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March 28, 1985

Secretary
Nuclear Regulatory Commission
Washington, D. C.

Dear Sir:

There are enclosed for filing the original and three copies of:

1. A letter, dated March 27, 1985, of Messrs. R. C. Arnold and E. G. Wallace requesting a separate hearing (not as a part of the Three Mile Island Nuclear Station Unit No. Restart Proceeding) to determine whether the adverse implications about the management integrity of Messrs. Arnold and Wallace drawn by the Staff of the Commission's Office of Nuclear Reactor Regulation and Office of Investigations are factually substantiated, and

2. An accompanying memorandum of Messrs. Arnold and Wallace.

Will you please acknowledge receipt of this filing on the enclosed duplicate copy of this letter.

Very truly yours,

Bishop, Liberman & Cook
BISHOP, LIBERMAN & COOK

cc: Commissioners
Executive Director for Operations
Director, Office of Investigations
Director, Office of Inspection and Enforcement

DS03

Robert C. Arnold
7 Fernwood Trail
Mountain Lakes, New Jersey 07046

March 27, 1985

Hon. Nunzio J. Palladino, Chairman
Hon. Thomas M. Roberts, Commissioner
Hon. James K. Asselstine, Commissioner
Hon. Frederick M. Bernthal, Commissioner
Hon. Lando W. Zech, Commissioner
U.S. Nuclear Regulatory Commission
Washington, D.C.

Dear Commissioners:

In its Memorandum and Order, dated February 25, 1985 (the "Order"), in Docket 50-289 the Commission concluded (at pages 55-56) that, in fairness to Mr. Husted, he should be provided an opportunity to request a hearing on whether the Appeal Board's condition barring him from supervisory responsibility insofar as the training of non-licensed personnel is concerned should be vacated. To that end, that Order provides that Husted has twenty days after the service of that Order to request such a hearing and that, if he does request such a hearing, the Commission will assign the matter to an Administrative Law Judge for hearing separate from the Three Mile Island Nuclear Station, Unit No. 1 ("TMI-1") restart proceeding.

Similarly, at page 35, the Order states that it will issue a notice of hearing instituting a separate hearing (outside the TMI-1 restart proceeding) on TMI-2 leak rate issues with respect to certain individuals (who do not include the undersigned) to determine the involvement, if any, in such TMI-2 leak rate issues of such individuals "who may now work, or in the future desire to work, at a nuclear facility." (Presumably, the time within which such an individual will be expected to respond to such a notice will be established in the order issuing that notice.) As the majority of the Commissioners noted in their Separate Statement (at page 6) explaining why those hearings should be held outside the TMI-1 restart proceeding, the purpose of such hearings is so that the individuals who might have been involved could be identified as culpable or exonerated, as appropriate - a purpose which has nothing to do with the TMI-1 restart proceeding.

Although the Order does not specifically address the issue, it is the expectation of the undersigned (R. C. Arnold and E. G. Wallace) that the Commission would similarly afford to

the undersigned an opportunity to request a separate hearing to determine whether the adverse implications about the undersigned's management integrity are factually substantiated. Those adverse implications relate primarily to conclusions drawn by the Staff of the Commission's Office of Nuclear Reactor Regulation ("Staff") and Office of Investigation ("OI") regarding the December 5, 1979 response ("Response") of Metropolitan Edison Company ("Met-Ed") to the October 25, 1979 Notice of Violation ("NOV") issued by the Commission's Office of Inspection and Enforcement ("I&E"). Wallace was the individual primarily charged with the accumulation of the information for, and the preparation of, that Response to the NOV, and Arnold reviewed, directed the revision of, and signed that Response as a Senior Vice President of Met-Ed. On January 23, 1980, I&E issued an evaluation and reply (the "Reply") to that Response which significantly refocused the charges in the NOV. Based thereon, Met-Ed paid in February 1980, the $155,000 civil penalty imposed by the NOV.

There can, we submit, be little doubt that the effect of the statements made concerning the undersigned in connection with this subject in the series of documents relating thereto issued by OI in its Report No. 1-83-012 (the "OI Report") sometimes referred to as the "Keaten Report Investigation", the Staff's Reports in NUREG-1020 LD (the "B&W Lawsuit Document Review") and in NUREG-0680 - Supplement No. 5 ("Supplement No. 5"), and in the Order have damaged our good name, reputation, and honor and our opportunity to work and to obtain professional advancement. We, therefore, believe that we would be entitled to a hearing as of right. But, given the other examples in the Order cited above of the Commission's intent to provide an opportunity for hearings outside the TMI-1 restart hearing in the interest of fairness to the individuals affected, we prefer to present our request for hearing in terms of fairness.

It may be that some procedure, other than a formal adjudicatory hearing, would provide a means to resolve this

issue with a lesser burden on the Commission's resources. We would be willing to participate in any such other procedure so long as it provided an objective forum in which we would have an opportunity to establish that the statements which have thus injured us are not supported by the weight of the evidence. We also hope that whatever procedure or forum is made available for this purpose would permit the undersigned to address any other issues raised by the Commission or its agencies that the Commission judges to be a constraint on our utilization for activities regulated by the Commission.

We enclose a memorandum discussing the principal charges against us made in the OI Report and Supplement No. 5 and reflected in the Order. As demonstrated in that memorandum, we believe that those charges are not substantiated by the weight of the evidence.

It is possible that those charges are in large part the product of misunderstanding or misinterpretation on the part of OI and the Staff. The TMI-2 accident occurred six years ago, and the NOV, the Response and the Reply were written more than five years ago. By contrast, the OI investigation began more than four years after the accident and the OI Report and Supplement No. 5 were completed more than five years after the accident. To the best of our knowledge the NRC personnel involved in the OI investigation and preparation of Supplement No. 5 had not been involved in the 1979 investigation by the NRC's Office of Inspection and Enforcement. That passsage of time and prior lack of involvement could have led to the misunderstanding or misinterpretation which we discern.

We are, therefore, furnishing copies of this letter and its enclosure to the Director of OI and to the Staff Executive Director for Operations. We are also aware of the fact that this subject has been referred to I&E for considera-

tion of what enforcement action, if any, shall be taken by I&E. We are, therefore, also furnishing to the Director of I&E a copy of this letter and its enclosure. We are also providing copies to GPU Nuclear Corporation.

Respectfully,

R. C. Arnold

E. G. Wallace

MEMORANDUM

Accompanying Letter, dated March 27, 1985 of

R.C. Arnold and E.G. Wallace

March 27, 1985

FOREWORD

This Memorandum was prepared in support of our request, in the accompanying letter, that the Commission afford us a hearing (or some other objective forum) which would provide us with an opportunity to establish that the statements concerning us made in the Report No. 1-83-012 (the "OI Report") of the NRC's Office of Investigation, the Staff's Reports in NUREG-1020LD (the "B&W Lawsuit Document Review") and in NUREG-0680-Supplement No. 5 ("Supplement No. 5"), and in the Commission's Order, dated February 25, 1985 (the "Order") in Docket No. 50-289 are not supported by the weight of the evidence. To provide explanations of the major reasons for disagreeing with the statements made about us in the OI Report, Supplement No. 5 and the Order, we deal sequentially with the series of documents giving rise to the matters discussed in this Memorandum. The Table of Contents sets forth the organization of this Memorandum.

The undersigned wish to point out that, while we have fully participated in the preparation of the letter accompanying this memorandum and the memorandum itself, and take full responsibility for them, we have had the assistance of counsel in their preparation. We believe them to be accurate and complete, recognizing that language cannot be totally free of ambiguity, either as to how we express ourselves or how we interpret the words of others, and subject to the constraint that this memorandum cannot, as a practical matter, review all that has been said over the past six years about the issues discussed in the memorandum.

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Memorandum
Accompanying Letter, dated March 27, 1985 of
R. C. Arnold and E. G. Wallace

I. Introduction

On October 25, 1979, the Office of Investigations and Enforcement ("I&E") of the Nuclear Regulatory Commission ("NRC") issued a Notice of Violation ("NOV") citing Metropolitan Edison Company ("Met-Ed"), the NRC-licensed operator of Three Mile Island Unit No. 2 ("TMI-2"), with numerous items of apparent noncompliance. One of the alleged items of noncompliance (Item 4A of the NOV) was an alleged violation of Section A.2.B.1 of Met-Ed's Emergency Procedure 2202-1.5. The citation alleged that the Procedure required Met-Ed to close the block valve for the power operated relief valve ("PORV") when the PORV tailpipe temperature exceeded 130°F.

Consistent with the NRC's Regulations, the NOV required Met-Ed to file a written statement which included, for each item cited therein, an "admission or denial" of such violation. On December 5, 1979, Met-Ed filed a 95-page response ("Response") to that NOV, of which 8 pages (two of which were exhibits) were devoted to this subject. The undersigned, Edward G. Wallace, was the individual primarily charged with the accumulation of the information for, and the preparation of, the Response and the undersigned, Robert C. Arnold, reviewed, directed the revision of, and signed that Response as a Senior Vice President of Met-Ed.

Since we believed that, as we understood the crux of the alleged noncompliance (and we identified what our understanding was), the statement of alleged noncompliance was not correct, we did not believe that Met-Ed could properly admit that allegation. We also were concerned that the allegation in the NOV seemed to us to represent a view that plant operators should simply apply Procedures mechanically in response to a single symptom (even though that symptom might be identical for several quite different problems), as opposed to using the symptoms to ascertain what the problem was, and stated as much in the Response. We also said in the Response that this Procedure was not clearly written, that it appeared that the underlying cause for the claimed noncompliance was the statement in the Procedure that the "normal" PORV tailpipe temperature was 130°F, when in fact it was higher, that the Procedure should have been changed, and that operator training should be expanded and Procedures clarified.

On January 23, 1980, I&E sent a letter replying to the Response (the "I&E Reply"). In Arnold's* view, the I&E Reply recognized the basis for Met-Ed's denial of the item of apparent noncompliance and substantially refocused the citation contained in the NOV. Arnold did not disagree with the citation as thus refocused, and, in February 1980, Met-Ed paid the civil penalty of $155,000 imposed by the NOV.

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*Wallace did not participate in the evaluation of the Reply.

The NRC's Office of Investigation ("OI") initiated an investigation on August 5, 1983. On or about June 15, 1984 OI issued its Report No. 1-83-012 (the "OI Report"), dealing in part with the response to Item 4A of the NOV. Subsequently, the staff of the NRC's Office of Nuclear Reactor Regulation ("Staff") issued in July 1984 a document identified as NUREG-0680, Supplement No. 5 ("Supplement No. 5") also dealing in part with the Response. On February 25, 1985, the NRC issued an Order in Docket 50-289 ("Order") also dealing in part with the Response.

The OI Report, Supplement No. 5 and the Order contain comments concerning the undersigned and the Response which are injurious to the reputation of the undersigned and which the undersigned believe are not supported by the weight of the evidence. It is the purpose of this memorandum to set forth some of the major considerations that form the basis for this belief.

The facts relating to the NOV, the Response, and the Reply are relatively simple and those facts were essentially frozen in place almost six years ago. What has happened in the meantime, in our view, is that those facts have become the subject of misunderstandings and misinterpretations.

Indeed, we respectfully submit that what has taken place is there has been a series of overlays upon, and attendant obscuring of, the underlying facts by the succession of comments which

have tended to focus on the immediately preceding comments, rather than on the facts themselves. For example, the Commission's references to this subject in its Order (at pages 63-64 and 82-83) are largely in the context of the Commission's analysis of the Staff's change of position and whether that change in position warrants further hearing in the TMI-1 restart proceeding. The Commission apparently - and understandably - assumed, for the limited purpose for which it was addressing the issue, the potential validity of the OI and Staff criticisms and characterizations of the actions of the undersigned without ever examining whether those criticisms and characterizations were valid in fact, i.e., the Commission concluded, as we understand its action, that, even if those criticism and characterizations were valid, they do not warrant further hearings in the TMI-1 restart proceeding.

II. The NOV, the Response and the Reply

A. The Violation Charged in the NOV

Three aspects of these 1979 and early 1980 events have apparently been lost sight of in all this discussion: (1) The specific citation in the October 25, 1979 NOV to which the Met-Ed Response of December 5, 1979 was directed; (2) the fact that, at the time that the Response was prepared and submitted on December 5, 1979, the NRC's staff had access to essentially the same factual information that Met-Ed had, if not more, and (3) the way in which, in its January 23, 1980 Reply, I&E refocused the basis for the October 25, 1979 citation.

