defect, unless [the responsible officer or individual director] has actual knowledge* that the Commission has been adequately informed of such defect or failure to comply.

10 C.F.R. §§ 21.1, 21.21(b) (emphasis added). The obligation to make a Part 21 report to the NRC does not arise until it is determined that a defect within the meaning of Part 21 indeed exists. Accordingly, each entity, including a facility licensee, subject to Part 21 is required to adopt appropriate procedures to evaluate deviations to determine whether a defect within the meaning of Part 21 exists. Licensees and other affected entities are also required to adopt appropriate procedures to assure that, if a defect is found to exist, a director or responsible officer is informed of that defect. *See* 10 C.F.R. § 21.21(a).

Target's letter of September 3, 1980 cannot reasonably be construed as containing information that would indicate a deviation which would require PASNY to conduct an evaluation to determine whether the deviation was indeed a defect within the meaning of Part 21. Target stated that "the purpose of this letter is to follow-up our recent discussion regarding the status of the pipe support design calculations performed by Target . . . with respect to long term FSAR and Code compliance requirements." To trigger a Part 21 evaluation, a deviation must be cast in terms of a safety concern. Target's September 3, 1980 letter falls short in this regard. Target did not state or otherwise indicate that a reportable defect might exist, nor call a potential safety concern to PASNY's attention. The letter is more appropriately viewed as correspondence between a contractor and licensee suggesting that follow-up work be considered. Since normal loads calculations were not explicitly required by the NRC, the staff would not have expected that the licensee undertake a Part 21 evaluation in response to Target's 1980 letter. It was in Target's second letter, dated December 20, 1982 that Target identified its concern as being a potential deficiency reportable under Part 21.

Upon receipt of Target's December 20, 1982 letter, the licensee took action to determine whether a reportable defect existed. PASNY solicited from Target, and received on January 3, 1983, a sample list of affected pipe supports. The sample list, along with Target's December 20th letter, was referred to Stone and Webster for evaluation to determine if Target's concerns were valid. While awaiting a response from Stone and

Webster, PASNY commenced a formal Part 21 evaluation. Based upon its review, PASNY determined that a Part 21 reportable defect was not likely, because even if Target's concerns were correct about not performing the calculations, the maximum overstress above any support's design would be 33%. Given the conservatisms used in designing the supports, exceeding the allowables by 33% would not compromise the integrity of any support. This initial determination has been subsequently confirmed by the NRC, PASNY, and United Engineers. Accordingly, no Part 21 reporting violation occurred with respect to Target's December 20, 1982 letter.

5. Generic Implications of Concerns Regarding Normal Operating Loads

Given the concerns Target raises regarding calculation of normal operating loads at FitzPatrick, the petitioner is concerned that pipe supports at the other four plants shut down with FitzPatrick in 1979 may also be overstressed under normal operating loads. As stated by the petitioner: "[S]ince pipe supports which may be overstressed for normal operating loads have been found at . . . FitzPatrick . . . and since Stone and Webster was the architect-engineer and constructor of all five plants, the Beaver Valley Unit 1, Surry Units 1 and 2 and Maine Yankee plants may have similar conditions of safety significance." *See* Petition at 6.

As noted earlier, the error discovered in the seismic computer code used by Stone and Webster, which led to the 1979 five plant shutdowns and subsequently to the issuance of IE Bulletins 79-07 and 79-14, had no bearing on the validity of the original normal loads calculations or the ability of the supports to withstand normal operating loads. Stone and Webster's error involved the method used to combine seismic load components and, as such, had no effect on the magnitude of the normal loads employed in the pipe support calculations. Modifications made to supports, as deemed necessary by the seismic reanalyses, provided an enhanced ability of the supports to withstand earthquake loads. Moreover, the pipe support damage at FitzPatrick was limited to a single support in the main steam system. This damage appeared to result from a site-specific problem with improper installation of that particular support. Hence, the results of the seismic and normal loads reanalysis at FitzPatrick do not indicate a substantial safety problem warranting NRC action at the other plants.

Based on this damage assessment, on the inspections performed by the licensee, NRC, and United Engineers of numerous supports at Fitz-

Patrick, and on the staff's audits of normal loads evaluations performed by the licensee and by Stone and Webster for all affected supports at FitzPatrick, there appears to be no basis on which to question the validity of the normal loads calculations performed for supports at FitzPatrick or any indication of a generic overstress condition affecting the supports at FitzPatrick or the other plants mentioned by the petitioner.

IV.

Based upon the foregoing discussion, the petitioner's request is denied. A copy of this decision will be filed with the Secretary for the Commission's review in accordance with 10 C.F.R. § 2.206(c) of the Commission's regulations. As provided in 10 C.F.R. § 2.206(c), this decision will constitute the final action of the Commission 25 days after the date of issuance unless the Commission on its own motion institutes review of this decision within that time.

Harold R. Denton, Director
Office of Nuclear Reactor
Regulation

Dated at Bethesda, Maryland,
this 8th day of May 1984.