By December 5, 1979, the NRC Staff had been conducting interviews and assembling documentary analyses relating to the TMI-2 accident for approximately eight months. The Commission's office of Inspection and Enforcement ("I&E") had previously issued, as NUREG 0600, an approximately 300-page Investigative Report No. 50-320/79-10, dated August 1979 (the "I&E Report"). According to Pages E2-2 through E2-10 of that Report, I&E had conducted 203 interviews in the course of its investigation, including four interviews with Mr. William Zewe, TMI-2 Shift Supervisor at the time of the accident.* The Kemeny Commission interviews, depositions, document reviews and staff studies had been completed and the Kemeny Commission's Report and series of Kemeny Commission staff reports had been issued. The NRC's Special Inquiry, headed by Mitchell Rogovin, was well under way and was producing factual information which we assume was available to the Commission and its staff. There had been public hearings before two Congressional

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*We have referred specifically to Mr. Zewe since, as discussed below, a significant part of the criticism of the undersigned stems from what the OI Report and Supplement No. 5 alleges are variances between the Response and contrary information contained in two GPU interviews of Mr. Zewe which are referred to in the OI Report and Supplement No. 5 as "internal . . . interviews under the control and/or cognizance of" the undersigned. For the reasons stated below, we believe that the information in those interviews was not materially contrary to the Response. Moreover, the quoted phrase suggests that OI and the Staff may not have been aware of the fact that copies of those interviews had been furnished to the NRC on May 7, 1979.

The I&E's own interviews included interviews of four other TMI-2 shift supervisors and many other TMI-2 plant personnel.

Committees. Other analyses were also in process. Thus we had relatively little new factual information to provide to I&E in the Response to the NOV. Instead, the question presented was what interpretation should be applied to that commonly-shared factual information.

This was the view expressed in our letter dated December 5, 1979, to I&E forwarding the Response wherein we stated, in part:

> "We have carefully considered the information and conclusions set forth in your letter and in the Notices enclosed with it. This consideration has been aided by many studies, analyses and reviews which we and others have undertaken since the March 28, 1979 accident. We have sought to forthrightly address each of the charges while recognizing that many of the issues turn upon interpretations of complex procedures. Our detailed responses are set forth in two enclosures to this letter: Metropolitan Edison Company's Statement in Reply to Notice of Violation, and Metropolitan Edison Company's Answer to Notice of Proposed Imposition of Civil Penalties. These responses are based upon our present understanding of the accident. Certainly, our mutual understanding of the accident and its underlying causes can be expected to improve as studies continue."

For our part, we were puzzled by the specific citation of the NOV. Even today as we have again looked very hard at the NOV, it appears to us that the NOV's specific citation on this issue ignored some general and important observations made in the I&E Report. For example, in the Foreward to the I&E Report there was reference (at page 2) to the "mindset"* (not only by the TMI-2

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*The word "mindset" was also referred to with substantial emphasis in the Kemeny Commission Report (See, e.g., page 9).

operators but by operators at other plants as well) that overfilling the reactor coolant system (making the system solid) was to be avoided at all costs, and to the fact that blind adherence to the rule of avoiding a solid system led the TMI-2 operators to ignore other procedural instructions as well as other indications that the core was not being properly cooled. Our reaction to the particular citation in the NOV was that, by concentrating on a single aspect of a single Procedure which was not clearly written, the specific citation in the NOV was not only incorrect but was fostering a similar "mindset" and ignoring one of the major learnings from the accident - namely, that the proper training of nuclear plant operators requires that they have an in-depth understanding of the functioning of the plant and that they must not simply attempt to apply procedures mechanically.

It was also our perception that the specific citation in the NOV departed significantly from the August 1979 I&E Report. Specifically, in the text of the I&E Report (at pages I-1-5 and 6), there was a summary description of Emergency Procedure 2202-1.5 which described that Procedure as requiring that the PORV block valve be closed when various symptoms exist. One of the several symptoms so listed was that the PORV tailpipe temperature exceeded "the normal 130^{o}F". This was, however, immediately followed by a Note in the text of the I&E Report which apparently recognized the fact that this 130^{o}F reference temperature could have been altered by a temporary procedure change without NRC involvement.

The I&E Report text discussion also included reference to other items, including the failure to place the discharge temperatures on the tailpipes from the code safety (sometimes referred to as "code relief") valves (not the PORV) on the analog trend recorder.

In Appendix 1-B, "Operational Aspects Potential Items of Noncompliance", of the I&E report, under paragraph B (at pages 1B-1 and 1B-2), there was the following statement:

> "Unit #2 Emergency Procedure 2202-1.5, 'Pressurizer System Failure,' Revision 3, requires the closure of the Electromatic Relief Isolation Valve (RC-V2) for a leaking or failed open Electromatic Relief Valve (RC-R2) [PORV] and the placing of Code Relief Valve (RC-R1A or RC-R1B) Discharge Line temperatures on the Analog Trend Recorder for a leaking Code Relief Valve.
>
> "Contrary to the above, RC-V2 was not closed and the Code Relief Valve Discharge temperatures were not placed on the Analog Trend Recorders, with leakage from RC-R2 and/or either or both RC-R1A and RC-R2B, on the morning of March 28, 1979, prior to 0400 hours (Section 1.2.4, Details I).
>
> "Contrary to the above, RC-V2 was not closed on March 28, 1979, during the accident from 0400 hours until 0619 hours; allowing a significant loss of RCS inventory (Section 2.13, Details I)."

Note that this statement did not include any reference to a requirement for closure of the PORV block valve simply because the PORV tailpipe temperature was in excess of 130°F. Moreover, this statement was exclusively focused on the failure to close the

PORV block valve and to place the code safety valve discharge temperatures on the analog trend recorder on the day of the accident, as distinguished from doing so during some prior period.

In the October 25, 1979 NOV, the alleged violation was substantially different from that discussed as a potential item of noncompliance (quoted above) in Appendix I-B to the I&E Report. Specifically, the NOV stated in part:

> "Emergency Procedure 2202-1.5,
>
> 'Pressurizer System Failure,' Revision 3, requires in Section A.2.B.1 that electromatic relief isolation valve RC-R2 be closed if, among other things, the valve discharge line temperature exceeds the normal 130oF.
>
> "Contrary to the above, the electromatic relief valve discharge line temperature had been in the range of 180° - 200°F since October of 1978 and isolation valve RC-R2 was not closed as of 0400 hours on March 28, 1979. Additionally, on March 28, 1979, the discharge line temperature of 283°F was noted at 0521 hours, but the isolation valve RC-R2 was not closed until 0619 hours, allowing a significant loss of RC inventory . . . Each day the plant operated in noncompliance with this procedure constitutes a separate violation, a civil penalty of $5,000 is imposed for each. (Cumulative Civil Penalty $630,000)." (Emphasis added.)

There were three significant differences:

1. The pertinent portion of Appendix 1-B to the I&E Report quoted above did not specify a particular Section of Emergency Procedure 2202-1.5, but, without making the distinction,

it dealt with "a leaking or failed open" PORV, and the "placing of [code safety valves] on the Analog Trend Recorder for a leaking [code safety] valve."

Emergency Procedure 2202-1.5 has seven sections. Section A deals with a leaking PORV, Section B with a failed open or failed closed PORV, and Section C with a leaking code safety valve. (The other four sections are not pertinent here.)

The specific citation in the NOV was solely in terms of Section A, namely, that for a leaking PORV.

2. The pertinent portion of Appendix 1-B to the I&E Report quoted above was not expressed in terms of closing the PORV block valve if the PORV tailpipe temperature exceeded 130°F. Instead, it was expressed in terms of a requirement to close the PORV block valve for a "leaking or failed open PORV". Moreover, in the related text of the I&E Report (at pages 1-1-5 and 1-1-6), it was stated that the Procedure required that the PORV block valve be closed if the following symptoms existed, namely:

> a. PORV tailpipe temperatures exceeding the normal 130°F (but, with the apparent recognition that that reference temperature could have been changed by a temporary procedure change);

b. Reactor coolant drain tank ("RCDT") pressure above normal and temperature above normal;

c. Operation of the RCDT transfer pump with flow through the RCDT cooler;

d. Reactor coolant system makeup flow above normal.

The specific citation in the NOV was solely in terms of a failure to close the PORV block valve when the PORV tailpipe temperature was in excess of 130°F.

3. The NOV charge was that the violation of Section A of the Procedure had been continuing since October 1978, whereas the statement in Appendix 1-B of the I&E Report had solely been in terms of a violation on the day of the accident. The I&E Report did not provide any significant discussion or documentation on the preaccident tailpipe temperatures.

Since we believed that there had been a well-nigh universal understanding that the PORV problem on the day of the accident had been a failed-open PORV (i.e. Section B of the Procedure), we had difficulty in understanding why the citation in

the NOV was solely directed to a leaking PORV (i.e. Section A of the Procedure), particularly with regard to the morning of the accident. Also, a review of the plant records back to October 1978 made it clear that prior to the end of January 1979, none of the PORV or Code Safety valves had been leaking to any meaningful extent.

B. The Response

We believed that we were required to respond to the NOV as written.* We thought that the NOV was mistaken in its interpretation of what the Procedure required and we said so in the Response explaining that, as we understood the NOV:

> "The crux of the claimed noncompliance is the assumption that the occurrence of a 'symptom' automatically requires the implementation of the associated immediate and follow-up actions."

As we stated in the Response, we believed that that assumption was not supported by the TMI-2 procedures or Technical Specifications.

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*Section 2.201 of the Commission's Regulations provide that a written notice of violation "will concisely state the alleged violation" and permits that notice to require the licensee to admit or deny the violation charged in the notice.

In accordance with that provision, the NOV required Met-Ed to submit a written statement which included for each item of noncompliance "(1) admission or denial of the alleged items of noncompliance".

As we also stated in the Response, it was our view that a symptom is not a determination that a particular problem exists, but is, rather, a signal that conditions should be examined as to whether that particular problem exists. We noted, in that connection, that the symptoms for a leaking PORV [Section A of the Procedure] are essentially identical to the symptoms for leaking code safety valves [Section C of the Procedure], and, therefore, the existence of a symptom for a leaking PORV does not mean that there is a leaking PORV. We also pointed out, for the purpose of illustrating our view of how procedures were to be utilized, that, if there is no leaking PORV, the procedure for a leaking PORV is not relevant and it is not appropriate to apply the immediate and follow-up actions for a leaking PORV.

The Response then stated:

> "As described in Section A of Procedure 2202-1.5, the immediate action for a leaking PORV is the closure of the [PORV block valve]. The claimed noncompliance is that this valve was not closed during the October-March period despite the existence of one of the symptoms of a leaking PORV, specifically
>
> > 'Relief valve discharge line temperature exceeding the normal 130°F. Alarms on computer at 200°F.'
>
> "There is no dispute that relief valve discharge line temperature exceeded 130°F during the period in question. The temperature range during this period was generally 170° to 190°F. However, these temperatures do not appear to have been the result of a leaking PORV. During the October-January period, the reactor coolant drain tank leak rate (which

would have reflected leaks past the PORV) was essentially zero. After the outage which ended on January 31, the reactor coolant drain tank leak rate increased.

"However, this was accompanied by a sharp increase in the discharge line temperatures for the code relief valves. In the October-January period, these temperatures had been in the 100˚-115˚F range. After the outage, the temperatures sharply increased to the 160˚-180˚ range. These matters were discussed by the plant staff. Based on temperature readings, a determination was made that code relief valve RV1A was leaking and Work Request No. C-1137 (February 9, 1979) was prepared for the repair of this valve.

"Additional evidence that the 170°-190°F temperatures on the PORV dicharge line did not result from a leaking PORV can be found by comparing these temperatures with plant conditions. During the October-March period, this temperature range occurred whether Unit [2] was at power or in hot shutdown. For example, on October 1, 1978, while the primary system was at 250°F and 265 psi, the PORV discharge line temperature was 171.1°F. On October 29, 1978, with primary system temperature of 566°F and pressure at 2155 psi, the discharge line temperature was 176.4°F. Only when the Unit was in cold shutdown did the discharge line temperature fall below the 170°-190°F range. For example, on January 18, 1979, with primary system temperature at 130°F and pressure at 0 psi, discharge line temperature was recorded at 80°F. These values make it clear that discharge line temperatures did not, of themselves, establish that the PORV was leaking. More likely, the temperatures resulted from the heating of the line by conductivity from the pressurizer itself. Because the temperature sensors on the code relief value discharge lines are located much further from the pressurizer than those for the PORV discharge lines, the normal temperatures for the former were not affected to the same degree by conductive heating from the pressurizer."

We then proposed the following corrective action:

> "Corrective Action:
>
> "Based upon the above discussion, it appears that the underlying cause for the claimed non-compliance was the statement in Section A.1.1. that the 'normal' temperature of the relief valve discharge line was 130°F. The normal temperature was actually in the 170°-190°F range. Once the plant staff determined that this discharge line temperature was not normally below 130°F, the procedure should have been changed. Metropolitan Edison's training program will therefore include steps to assure that these types of changes are initiated when appropriate. In addition, Metropolitan Edison procedures will be clarified to make explicit the meaning and role of 'symptoms' in these procedures. And, Metropolitan Edison will address and recognize the deficiencies identified in the procedure by the Staff of the President's Commission on the Accident at Three Mile Island . . ." (emphasis supplied)

C. The I&E Reply

I&E replied, on January 23, 1980, to the December 5, 1979 Response. In that Reply, without changing the specific violation charged, I&E provided an expanded explanation which, in Arnold's* view, changed the focus of its charge in the NOV. In that Reply, I&E's changed focus was on the broader charges that (1) the appropriate diagnostic steps to determine the significance if any, of the elevated PORV and code safety valve tailpipe temperatures should have been, and were not, taken, (2) the appropriate

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*As previously noted, Wallace was not involved in the evaluation of the Reply.

revisions had not been made in the Procedure to make it reflect the existing plant conditions, (3) the other symptoms referred to in the Procedure also existed, and (4) because the Procedure was not revised, it was not implemented.

It may be noted that the I&E Reply appeared to agree that the reference temperature for the PORV tailpipe could, and should, have been changed in the procedure as we had stated in the Response since the Reply stated in part:

> "However, the licensee should address in a supplemental response those steps being taken to assure that changed plant operating conditions will be factored promptly into emergency and operating procedures to assure that such procedures remain appropriate for plant use."

Met-Ed not only did not dispute these refocused charges as stated in the January 23, 1980 letter, but we had presented in part in the Response the analysis which was the basis for those refocused charges. Arnold, therefore, did not disagree with the charges as thus refocused and Met-Ed paid the civil penalty in February 1980.

D. The Differing Perspectives Reflected in (1) I&E's NOV and Reply and (2) Met-Ed's Response

At this point, we believe that a review of these differing perspectives may clarify matters.

The way in which this matter appeared to us to have been presented by the NOV was based on the assumption that, if the TMI-2

operators had simply followed the Emergency Procedure and closed the PORV block valve when the PORV tailpipe temperature exceeded 130°F, there would not have been an accident. We, on the other hand believed that that assumption was unfounded, for the following reasons:

(a) Any leakage from the PORV and from the two code safety valves at the top of the pressurizer would have collected in a single pipe leading to the reactor coolant drain tank ("RCDT").

(b) The PORV tailpipe temperature exceeded 130°F during the period of October 1978 through March 28, 1979 and was generally within the range of 170° - 190°F when TMI-2 was at full power or in hot standby.

(c) There does not appear to be any dispute that, during the period from October 1978 until the January 1979 shut-down, leakage into the RCDT was essentially zero.* Consequently, if the PORV block valve had been closed in October 1978, it would simply have

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*The RCDT received normal discharge from the reactor coolant pump seals, leakage through valve stem packing for certain in-containment valves, and leakage through the valve seats of the PORV and code safety valves. "Essentially zero" referred to any valve associated leakage or pump seal flow in excess of the pump seal design flow rate.

confirmed that there was essentially no leakage from the PORV.

(d) Presumably, after adequate verification that this was in fact the situation, the reference "normal" temperature for the PORV tailpipe in Section A of the Emergency Procedure would have been increased to somewhere in the 170˚ - 190˚F range by a documented change in the Procedure to reflect that fact [we stated in the Response that this should have been done] and the block valve reopened.

(e) In the I&E Reply, the indisputable and never disputed by us statement was made:

> "Shutting the [PORV block] valve early in the accident could have prevented the accident entirely, reducing it to an operational transient."

But immediately thereafter this statement was made in the Reply:

> "There is a clear indication that recognition of an open PORV was delayed in part by the past history of the discharge line temperature <u>in that the Emergency Procedure had not been implemented</u>." (emphasis supplied)

We believe that that statement overlooks the fact that (as stated in paragraph (d)), if the Emergency Procedure had been implemented by closing the PORV block valve at some time

beginning in October 1978 when the PORV tailpipe temperature exceeded 130˚F (as the NOV stated was required by the Procedure), the consequence would have been, after appropriate verification to establish that the PORV was not leaking, to change the reference temperature in the Procedure to the actual normal condition in the 170˚ - 190˚F range.

(f) We suggest that this view is essentially conceded by the immediately following statement in the I&E Reply that:

> "Much of the response of the licensee addressed those many valid technical reasons which should have prompted a review and revision to the applicable emergency procedure to make it appropriate to the existing plant conditions."

(g) After the Plant start-up on January 31, 1979, following the January outage, leakage into the RDCT increased. The code safety valve tailpipe temperatures increased, while the PORV tailpipe temperature remained generally within the 170˚ - 190˚ range. Consequently, if the Procedure had been changed as suggested above, the PORV tailpipe temperature in this

range would not have been a symptom making it appropriate to consider the closing of the PORV block valve.

(h) The problem on the day of the accident was that there was a stuck open PORV. With the benefit of hindsight, we now know that there were indications that should have caused the TMI-2 operators to recognize that fact. But, if the TMI-2 operators had gone through the steps of closing the PORV block valve when the PORV tailpipe temperature first exceeded 130°F and then corrected the Procedure as described above, we believe that the PORV tailpipe temperatures on the day of the accident would not have caused them to close the PORV block valve following the PORV failure.

We did not suggest that the Procedure in place in 1979 was clearly written. Indeed, in the Response, we said it was not.

Nor did we say in the Response that the TMI-2 operators acted correctly in failing, beginning at least in October 1978, to act on the "symptom" provided by the elevated PORV tailpipe temperature to ascertain the cause of that temperature and, if it were ascertained that the PORV was not leaking and that the normal

tailpipe temperature was 170° to 190°F, to change the Procedure to reflect the actual normal plant conditions after such documentation. We stated the contrary in the Response.

Nor did we say in the Response that the Met-Ed procedures in place at the time of the accident were adequate to make explicit the meaning and role of "symptoms" in those procedures. Rather, the Response said that the procedures were deficient in this regard.

In summary, we believed that it was overly simplistic to assume that there was a one-to-one correlation between (i) the failure to close the PORV block valve during the period between October 1978 and March 27, 1979, and (ii) the occurrence of the accident on March 28, 1979. Yet, it appeared to us that the citation in the NOV was predicated on that assumption.

We did believe, in preparing the Response to the NOV, that it would be helpful to the Commission to have such objective factual information as we had at that time as to whether the PORV had been leaking, and we provided that information. Contrary to the implication in the OI Report and assertion in Supplement 5, we did <u>not</u> represent in the Response that the Plant Staff <u>had made a decision not to close the PORV block valve because the Plant</u>

Staff had previously determined that the PORV was not leaking.*

We do not find in the I&E Reply a statement suggesting that I&E believed that we had made such a representation. The closest that the I&E Reply approaches that subject is in the statement that:

> "The licensee asserts that the PORV was not leaking during the October-January period, and that the high temperature was caused by a leaking code relief valve (RV1A). However, even if this determination was correct, the licensee failed to follow the Emergency Procedure in that the high temperatures were not placed on the Analog Trend Recorder."

This statement is not a correct paraphrase of the relevant statement we actually made in the Response which was:

> "There is no dispute that relief valve discharge line temperatures exceeded 130°F during the period in question. The temperature range during this period was generally 170° to 190°F. However, these temperatures do not appear to have been the result of a leaking PORV. During the October-January period, the reactor coolant drain tank leak rate (which would have reflected leaks past the PORV) was essentially zero."

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*It should be borne in mind that the citation of the NOV was not a charge that the Procedure required the PORV block valve to be closed if the PORV was leaking and that Met-Ed had failed to close the PORV block valve in the presence of a leaking PORV. If the NOV citation had been stated in those terms, then it would have been relevant, in response to such a citation, to state whether the PORV had been leaking and the basis for whatever conclusion was reached on that score. But this was not the violation alleged in the NOV.

Although not expressly set forth in that quoted statement, the reactor coolant drain tank would - as elsewhere recognized in the I&E Reply - also have reflected leaks past the code safety valves, so that our quoted statement was to the effect that leaks from both the PORV and code safety valves in the October-January period were essentially zero.

We do find in the I&E Reply recognition of what the undersigned have described as the basis for the denial of the alleged violation inasmuch as the Reply states, in part:

> "The licensee denies this item of noncompliance. The basis for this denial is their assertion that the existence of one or more "symptoms" as listed in an emergency procedure does not call for implementation of the associated immediate and following actions."

While, once again, it is not a completely accurate paraphrase of the Response, we believe that it demonstrates that I&E's understanding of the Response was consistent with the explanations discussed herein and that I&E did not appear to read into the Response the implication and position attributed to the Response by the OI Report and Supplement No. 5.

III. The OI Report

A. Use of the OI Report and Supplement No. 5 in the Commission's Order

For the reasons set forth below, we believe that the conclusions and possible implications in the OI Report and in

Supplement No. 5 that are adverse to the undersigned are not supported by the weight of the evidence. Before discussing those reasons, we believe it appropriate to refer to what the Order says on this same subject.

The Order discusses the Response to the NOV in the context of its discussion of the Keaten Report (at pages 75-81) as well as its discussion of the Response itself (at pages 81-83). Although we, of course, are not privy to what materials the Commission relied upon in the preparation of the Order, it appears to us from an examination of those discussions in the Order that the Commission relied principally upon the discussions of that subject in the OI Report and Supplement No. 5.

At page 82, the Order states:

> "It appears that licensee made material false statements in its response, but the two individuals primarily responsible (Arnold and Wallace) are no longer associated with TMI-1."

At page 83, with respect to the Keaten Report, the Order states:

> "There is no factual dispute regarding the circumstances under which licensee provided the Keaten Report to the NRC, although contrary inferences can be drawn regarding why the licensee did not provide it earlier. Any failure here would not be a material false statement, as the NRC staff has concluded that it was already aware of the technical information in the Report, but rather a violation of the Board Notification procedures which require that all new information which is relevant and material be provided to the Boards in a timely fashion. Regardless, although licensee perhaps should out of discretion have

provided it to the Board, the Commission finds no serious concern here warranting a hearing." (emphasis supplied)

At page 84, the Order states:

"Nor do we believe a hearing is warranted on licensee's disciplinary actions (or lack thereof). There is no controversy regarding what acts were taken, but rather with regard to the propriety of those acts. We do not find licensee's practice of defending its employees prior to a formal determination of wrongdoing unreasonable. While Wallace and Arnold have been implicated in wrongdoing, they have not been found guilty, and we do not believe licensee's actions toward these individuals raise any significant integrity concerns which might have affected the Licensing Board's decision, and accordingly they do not meet the standards for reopening."

If we are correct in our belief that these aspects of the Order were made in primary reliance upon the pertinent portions of the OI Report and Supplement No. 5 and if we are successful in our effort to demonstrate that the adverse implications of the OI Report and Supplement No. 5 are not supported by the weight of the evidence, we hope that, in the interests of fairness, the Commission would expresssly withdraw these harsh characterizations of our actions. We now turn to an examination of the pertinent portions of the OI Report and Supplement No. 5.

B. Background of the OI Report

So far as we were aware, the NOV and the Response were a closed book on the issues now in dispute following the payment by Met-Ed of the civil penalty in response to the NOV as refocused by

the I&E Reply. That book was apparently reopened as a consequence of the extensive scrutiny by the Staff of the transcripts and documents that were produced during the GPU v. B&W lawsuit. As a result of that scrutiny, the Staff produced NUREG-1020 LD which was forwarded to OI. In addition, the Staff sent OI a Summary of Additional Information Relevant to NUREG 1020, Category 10, with a covering memorandum, dated November 7, 1983. That Summary included a series of possible questions for suggested investigation by OI.* One of the questions so presented in the Summary (at page 23) was:

> "Why was the PORV block valve not closed as required by Emergency Procedure 2202-1.5" (emphasis supplied)

Earlier in that Summary (at pages 20-21), there are references to the closing of the PORV block valve as being required by the Procedure, in a context that appears to base that requirement solely on the existence of the elevated PORV tailpipe temperature. That interpretation is reinforced by the discussion on page 10-7 of

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*In the covering memorandum, dated November 7, 1983, to OI forwarding those questions, the Staff stated:

> "Finally, we wish to emphasize that the mechanism by which NUREG-1020 was developed necessarily results in a presentation slanted in a direction unfavorable to the licensee. GPU's adversaries in the lawsuit had an interest in developing a record which shed a poor light on GPU's activities. We have taken that record at face value and identified what we consider the issues reasonably raised by the evidence."

NUREG-1020 LD which states that Met-Ed paid a civil penalty "based in part on not having followed procedures when the PORV tailpipe temperature exceeded 130°F."

Neither the Summary nor NUREG-1020 LD refers to I&E's January 23, 1980 Reply. Moreover, they do not discuss the difference in focus between the original NOV and that in the I&E Reply. Consequently, the apparent thrust was to renew the specific citation in the original NOV, without taking into account that change in focus.

The OI Report also does not discuss the specific citation in the NOV any further. Instead, it appears to assume the general validity of the Staff's characterization of the basis upon which Met-Ed paid a civil penalty and the Staff's description of the related issues raised by the lawsuit documents. It proceeds almost directly to discussions under two subheadings: "1. Delayed Recognition and 2. Matters Discussed by Plant Staff." We now turn to a discussion of each of those items.

C. "Delayed Recognition"

1. General Comments

Under the "Delayed Recognition" heading, the OI Report concluded (at page 46):

> "The testimony obtained during this investigation established that Met Ed's statement in their response to the NOV that '. . . there is no indication that this procedure or the history of PORV discharge line temperatures

delayed recognition that the PORV had stuck open during the course of the accident,' was contrary to information in their possession in the form of internal investigations and interviews under the supervisory control and/or cognizance of ARNOLD and WALLACE." (emphasis supplied)

We do not know what OI intended by the underscored phrase. It does, however, appear to imply:

(a) That these "internal investigations and interviews" contained factual information that was available to the undersigned at the time that the Response was submitted but that had not been made available to the NRC by that time. The two GPU "internal interviews" of Zewe that are identified as falling within this category had been furnished to the NRC on May 7, 1979. As discussed below, the two "internal investigations", even if read as OI reads them (which, as set forth below, we believe is not justified), did not contain factual information on this specific issue. They were merely expressing opinions drawn from facts that were available to the NRC.

If that is the intent of the OI statement, it is not correct on both counts.

(b) That OI is addressing solely factual "information", as distinguished from possible differing interpretations of that factual "information".

If that is the intent of the OI statement, it is also not correct.

(c) That such "information" was "contrary" to the relevant statement in the Response.

While this may be a matter of interpretation, we believe that the OI statement is not supported by the weight of the evidence. Indeed, we believe that the evidence (as opposed to opinions) cited as supporting of the conclusion that the preaccident PORV tailpipe temperatures delayed recognition of the PORV failure is not being correctly interpreted.

At page 8-16 of Supplement No. 5, the Staff quotes the conclusion from the OI Report and sets forth the Staff's summary of the evidence relied upon by OI. At page 8-19 of Supplement No. 5, the Staff concludes on this score that:

> ". . . the statements made by the licensee in its response to the NOV . . . were neither accurate nor complete and . . . were contrary

to other information in the possession of the licensee."

For the same reasons discussed above in connection with the OI Report, we believe that the conclusions and apparent implications in this statement in Supplement No. 5 are not supported by the weight of the evidence.

Moreover, the apparent implication in the OI statement referred to in paragraph (a) above, is reinforced by the statement at page 8-20 of Supplement No. 5 that:

> "The [GPU v. B&W] lawsuit documents and OI's investigation provided evidence that licensee's statement was also at variance with information in the possession of the licensee at the time the statement as made." (emphasis supplied)

If the intent of that statement is to imply that it was not until the Staff reviewed the lawsuit documents in 1983 and OI made its investigation in 1983-4 that the pertinent information available to Met-Ed became available to the NRC, we believe that it is not correct. On the contrary, as demonstrated below, the factual information referred to by Supplement No. 5 as it relates to the issue of "delayed recognition" had been made available to the NRC by the time that the Response was filed.

It appears to us that, in the light of the voluminous materials that had been assembled, OI and the Staff may not have had an opportunity to carefully examine the question of precisely what information the NRC had at the time the Response was filed, and that these statements and their implications in the OI Report

and Supplement No. 5 were based upon an unfortunate focus on the lawsuit documents to the point of excluding consideration of many other relevant documents.* It may also be that the OI procedure in conducting its investigation by apparently relying heavily upon interviews in 1983 and 1984 - more than four years after the accident - when memories were understandably less clear and some individuals were not available, caused it to pay less attention to an examination of the question of precisely what information the NRC had when the Response was filed.

2. Specific Comments on the OI Report

The statement in the Response which was questioned by OI under the heading "Delayed Recognition" was the following portion of a single paragraph in the 95 page Response to the NOV:

> "Although this procedure was understood by the plant staff, it is not clearly written and does not reflect actual plant conditions. It will be changed. However, although Metropolitan Edison is concerned about the issue, there

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*By the same token, it is not inappropriate, we believe, to note that the OI investigation was initiated on August 3, 1983 and its Report issued on June 15, 1984. We do not know when the Staff undertook the analysis of this issue which is reflected in Supplement No. 5 but it would appear that the Staff analysis involved the work of a number of individuals over a period of several months. By contrast, we received the NOV on October 25, 1979 and provided our Response on December 5, 1979 - a six week period during which we were heavily engaged with other matters, many with important implications to public safety, in the aftermath of the accident.

> is no indication that this procedure or the history of PORV discharge line temperatures delayed recognition that the PORV had stuck open during the course of the accident."

It appears to us that the focus of the OI challenge is on the single word "no" (See OI Report, pages 44-45). In the light of hindsight and with the benefit of our experience during the past six years in seemingly endless litigated administrative and judicial proceedings, we agree that the word "no" was ill-chosen (and unnecessary for the purpose of the Response) because it is more absolute than can apparently be demonstrated to be the case in human affairs. But, in a reasonable context, the statement was correct; i.e., in our view, a fair reading in context of the testimony of the TMI-2 operators before the President's Commission, in their GPU interviews and otherwise, was not that the pre-accident PORV tailpipe temperatures in the 170°-190°F range delayed their recognition of a stuck open PORV, but rather that, if the PORV were stuck open, they expected that the PORV tailpipe temperatures would be much higher than those they believed they had at the time. This is particularly the case with regard to the testimony of William Zewe, TMI-2 Shift Supervisor on duty at the time of the accident, who testified in 1979 that he understood the post-trip temperature in the PORV tailpipe to be about 232°F and that he expected a failed open PORV would result in a PORV tailpipe temperature in excess of 300°F.*

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*As stated below, the two TMI-2 control room operators on duty at the time of the accident also expected very high temperatures to be associated with a failed open PORV.

Nor is this a situation in which Met-Ed had factual information that was not contemporaneously available to the NRC when the Response was submitted. In this context, it is appropriate to refer again to the wealth of material that was available to the NRC Staff at that time. Within hours after the accident, Met-Ed, the NRC and others began to interview operators and assemble other data. In general, to the best of our knowledge, all the relevant factual matter assembled by Met-Ed was either provided to the NRC or was readily available to it. Moreover, the NRC had a mass of materials that it had independently assembled. For example, at pages E2-2 through E2-10 of the I&E Report, there is a list of 203 interviews conducted by I&E in the course of its investigation, which presumably were utilized by I&E in preparing the I&E Report.*

We had discussions with I&E shortly after the Response was filed about various aspects of the Response. Indeed, a part of the study that led to TDR-126, dated February 28, 1980, "Investigation of TMI-2 Pressurizer PORV Discharge Pipe Temperature", was prompted by a question raised by the I&E Director and the results

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*The identities of the individuals so interviewed by I&E are coded and are, therefore, not completely known to us. It appears from that list that each of five shift supervisors was interviewed by I&E at least twice and that two of them (including Mr. Zewe, who is identified at page I-1-29 as "Shift Supervisor E") were each interviewed four times. In addition, many control room operators and shift foremen were interviewed.

of that study reflected in TDR-126 were discussed with his staff shortly after it was completed in February 1980. To the best of our knowledge, the Met-Ed Response did not mislead I&E. Instead, as set forth at length above, I&E utilized the material in that Response as well as other materials to refocus the thrust of the NOV and, when it did so, Met-Ed paid the civil penalty.

The "internal investigations and interviews" available to Met-Ed prior to the submission of the Response referred to in this section (pages 35-46) of the OI Report are:

(1) A March 30, 1979 TMI staff interview of Mr. Zewe;

(2) An April 6, 1979 GPUSC Investigative Team interview of Mr. Zewe;

(3) GPU Technical Data Report ("TDR") 054, dated October 1979; and

(4) Drafts of the Keaten Task Force Report.

This section also refers to the testimony of Mr. Zewe at a public hearing before the Kemeny Commission on May 30, 1979, but that could hardly be regarded as an "internal investigation and interview".

We have previously commented about our uncertainty concerning the intended implication of the phrase in the OI Report (repeated in Supplement No. 5)

> "under the supervisory control and/or cognizance of ARNOLD and WALLACE"

Indeed, even if not so intended by OI, we are concerned that it is likely to be read as implying that the "internal investigations and interviews" contained factual information that was not available to I&E at the time the Response was submitted. Our concern is underscored by the OI Report statement (at pages 42-43) that the March 30, 1979 and April 6, 1979 interviews of Mr. Zewe were provided by Dr. Long to OI during the course of OI's 1984 interview of Dr. Long, followed by the statement:

> "Details of the ZEWE interviews were not discussed with either LONG or WALLACE because they were not reviewed by the reporting investigator until several days following the LONG/WALLACE interviews"

As previously pointed out, transcripts of both interviews were furnished to the NRC on May 7, 1979.

Moreover, although we believe that we do not have access to all the material that the NRC had at the time (and have not been able to review all of such NRC materials as we do have access to), we have reviewed transcripts of NRC staff interviews of Mr. Zewe on April 12, 1979 and April 23, 1979 which appear to us to contain in substance (although necessarily not in the same words) the same factual information on this subject as that contained in the

transcripts of the TMI staff and GPUSC Investigative Team interviews of Mr. Zewe on March 30, 1979 and April 6, 1979 and other testimony by Zewe which was publicly available. For example, similar factual information is contained in the transcript of a public meeting of the ACRS held on June 15, 1979 (at pages 315-326).

If Mr. Zewe's statements in his testimony before the President's Commission and his March 30, 1979 and April 6, 1979 GPU interviews (and in his statements in his NRC interviews and before the ACRS) today provide a proper basis for challenging the questioned statement in the Response concerning "delayed recognition" - and, for the reasons hereafter set forth, we respectfully urge that they do not -, they presumably provided a similar basis to do so when or shortly after the Response was submitted since they were then available to the NRC. Even by that time, memories had begun to fade, but they were relatively fresh in comparison with those at the time the OI was conducting its interviews in late 1983 and 1984.*

Nor did I&E rely on the "no indication" statement which took issue with the previously quoted statement in the NOV. Instead, in its January 23, 1980 reply, I&E expressly disagreed with the statement, although its reason for doing so was, we

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*As the OI Director commented in the Commission briefing session on the OI Report on May 23, 1984: "It was very difficult trying to obtain solid evidence or testimony as to an event that happened five years ago." (at p. 4).

believe, not compelling.* Significantly, however, as relating to the subject of this memorandum, we find it difficult to believe that I&E could have functioned on this matter in its Reply without taking into account Mr. Zewe's statements in his testimony before the President's Commission and his March 30, 1979 and April 6, 1979 interviews (as well as his similar statements in his NRC interviews on April 12, 1979 and April 23, 1979 and in his meetings with the ACRS).

We now turn to the analysis of the materials relied upon for the conclusion in the OI Report and in Supplement No. 5 that the "no indication" statement was contrary to information in our possession. We believe that that conclusion is not supported by the weight of the evidence. Moreover, in the context of a charge of material false statements, we submit that it is particularly

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*The I&E Reply in this regard (which is quoted at page 8-20 of Supplement No. 5) was:

> "There is clear indication that recognition of an open PORV was delayed in part by the past history of the discharge line temperature in that the Emergency Procedure had not been implemented." (emphasis supplied)

But, as previously discussed, if the Procedure had been implemented prior to the accident by closing the PORV block valve when the PORV tailpipe temperature was in excess of 130˚F (during the October-January period), such implementation would presumably have led to modification of the Procedure to substitute a "normal" temperature in the 170˚-190˚F range for 130˚F.

important to differentiate (1) statements of factual information from (2) opinions or conclusions drawn from those facts. We believe that the OI Report and Supplement No. 5 have failed to make that significant distinction.

There never was a question that there was a substantial delay on the part of the TMI-2 operators in recognizing that the PORV was stuck open. There also never was a question that the pre-accident PORV tailpipe temperatures exceeded 130°F and were typically in the 170° to 190°F range. The testimony of Mr. Zewe before the President's Commission and at the ACRS meeting was not that the pre-accident PORV tailpipe temperatures in the 170° - 190°F range delayed his recognition of a stuck-open PORV, but rather that he had expected that, if the PORV were stuck open, the PORV tailpipe temperatures would be much higher than those he believed existed (around 230°F) at the time. Similarly, in the Udall Committee Hearings, May 11, 1979 (pp 138-39), both Ed Frederick and Craig Faust, the TMI-2 control room operators on duty at the time of the accident, testified that they expected the PORV discharge line temperature to be in the vicinity of 600°F if the PORV were open.*

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*Athough we did not know it at the time the Response was submitted, this expectation on the part of the TMI-2 operators was consistent with the expectation on the part of at least some B&W engineers, since one of the documents in the B&W litigation records shows that some B&W engineers expected tailpipe temperatures of 600°F in the event of a stuck-open PORV. (GPU Ex. 513, p. 6)

The operators also testified that a number of other factors delayed their recognition of the stuck-open PORV, including the lack of an "open" indication on the morning of the accident from the PORV indicator light, which was installed to tell the operators when the PORV was open. (The light went off, as it was expected to do when the PORV closed, but the PORV stayed open.) However, the Response was prepared on the basis that, to the best of our knowledge, the operators had not testified that the history of the PORV tailpipe temperatures delayed their recognition of the stuck open PORV.

3. Additional Evidence In The OI Investigative Record Directly Supports The Statement In Question

In addition to the operator testimony, other evidence specifically brought to OI's attention during its investigation directly supports the conclusion that pre-accident tailpipe temperatures did not delay recognition of the stuck-open PORV during the accident. Thus, at Wallace's interview, the OI investigators questioned him concerning B&W Exhibit 4013, which consists of a memorandum from Zewe responding to a series of questions concerning the accident, apparently posed by John Herbein, then a Met-Ed vice-president, in May 1979. (Wallace Interview, OI Ex. 19, p. 110).

The first question asked of Zewe is: "Why didn't we recognize the electromatic valve was open?" One of Zewe's answers to this question was precisely the answer which Wallace understood from Zewe's other statements and testimony, i.e., that Zewe was expecting much higher tailpipe temperatures in the event of a stuck-open PORV. Thus, Zewe stated in his memorandum that he didn't recognize the stuck-open PORV because: "Temperature indication on relief value discharge lines was not high enough to indicate valve was open." (Emphasis added.) Zewe goes on to list three other reasons for the delay in recognition of the stuck-open PORV, including the erroneous indication from the PORV indicator light, but he does not even mention pre-accident tailpipe temperatures in that context. Only on the next page of the memorandum, in response to a different question, does he indicate that he was aware of leakage from one or more valves at the top of the pressurizer prior to the accident.

Zewe's account of what actually delayed his recognition of the stuck-open PORV was directly confirmed to the OI investigators in their interview of Zewe himself. Thus, Zewe repeatedly testified in his OI interview that he was misled by a number of factors, including the much higher tailpipe temperatures he was expecting, but he did not testify that the pre-accident temperatures about 180° was a significant factor. For example, the transcript of that interview contained the following:

"Q. Did it delay any recognition that it may be open? In other words, the previous high temperatures as you had known them before the accident, did it have any effect at all or was it a factor at all in the delayed recognition that the PORV had stuck open, not receded after it had lifted?

"A. I don't remember it being a significant factor that I dwelled on. It just followed that those temperatures in that range I didn't think were abnormally high, knowing that the PORV had lifted, because of the high pressure that we had.

"In the absence of the control light for the PORV indicating that it was open and the fact that the pressure was low, but stable -- I would expect the pressure to be rapidly decreasing and the tailpipe temperature being cosiderably higher than what I remember.

"It is just one factor of many.

"Q. Well, that is what I am getting at. Was it a factor at all? In other words, if it would nave been --

"A. When you say 'a factor,' I don't understand what you are saying. I had a lot of indications. I didn't dwell on any one particular one. It just seemed to be very possible that that temperature was true and accurate for a closed valve.

"It didn't have the significance at the time to have it stand out as: hey, that is a big,key factor. It just wasn't there." (Zewe interview OI Ex. 27, p. 7)

A little later in that interview, Zewe testified as follows:

> "Realizing that the relief valve sits on the top of the pressurizer, which is at 648 degrees, knowing that the valve had lifted due to an overpressure condition, obviously, it didn't indicate to me that 230 degrees was abnormal, knowing that it had lifted steam from the high-temperature conditions.
>
> "I don't really know, if it had been at 130 instead of 180 or whatever it was prior to, I really can't say that that would have been a significant factor to say: hey, something else is wrong because of that." (Zewe interview OI Ex. 27, p. 10) (emphasis added.)

With respect to OI's interview of Zewe, the OI Report (p. 45) states that Zewe was interviewed to determine if the "history of the PORV discharge line temperatures did delay his recognition that the PORV had stuck open and that:

> "When asked if the high PORV discharge line temperatures did delay his recognition, Zewe replied, 'I really don't remember.' (Zewe at page 16)."

At best, that summary is a less than an adequate summary* of the 24 page transcript of Zewe's interview which was almost completely devoted to this subject. As quoted above, Zewe had more to say than that -- and what he did say is supportive of the Response. Moreover, it is clear from the transcript that the OI investigators elicited the answer quoted in the OI Report only after they repeatedly asked Zewe if he could specifically recall

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*For example, at page 8-21, Supplement No. 5 characterizes Zewe's statement to OI as "that he could not say that temperature of 230°F would have seemed significant if the baseline for comparison had been 130°F instead of 180°F."

that high, pre-accident tailpipe temperatures were "no factor at all" in his thinking on the day of the accident. (Zewe Interview, OI Ex. 27, pp. 14-16).

4. Operator Testimony Available At The Time Was Consistent With the NOV Response

As previously noted, the OI Report and Supplement No. 5 relies in part on one piece of testimony before the President's Commission and the March 30, 1979 and April 6, 1979 GPU interviews of Zewe in support of its contention that the Response with respect to delayed recognition was "contrary to information in [our] possession in the form of internal investigations and interviews under [our] supervisory control and/or cognizance". (OI Report, p. 46 Supplement No. 5, p. 82.) The Response does not say, however, and was not intended to mean, that such temperatures played no role in the operator's thinking on March 28, 1979.* All the Response says on the subject is that "there is no indication that this procedure or the history of PORV discharge line temperatures delayed recognition that the PORV had stuck open during the course of the accident." (emphasis supplied) (OI Ex. 22, p. 34). The testimony and interviews cited by the OI Report and Supplement No. 5 are not at variance with that statement in the Response.

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*As stated in the Response (at pages 37-39), Zewe asked for the temperatures for the PORV and code relief valves at 0425 hours and 0521 hours, but, as he testified a number of times in 1979, erroneously believed that the reported temperatures were lower than they were.

For example, at one point in Zewe's testimony before the Kemeny Commission (not cited by the OI Report or Supplement No. 5), Zewe testified that "if the relief valve were really stuck open," he expected "to see over 300 degrees, at least, for the relief valve temperature" because of the "650 degrees steam that is relieving through the relief valve." At another point in that same testimony, quoted in part at page 39 of the OI Report, Zewe was asked why he did not close the block valve in response to the 230° temperature he thought he was seeing, regardless of whether the PORV was open, based on the procedure for a leaking PORV, which lists 130° as a symptom of a leaking valve. It was in this context that Zewe made the statement quoted by the OI Report (at page 39) to the effect that PORV tailpipe temperatures at TMI-2 were normally greater than 130°. Thus, in the context of a discussion as to how procedures are used, Zewe testified as follows:

> COMMISSIONER PIGFORD: But now getting back to the logic and the applicability of your emergency procedure, what I am getting [at] is the temperatures you finally learned about [were] higher than the maximum in your procedure. Now I think what you have told us is that the procedure is applicable if you know the valve is leaking? Yes? (Emphasis supplied)
>
> * * *
>
> "MR. ZEWE: Yes.
>
> "COMMISSIONER PIGFORD: It does raise a difficulty in my mind as it does appear that maybe this number one item on the procedure is

to give you a symptom that the valve is leaking so that you would then follow the procedure because it says, it alarms symptom number one, it alarms at 200 degrees Fahrenheit under the subject 'Leaking Relief Valve.'

"MR. ZEWE: I agree, but normally ever since we have started up Unit II, the relief valve temperatures have always been greater than 130 degrees. They have been in the neighborhood normally of 175 to 195 degrees normally because we knew that we had a certain amount of small leakage passed that valve or either one of the code valves which have their calm [sic] and downstream of the discharge point of the relief valve.

"So we could have had some of the high temperature caused from other valves leaking by causing the high temperature to be reflected in the other two valves.

"COMMISSIONER PIGFORD: So apparently you felt that this emergency procedure just wasn't applicable at that time? Is that correct? (emphasis supplied)

"MR. ZEWE: Yes sir." (President's Commission Hearings, May 30, 1979, pp. 129-30).

Read in context, it is clear that this testimony was given by Zewe in response to Commissioner Pigford's questions as to why the emergency procedure for a leaking PORV was not invoked. Zewe did not state to the President's Commission that pre-accident tailpipe temperatures delayed his recognition during the accident that the PORV was stuck open.

The March 30, 1979 and April 6, 1979 GPU interviews of Zewe cited by OI are also not at variance from the NOV response.

Zewe was not asked in those interviews, nor did he state, whether PORV tailpipe temperatures above 130°F delayed his recognition of a stuck-open PORV on the day of the accident. Zewe mentions in these interviews that the tailpipe temperatures had been running at 170°-190°F before the accident and that the temperature was reported to him at 230°F during the accident. However, the issue of whether a pre-accident PORV tailpipe temperature of 130° rather than 170°-190° would have made a significant difference in his thinking did not come up in those interviews and he makes no statement concerning that issue in either of those interviews. But, among other things, his May 1979 memorandum referred to above in response to questions apparently posed by Mr. Herbein and his statement in his OI interview demonstrate that factors other than the 170°-190°F pre-accident PORV tailpipe temperatures were responsible for his delayed recognition of the stuck-open PORV.

5. The "Internal Investigations" Cited By OI Did Not Contain Facts Inconsistent With The NOV Response

The only items cited in the OI Report as internal investigations" containing information in our possession contrary to the Response are GPU TDR 054 and the October 29, 1979 Keaten task force draft. In this context, the OI Report points to a statement in the TDR, which also appears in the task force draft, to the effect that operators "may have become 'desensitized' to abnormal conditions," listing several such "conditions," including "high discharge pipe temperatures before the event." (OI Report,

pp. 39-40). Accepting this statement as true, it does not imply that such temperatures delayed the operators' recognition of a stuck-open PORV, any more than the other listed "conditions" resulted in any specific operator action during the accident. The point of the statement seems to be that the existence of such conditions may have had a general effect of "desensitizing" operators to abnormal conditions -- a point not addressed in the Response.

OI's interview of the head of the task force, Robert Keaten*, supports the view that there is no contradiction between the task force's statement regarding "desensitization" and the NOV response. Thus, Keaten testified as follows:

> "Q With respect to what you folks found on the task force, the question of high discharge pipe temperatures was one of the abnormal conditions that you referred to in believing that operators had been desensitized; right?
>
> "That's what you just read out of B&W 350?
>
> "A. That's right.
>
> "But, again, keep this in context: the first sentence:

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*Mr. Keaten was not an author of the TDR, but he did approve it. TDR-054 was approved by him on October 29, 1979 -- the same date as that for the draft task force report -- and the fact that TDR-054 was prepared in direct support of the Keaten task force assignments probably accounts for the similarity of their language.

"'Operators may in fact become desensitized to abnormal conditions. . .'

"And so forth.

"We were not saying that in this case these factors did contribute to the cause of the accident, but that these are generic type of problems that should be avoided." (Keaten Interview, OI Ex. 4, pp. 217-18) (emphasis added).

Moreover, even if the statements cited from the TDR and draft of the task force report are viewed as the OI Report apparently reads them, none of the TDR or task force statements cited by OI contain any facts contrary to the NOV response. The members of the Keaten Task Force and the authors of TDR-054 were not present in the control room. Their statements cited by OI are conclusions drawn by them based on their own interpretations of certain facts available to them.* There is no reference in the TDR or task force draft to any specific operator testimony or interviews to support those statements. Even assuming that those statements have the meaning attributed to them by OI - an assumption that we find difficult to justify in the light of Keaten's explanation in his OI interview -, the authors of the drafts of the Keaten Task Force and of the TDR, and for that matter the NRC,

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*The same is also true of the deposition testimony of Broughton in the B&W litigation and OI interview of Van Witbeck cited (at pages 40-42) in the OI Report. In addition, that testimony and interview were in 1982 and 1984, respectively, and is therefore not information which was in our possession when the Response was submitted.

could and perhaps did draw different interpretations from the same facts than we drew. That proves only that reasonable people could differ on the interpretations -- not, as the OI Report contends, that the Response was "contrary to information" in our possession.

D. "Matters Discussed by Plant Staff"

1. General Comments

Under this heading, the OI Report concludes (at page 60) that:

> "Specifically, the response implies that Met Ed disagreed with the NOV because of the decision by 'Plant Staff' that the PORV was not leaking, making the procedure not applicable. This argument was contradictory to other important information that was in the possession of Met Ed at the time the response was signed." (emphasis supplied)

The implication referred to in that statement is one made by OI and is not expressed in, or fairly implied from, the Response. (As previously discussed, the I&E Reply does not, as we read it, state that I&E viewed our Response as containing such an implication.)

Earlier, at page 3, the OI Report contains a somewhat different but related statement, again based on an implication. Specifically, the OI Report there states:

> "This investigation determined that Emergency Procedure 2202-1.5, 'Pressurizer System Failure', was violated by Met Ed between January 31, 1979 and the time of the TMI-2 accident on March 28, 1979. It further determined that Met Ed's implication in their response that the

procedure was not followed because of a pre-accident determination by 'plant staff' that the PORV was not leaking, was contrary to the preponderance of evidence in the possession of the corporate officer [Mr. Arnold] having responsibility for the response and the corporate individual [Mr. Wallace] who drafted the response." (emphasis supplied)

There are two aspects of that statement which should be noted.

First, the OI "determination" referred to in the first sentence of the quoted statement is that the alleged violation occurred between January 31, 1979 and March 28, 1979. But the violation alleged in the NOV, both as originally stated and as refocused in I&E's Reply dated January 23, 1980, was a continuing violation beginning in October 1978. This was the basis for the imposition of the civil penalty of $155,000, which was paid by Met Ed in February 1980.

From this statement in the OI Report, it would appear that OI either did not adequately focus on the specific allegation in the NOV or that it was disowning the I&E determination for the period from October 1978 through January 30, 1979, which would have substantially reduced the amount* of the civil penalty imposed by I & E.

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* As we recalculate that amount, the civil penalty would have been reduced from $155,000 to approximately $65,000.

Since this submission is being made by the undersigned individually for the reasons stated in the accompanying letter and not on behalf of Met Ed, this is not a request by Met Ed for remittance of any part of the civil penalty paid by Met Ed in 1980. Rather, the point herein made is to illuminate what appears to us to be some confusion by OI concerning precisely what the NOV did and did not charge.

Second, the "implication" referred to in the second sentence of this quoted statement from the OI Report is an implication developed by OI; it is not a statement made in the Response nor, in our view, is it fairly derived from the actual statements in the Response. We stated in the Response that the temperature range of the PORV tailpipe temperatures during the October 1978 - March 1979 period was generally 170° to 190° F, but that:

> "...these temperatures do not appear to have been the result of a leaking PORV."

We also cited some evidence to support that view, namely

(a) The fact that the PORV tailpipe temperature during the October 1978 - March 1979 period had generally been in the range of 170° - 190° F;

(b) The fact that, during the October 1978 - January 1979 period, the reactor coolant drain tank ("RCDT") leak rate (which would have reflected leaks past the PORV and also the code safety valves) was essentially zero;

(c) The fact that, after the outage which ended on January 31, 1979, the RCDT leak rate increased;

(d) The fact that this increase in the RCDT leak rate was accompanied by a sharp increase in the code safety (not PORV) tailpipe temperatures; prior to the January outage those code safety tailpipe temperatures had been in the 100° - 115° F range and, after the January outage, they increased to the 160° - 180° F range;

(e) The fact that

> "...[t]hese matters were discussed by the plant staff. Based on temperature readings, a determination was made that Code relief valve RVIA was leaking and Work Required No. C-1137 (February 9, 1979) was prepared for the repair of this valve."; and

(f) The fact that the PORV tailpipe temperatures had been in the 170˚ - 190˚ F range during the October - March period, whether the unit* was at power or in hot shutdown, citing examples on October 1, 1978 and October 29, 1978.

From that evidence we drew the conclusion that:

"These values make it clear that [PORV] discharge line temperatures did not, of themselves, establish that the PORV was leaking."

Again, in appraising the Response, it is necessary to remember precisely what the NOV charged -- or at least what we understood that it charged. As we stated in the Response:

"The crux of the claimed noncompliance is the assumption that the occurrence of a 'symptom' automatically requires the implementation of the associated immediate and follow-up actions." (at page 34), and

"The claimed noncompliance is that this valve was not closed during the October - March period, despite the existence of one of the symptoms of a leaking PORV, specifically

'Relief valve discharge line temperature exceeding the normal 130˚F. Alarms on computer at 200˚F.' (at page 35) (emphasis supplied)

The NOV did not charge that Met Ed had violated the Procedure because there was a leaking PORV and Met Ed had not closed the block valve.

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* The Response mistakenly refers at this point to "Unit 1", whereas clearly "Unit 2" was intended.

As we have explained above--possibly at wearisome length--, our fundamental disagreement with this aspect of the NOV was that we viewed the NOV as stating that the occurrence of a "symptom" stated in a Procedure required the automatic taking of the action therein specified (in this instance the closing of the PORV block valve); we stated in the Response that the occurrence of a "symptom" (which can be identical for different types of conditions), required the initiation of an analysis to determine whether a problem existed and what the nature of the problem is.*

Specifically, we had stated in the Response that, when TMI-2 experienced PORV tailpipe temperatures in excess of 130° F, beginning in October 1978, Met-Ed should have carried out a diagnosis to determine the significance of the temperature being in excess of the 130°F reference temperature for the PORV tailpipe. We had also said that once the plant staff determined that the normal tailpipe procedure was not normally below 130°F -- i.e., was in the 170°-190°F range -- , the Procedure should have been changed to reflect that fact, and that Met-Ed's training program would include steps to assure that these types of changes in procedures are initiated when appropriate.

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* The testimony of Arnold in his OI interview quoted at page 59 of the OI Report is to the same effect.

It appeared to Arnold that I&E's Reply concurred in that view, but imposed the civil penalty because that step had not been taken and because there were other symptoms that also should have been recognized in that analysis. On that basis, Met Ed paid the civil penalty.

Some of our discussion of this subject in the Response was on what was likely to have been the result if the plant staff had gone through those diagnostic steps during the October-January period when leakage into the RCDT was essentially zero. As there indicated, we believed that that diagnosis would have established that the normal PORV tailpipe temperature was in the 170° - 190° F range and that the Procedure would have been modified to reflect that fact.

Our purpose in providing a description of the pre-accident activity of the plant staff was to relate the facts concerning the actions taken as a result of the observation of the increase in flow to the RCDT and the elevated temperatures of the code safety valve tailpipes.

2. The Response Correctly Characterized the Pre-Accident Activity of the Plant Staff

The Response, as quoted in the OI Report (p. 47), sets forth certain undisputed facts relative to plant conditions in the

months prior to the accident: 1) PORV tailpipe temperatures were in the 170˚-190˚ range from October 1978 through January 1979, when leakage to the drain tank (which would collect any leakage through the PORV) was essentially zero; 2) Code safety valve temperatures during that period were in the 100˚-115˚ range; 3) Following the January 1979 outage, PORV discharge line temperatures remained basically the same, code safety valve discharge line temperatures shot up dramatically to the 160˚-180˚ range and leakage to the drain tank became substantial. The Response states that:

> "These matters were discussed by the plant staff. Based on temperature readings, a determination was made that code relief valve RV1A was leaking and Work Request No. C-1137 (February 9, 1979) was prepared."

Based on contemporaneous documentary evidence, among other things, these facts are beyond dispute. As the OI Report concedes, the TMI-2 plan-of-the-day (POD) meeting agendas from February 2, 1979 to February 7, 1979 and accompanying annotations "do indicate a leaking code safety valve." (OI Report, p. 49). They also show that the POD participants were monitoring the discharge line temperatures which indicated such leakage. (OI Ex. 35). Moreover, the TMI-2 work request "to repair RCRV-1A code safety valve," dated February 9, 1979 (OI Ex. 36), was prepared by Earl Showalter, an engineer who, as OI points out, described himself as the "right hand man" of Richard Sieglitz, the TMI-2 Supervisor of Maintenance. (OI Report, p. 50).

Testimony cited by the OI Report also supports the Response. For example, Sieglitz testified "that he and others at a POD meeting in February 1979 reviewed prints of actual locations of the relief valve thermocouples and downstream thermocouples temperatures and concluded that the PORV was not leaking, but that one of the code safety valves was leaking." (OI Report, pp. 52-53). Sieglitz also testified as follows with respect to the plant staff's analysis of the discharge line temperatures:

> "The conclusions we drew from those numbers was that it was the code safeties that were leaking not the PORV. The reason being as the PORV had had a normal discharge temperature in the range of 180 degrees for some time. What we were looking at here was a drastic change in temperature and this was exhibited on the code safety valves and not on the PORV." (OI Ex. 37, p. 5733)

In addition, Leland Rodgers, B&W Senior Technical Advisor, stated in his OI interview that at one POD meeting Joe Logan, TMI-2 Superintendant, "made inquiries to determine if spare parts for a code safety valve were available at a time when the pressurizer system was experiencing substantial leakage." (OI Report, p. 49).

There are also two significant documents relating to plant staff discussions on relief valve leakage which were forwarded to OI but which are not reflected in the OI Report.

On October 25 and 26, 1979, at a meeting of the Plant Operations Review Committee (PORC), PORC provided their comments on the August 1979 I&E Report, including the following on the issue of pre-accident relief valve leakage:

> "Prior to March 28, 1979 members of the plant management staff had reviewed at the 'Plan of the Day' meeting the status of the leakage past the pressurizer relief valve(s). They concluded that one or both of the Code Relief Valves were leaking. The normal temperature (130°F) was exceeded however the 'Alarm' setpoint (200°F) to take corrective action had not been reached. Based on the following, continued operation was permitted.
>
> 1. The RC leakage was determined per 2303-3D1 and found not to exceed 10 gpm identified leakage; (the Tech Spec Limit)
>
> 2. The pressurizer was being recirculated via the spray valve to equalize boron concentration between the RCS and pressurizer;
>
> 3. The Code Relief Discharge Line temperatures were not placed on the Analog Trend Recorders per Section C Step C.3.3 of 2202-1.5. However, the temperatures were being maintained on the daily Plant Status/Plan of the Day records.
>
> In conclusion the electromatic relief block valve (RC-V2) did not require closing because the Code Relief valves were leaking and not the electromatic relief valve."

On November 10, 1979, the PORC met and reviewed the NRC's NOV letter. They provided the same response to the revised wording

of the citation contained in the NOV as they had to the potential item of noncompliance in the I&E Report. It is also significant that, according to PORC records: 1) the PORC's recommendations on the I&E Report were in response to a specific request from the station manager (Gary Miller) for the PORC to review that document; and 2) both Miller and Zewe were present during the PORC meeting that developed the PORC's recommendations for the response to the NOV. Warren was the PORC chairman at that meeting.

Not only the evidence described above supported that such a conclusion was reached by some members of the plant staff, but there also was testimony in the lawsuit and I&E interviews to that effect. In the OI Report (pages 52 and 52) the following description of lawsuit testimony is given:

> " . . . a review of GPU/Met-Ed interviews, in the form of depositions and trial testimony did identify that Richard SIEGLITZ, Supervisor of Maintenance, TMI-2, as one individual who testified that he had determined prior to the accident that a code safety valve was leaking and the PORV was not leaking. (SIEGLITZ trial testimony in January, 1983, unattached Exhibit 4). In summary, SIEGLITZ testified that he and others at a POD meeting in February 1979 reviewed prints of the actual locations of the relief valve thermocouples and downstream thermocouples temperatures and concluded that the PORV was not leaking, but that one of the code safety valves was leaking. (SIEGLITZ trial testimony direct, pages 5722-5733, Exhibit 37). On cross examination, SIEGLITZ could not identify other attendees at the POD meeting in question.

(SIEGLITZ trial testimony-cross at page 5824, Exhibit 38.) "In addition, SIEGLITZ said he did not recall being consulted about the response to the NOV before it was sumitted. (SIEGLITZ trial testimony-cross, Exhibit 39, at page 5833)

"INVESTIGATOR'S NOTE: Assuming that Wallace did receive information provided by SIEGLITZ, or some other attendee at the POD meeting in February 1979, the technical evaluation described by SIEGLITZ (review of prints and downstream thermocouples temperatures) would appear to be inconclusive as to which pressurizer relief valve was leaking."

The focus of the OI Report seems to be upon whether the results of a plant staff discussion of which valves were leaking would be technically deficient if it occurred as reported rather than whether such discussions took place and whether they came to the conclusion described in the Response. The technical soundness of the results of the plant staff discussions are addressed in the next section. However, the fact that the discussions occurred and had the results described in the Response is supported by further testimony that OI apparently did not consider.

I&E interviewed Warren, TMI-2 lead mechanical engineer, on May 7, 1979. That interview (page 57) shows Warren clearly believed any valve leakage was associated with a code safety valve and not the PORV and that steps had been taken to be ready to correct the problem at the first opportunity; specifically he testified as follows:

"CRESWELL: It is my understanding that the safety valves and/or power operated relief valves might have been leaking some?

"WARREN: We had a minor leak on one of the code safety valves. We had our spare valve that if we had of had a chance to shut down, we were gonna go in there and check it out. I had never done anything further than that. I knew about the leak, but as far as getting in there to do anything, we just hadn't had the opportunity. The electromatic, though, I don't believe that we had any leakage or any problems. That would be news to me. I didn't know that."

Similar to his testimony in the lawsuit, Sieglitz testified as to his knowledge of leakage through pressurizer valves in an I&E interview on July 3, 1979.

"FASANO: One of the items I think I remembered, and it may be on there [a plant maintenance work list], but I don't recall was the checking of the pressurizer relief valves, the electromatic as well as the two code safeties. Were you knowledgeable that they were having a leaking problem on those valves?

"SIEGLITZ: I was knowledgeable that they had a leaking problem on the code safeties. They were not sure as to which one it was. The tailpipes were hot. They'ed always run hot and one seemed to be running hotter than the other. Operations, I did not have it on my list because this is a maintenance list, that was carried on the daily plan of the day form that we had, and operations was going to check that, if and when we came down. . . ." (page 43)

* * * *

"FASANO: Are you familiar with previous problems with these particular valves?

"SIEGLITZ: I had not known of any problems on the electromatic relief valve, the question

that we had was the normal code safeties. We felt that we were getting some leakage, and that was the reason for a higher than what we anticipated temperature on the drain pipes. But, no I, prior to that we had not identified any problem with the electromatic relief valve." (page 44)

* * * *

"FASANO: Just a little bit more on the electromatic valve. From what I understood operations would go in and put their hands on it or . . .

"SIEGLITZ: A contact parameter [pyrometer] or some sort of other device, yes.

"FASANO: Alright. And you already had mentioned that the temperatures were reading higher apparently at a location which would indicate the code safetys whether (sic) leakers. How would this parameter make any difference?

"SIEGLITZ: Well, the question is we were trying to determine at one time we thought it might have been both code safetys that were leaking by. Operations and engineering had been looking into it for I guess several weeks just prior to this and it was determined later on that it was one and that they were willing to verify what they thought was the problem.

"FASANO: Was there any discussion prior to the event of using the block valve to determine whether you could eliminate at least the electromatic valve?

"SIEGLITZ: No, I don't recall any discussion along those lines." (pages 59, 60)

* * * *

"CRESWELL: . . . I think it's been fairly well determined that the safety valve, one of the safety valves was leaking.

"SIEGLITZ: Correct.

"CRESWELL: And there was a pretty good guess on which one it was.

"SIEGLITZ: Correct.

"CRESWELL: And it was on the order of say 6 gpm leakage through the safety valve.

"SIEGLITZ: Okay.

"CRESWELL: Had anybody on the staff ever approached you about repairing that safety valve?

"SIEGLITZ: Well, prior to the incident, that was one reason for determining which valve was leaking. . . .

"CRESWELL: Okay. Who was it that was wanting to make the . . .?

"SIEGLITZ: Well, that would've been through the POD which is a . . . the Plant Operations meeting we have daily and that would have been a composite crew of Jim Floyd and the station . . . the unit superintendent, engineering people, HP people. (pages 62 and 63)

* * * *

"CRESWELL: How long was it [leaking valve] known?

"SIEGLITZ: I would say it was in the neighborhood of several weeks, 2 to 3 weeks maybe. And . . . excuse me . . .and operations was monitoring the type of flow rate they did have or leakage that they felt that they had. So it wasn't just a leak or somebody said well we have a leak forget about it. They were cognizant of it and we're trying to determine if it had gotton any worse." (page 64)

While these documents and the testimony and exhibits cited above demonstrate that, prior to the accident, key members of the plant staff had in fact concluded that a code safety valve, and not the PORV, was leaking, the Response does not state, nor does it even imply, that every member of the plant staff had made such a determination before the accident. In fact, the Response only mentions that these matters -- reactor coolant drain tank leakage and pressurizer tailpipe temperatures -- were "discussed by the plant staff" and "based on temperature readings, a determination was made that code relief valve RV1A was leaking." Whether some operators or other plant personnel might have thought that the PORV was possibly leaking -- as OI suggests was the case (OI Report, p. 55) --, does not contradict the fact that a determination was made that a code safety valve was leaking and that a work request was issued for its repair. It also does not contradict the essential point that the preponderence of the technical information available at the time indicated that a code safety valve, and not the PORV, was in fact leaking.

While OI was apparently unsuccessful in obtaining testimony four or more years after the accident that described the interactions between Wallace and others that provided the basis for this aspect of the Response, the documentation and testimony provides significant evidence that members of the plant staff discussed the symptoms of leaking pressurizer valves and at least to the satisfaction of Sieglitz and Warren (two key members of the staff relative to action to fix any leaking valves) that one (or perhaps both) code safety valves was leaking and not the PORV.

What appears to the undersigned to be the case based upon reviews of the record at this time, is that members of the plant operations staff, including the unit superintendent (Logan), did not share that confidence completely. However, the NOV did not state, and did not intend to imply, that a pre-accident determination that the PORV was not leaking was the reason the PORV block valve was not shut. Indeed, even though the PORC stated flatly in November 1979 that a determination had been made that the PORV was not leaking, the Response made no such representation. It was limited to what the pre-accident documentation showed to be the case - namely, that safety valve RC1A (also referred to as RCRV-1A) was determined to be leaking and that a work request was issued to repair it.

3. The Conclusion by Plant Staff That a Code Safety Valve Was Leaking Was Technically Sound

The OI Report states that the determination by plant staff that a code safety valve was leaking does not appear to be technically valid largely based on the OI statement that any determination based on downstream thermocouple temperatures "would appear to be inconclusive as to which pressurizer relief valve was leaking." (OI Report, p. 53). As support for this proposition, the OI Report relies in part on testimony by Wallace, in which he states, in response to a question cast essentially in those terms, that:

"Simply based on having downstream temperatures in excess of 170 degrees on all three of the computer inputs that the operators had, he could not tell which valve was leaking. He would have to go to other data.

"You know, if all you gave the operator was a single point that says: Here, here are three temperatures, you know, from an engineering point of view, you can't tell which is leaking simply because the errors between the temperatures are so great; and, secondly, because of the cross-communication back in the valves once the leakage exceeds a certain number -- and I don't remember the numbers, so it's less than a gallon a minute." (WALLACE Interview, OI Ex. 19, pp 83-84)

The OI Report also points to testimony by James Stubbs in which he explains that because the plant computer only gives "output when required" rather than on "a continuous twenty-four hour strip chart" he could not have made "the determination that he did in his technical analysis that the PORV was not leaking and one or both of the code safety valves were leaking, based on downstream temperatures only." (OI Report, pp. 53-54).

What the OI Report fails to mention, however, is that the plant staff had far more data available to them than just three discharge line temperatures at a "single point" or limited "plant computer" information. Rather, as reflected in the Response and in Sieglitz's testimony, the plant staff had available the history of discharge line temperatures over a period of several months, combined with the history of essentially zero leakage into the RCDT before the startup after the January outage and some leakage into the RCDT after that startup at a time when the temperatures of the code safety tailpipes increased and the PORV tailpipe temperature did not. Together those facts provided a reasonable basis for

believing that the PORV tailpipe temperatures of 170°-190° since October 1978 were not attributable to a leaking PORV. As Sieglitz's testimony establishes, the plant staff also had available the diagrams showing the actual location of the thermocouples on the PORV and code safety valve discharge lines.

Based on this data, it appears reasonable and "technically valid" to conclude from the elevated code safety valve temperatures and increased leakage into the RCDT after the January outage that a code safety valve had started to leak rather than the PORV.* Indeed, as Wallace noted in the passage relied on by OI (OI Ex. 19, pp. 83-84), leakage out of any of the pressurizer valves would elevate the tailpipe temperatures of all three valves. Yet, during the October to January period when the PORV tailpipe temperature was elevated, leakage into the RCDT was essentially zero. Thus, it was reasonable to conclude that the PORV was not leaking during October - January. By contrast, after the January outage the temperatures for the two code safety valves increased dramatically along with the development of leakage into the RCDT, while the temperature of the PORV tailpipe temperature remained essentially unchanged from the October - January level. Accordingly, it was certainly reasonable for some plant staff members to conclude in February, as the documents and testimony demonstrate they did, that a code safety valve, and not the PORV, was leaking.

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*This conclusion does not deny that more extensive and sophisticated, and thus less vulnerable to incorrect results, analyses can be carried out. However, the approach used by the plant staff was technically defensible and, based on all the information now available, appears to have given the correct result.

E. OI's Summary Conclusion is Not Supported by the Preponderence of the Evidence

In its synopsis (on page 3) the OI Report states:

> "In summation, it appears that Met-Ed's response in addressing this statement of noncompliance (4.A.) was drafted to support a company position with little or no attempt to resolve or address conflicting information."

This harsh statement appears to us to be the product of the various misunderstandings, misinterpretations and misconceptions discussed above, compounded by the attribution to us of implications which we did not intend and which we believe are not fairly derived from what we in fact said in the Response. Those matters are discussed at length above.

We assume that the "company position" referred to in this statement of OI is the position Met-Ed took, in response to the requirement of the NOV that Met-Ed either admit or deny the specific alleged noncompliance stated in the NOV. Since we believed that that specific alleged noncompliance - as we understood it - was not correct, we denied it. We were explicit in stating what our understanding of the crux of the alleged noncompliance was. When I&E refocused, in its January 1980 Reply, the nature of the alleged noncompliance, Arnold did not dispute that refocused allegation and Met-Ed paid the civil penalty.

If we had had unlimited time with no other pressing responsibilities, it might have been feasible to canvas all views and

opinions throughout the organization to see whether others placed a different interpretation on the factual information than we did, and, if they did have differing views, the bases for such views. But we did not have unlimited time and we did have other pressing responsibilities. We had only six weeks between the issuance of the NOV and the Response to assemble and evaluate what we believed to be pertinent data and formulate the 95 page Response (in which the discussion of this item took 8 pages, including two exhibits).

Insofar as the "no indication" phrase is concerned, we have previously stated that the phrase is unfortunate because it connotes a more absolute condition then seems to be achievable. By the same token, OI's quarrel with it seems to us to be unduly captious and contrived.

OI relies for its dispute of that phrase primarily on the testimony of Mr. Zewe in a public hearing before the President's Commission and in two GPU interviews. Our belief was - and is - that a fair reading of that testimony in context is consistent with our characterization. But if I&E read it differently, it had that testimony as well as the I&E's own interviews of Mr. Zewe (as well as scores of other interviews).

OI also relies upon TDR-054 and the October 29, 1979 draft of the Keaten Report to dispute the "no indication" phrase. Even if the ambiguous statements relied upon by OI are read as OI

does - contrary to Mr. Keaten's explanation -, they are statements of interpretation, not of factual information.

Insofar as the OI statement is based on the implication derived by OI that the emergency procedure was not followed because of a pre-accident determination PORV was not leaking, the Response makes no such statement and we believe that a fair reading of the Response does not support the drawing of such an inference. The Response does state that the elevated PORV tailpipe temperatures "do not appear to have been the result of a leaking PORV" and "did not, of themselves, establish that the PORV was leaking" and presents some evidence to support that view. The Response did not state that the PORV was not leaking, or that the plant staff had made a determination that the PORV was not leaking, or that there had been a decision not to close the PORV block valve because of such a determination.

Since the NOV statement of alleged noncompliance was not for a failure to close the PORV block valve when the PORV was leaking, but rather was for a failure to close the PORV block valve with PORV tailpipe temperatures in excess of 130°F, the NOV did not require a response as to whether the PORV had in fact been leaking. We, therefore, do not believe it would have been relevant to the Response to have attempted to ascertain whether there were opinions or beliefs in the Met-Ed organization that the PORV had, or had not, been leaking and to evaluate the bases for such beliefs.

As stated earlier (at page 21), we did believe that it would be helpful to the Commission to have such objective factual information as we had at the time the Response was prepared as to whether the PORV had been leaking and we included that information in the Response.

IV. Supplement No. 5

A. General Comments

The material in Supplement No. 5 dealing with the Response largely consists of a summary or restatement of the material in the OI Report and, to that extent, our earlier comments in this memorandum are also applicable to Supplement No. 5. There are, however, some additional matters raised by Supplement No. 5 which we believe should be addressed.

B. Inaccurate Attributions

On some occasions, Supplement No. 5 attributes to the Response statements that were not therein made. Since some of these appear to be central to Supplement No. 5's characterization of our actions, they require comment.

On page 13-4, Supplement No. 5 states:

> "The staff finds the licensee's response, which stated that the operators were not desensitized to high tail pipe temperatures . . ." (emphasis supplied)

We suggest that a careful reading of the Response will demonstrate that it does not contain such a statement. Given the microscopic attention that the Staff has accorded to our actual

statements, we should appreciate not being chastised for statements that we did not make.

On the same page, Supplement No. 5 states:

> "The licensee's response ignored the statements of the operators themselves following the accident . . ." (emphasis supplied)

We submit that the record is clear that the statements of the operators were not ignored in preparing the Response. On the contrary, they were important to the Response. Even assuming that our understanding of those statements is not correct - which we do not concede -, it is scarcely accurate to charge us with ignoring these statements.

On the same page, Supplement No. 5 says:

> "The second area concerns the licensee's rationale for his asserting that the procedure for a leaking power-operated relief valve was not violated." (emphasis supplied)

This statement assumes that the actual charge in the NOV was that there had been a leaking PORV or at least that the plant staff thought it was leaking. But, that was not the charge in the NOV. The charge was that Met-Ed had ignored a procedure alleged to require closing of the PORV block valve when the PORV tailpipe temperature exceeded 130°, whether or not the PORV was leaking and independent of what the plant staff thought was the situation. That was the charge that we denied.

Yet still another statement on the same page is the Staff's statement:

> "The licensee's position that a preaccident determination had been made that a code safety valve and not the power-operated relief valve (PORV) was leaking is not supported by the evidence." (emphasis supplied)

Although there is evidence that such a determination was made by some of the engineering (not operating) plant staff, the Response did not assert that such a determination had been made. It simply reported the facts concerning the temperatures of the PORV and code safety tailpipes during the October-January and post January 31 periods and the leakage into the RCDT, and the Response then stated:

> "These matters were discussed by the plant staff. Based on temperature readings, a determination was made that code relief valve RV1A was leaking and Work Request No. C-1137 (February 9, 1979) was prepared for the repair of this valve."

C. Oversimplifications

It may well be that the process of summarization tends to produce this result, but it appears to us that some of the statements made in Supplement No. 5 overly simplified, or take out of context, actual statements.

Illustrative of this problem is the following statements on page 8-16 of Supplement No. 5.

> "Wallace maintained that he had relied 'very heavily' on statements made soon after the accident. OI Keaten Ex. 19 at 118-119.

> However, internal Met-Ed interviews with Zewe, shortly after the accident, show that Zewe was not alerted to trouble by the discharge pipe temperatures on March 28, 1979, because these temperatures had been running at around 190°F and the PORV had recently lifted. [When Zewe was interviewed by OI, he could not recall whether the high PORV discharge line temperatures delayed his recogntion of the stuck-open PORV (OI Keaten Ex. 27 at 16).]"

Although the particular statements of Zewe relied upon in the second sentence of the above-quoted material are not identified, it appears from page 8-20 of Supplement No. 5 that the Staff was relying upon the following statement made by Zewe in his March 30, 1979 GPU interview.

> "So, before I had left to go down to get that polisher job, I had asked Ken Bryan, the other shift supervisor, to check the discharge temperatures on the relief valves but they didn't look abnormally high since the electromatic had lifted. It was about 228 or 230 degrees and they had been running about 170 or 180 so I figured it was still warm from when it lifted because it didn't indicate that it was still open . . ."

Zewe did not say in that statement - or elsewhere in that interview - whether a pre-accident PORV tailpipe temperature of 130° rather than 170°-190° would have made a significant difference in his thinking. That issue did not come up in that interview, or in his April 6, 1979 interview. But, as we have demonstrated earlier in this memorandum, Zewe's statements before the Kemeny Commission and the ACRS, as well as his May memorandum, demonstrate that factors other than the 170°-190°F pre-accident PORV tailpipe temperatures were responsible for his delayed recognition of the stuck-open PORV.

Another curious aspect of the quoted material from page 8-16 of Supplement No. 5 is the sentence:

> "[When Zewe was interviewed by OI, he could not recall whether the high PORV discharge line temepratures delayed his recognitiion of the stuck-open PORV (OI Keaten Ex. 27 at 16).]"

Yet, at page 8-21, Supplement No. 5 states, with respect to that same OI interview:

> "This is consistent with the statement to OI by Zewe that he could not say that temperatures of 230°F would have seemed significant if the baseline for comparison had been 130°F instead of 180°F. OI Keaten Ex. 27 at 10, 15."

D. Supplement No. 5's Treatment of the Post-Accident Analysis of Whether the PORV Had Been Leaking

As stated in connection with the discussion of the OI Report, a post-accident technical investigation was initiated to determine whether the PORV had been leaking. The result of that investigation was reported in Technical Data Report ("TDR")-126, completed in February and released on February 28, 1980. (A question raised by I&E's review of the Response was also dealt with in TDR-126). TDR-126 concluded, in pertinent part, that (1) the PORV was not leaking prior to March 28, 1979, (2) a code safety valve was leaking from sometime in late 1978 and that that leakage increased significantly during February and March 1979, and (3) PORV tailpipe temperatures in the range of approximately 180° - 190°F are normal for full power operation with no PORV

leakage. Part of TDR-126 was a memorandum, dated February 22, 1980, and report from James Stubbs which provided the basis for the first two of those conclusions.

TDR-126 (including its attachment) was reviewed with, and informally provided to, I&E shortly after its completion. From our discussion with I&E, we understood that the I&E staff agreed that the analysis was reasonable, although apparently that was not documented in any written communication to us.

In August 1983, the Director of the NRC's Division of Licensing requested the NRC's Division of Systems Integration to evaluate the analysis in TDR-126. By a memorandum, dated October 21, 1983, the Division of Systems Integration forwarded its evaluation to the Division of Licensing. In that memorandum, the Division of Systems Integration stated:

> "We have concluded that the analysis is reasonable. Some temperature behavior is not completely explained. The evidence is quite convincing that one safety valve was leaking in the February to March 1979 time frame. The evidence is reasonable but not quite as obvious that the PORV was not leaking prior to the accident."

The Staff forwarded a copy of the analysis made by the Division of Systems Integration to OI with its memorandum, dated November 7, 1983.

Supplement No. 5 does not refer to the Division of Systems Integration's analysis or to TDR-126 in this context. Instead, it states:

> "The only technical analysis of pressurizer leakage is postaccident and does not establish that the PORV was not leaking."

E. Willful Violations

At page 8-19 of Supplement No. 5, it is stated:

> "The staff concludes that the licensee did willfully violate the pertinent emergency procedure..."

Later, on the same page, Supplement No. 5 states:

> "In the absence of convincing evidence that the licensee had determined before the accident that the PORV was not leaking and the statements by the Station Manager that they chose not to follow the procedure, the staff concludes that the licensee made a willful decision to violate Emergency Procedure 2202-1.5. Statements to this effect were made by plant operations personnel. See NUREG-1020LD, Section 10.4.1. The PORV block valve was not closed despite the presence of all of the symptoms detailed in the emergency procedure. In sum, plant personnel thought that the PORV was or might be leaking, saw symptoms that called for closure of the block valve to determine whether the PORV was leaking, and decided not to follow the procedure."

1. Lack of Involvement of the Undersigned

Assuming for the moment that there was a willful violation of the Procedure in that the block valve was not closed to determine whether the PORV was leaking, it is our belief that the Supplement No. 5 statements are not directed at the undersigned.

However, the context in which these statements are made could cause some confusion in this regard and it appears appropriate to remove that possible confusion.

In its Summary of Additional Information Relevant to NUREG-1020 LD, Category 10, dealing with Section 10.4.1 of NUREG-1020LD, which was forwarded to OI with NRC's memorandum of November 7, 1983, the staff raised a series of questions including questions as to whether the decision not to close the block valve was "made with the knowledge or at the direction of off-site management", without identifying the individuals falling within that category.

Presumably, OI's investigation was intended to cover these questions, including any potential involvement by the undersigned. Although we are understandably allergic to absolute statements in the light of the reaction to the "no indication" statement in the Response, we do not find anything in the OI Report that suggests that OI found that the undersigned had any participation in a pre-accident determination not to close the block valve. (We also do not find that the OI Report characterizes such a decision as "willful", with the adverse overtones of that term.) We find it difficult to believe that, if OI had any evidence of such involvement by the undersigned, the OI Report would have been silent on that score.

Nor does Supplement No. 5 identify either of the undersigned in such a decision. At pages 8-17 and 8-18, Supplement No. 5 refers to:

> "management's prior involvement in the decision to not follow the emergency procedure"

by quoting from the transcript of a taped group meeting held on May 25, 1979* in which Messrs. Miller (former TMI Station Manager), Zewe (former TMI-2 Shift Supervisor), and Faust and Frederick (former TMI-2 Control Room Operators) were participants. There is no reference to the undersigned in that transcript. Supplement No. 5 also refers to testimony by Mr. Logan (former plant manager), before the Kemeny Commission, but it does not state that that transcript or Mr. Logan's testimony demonstrates that either of the undersigned were involved in a decision not to close the PORV block valve.

We hope that, as a result of consideration of our request as set forth in the accompanying letter, the fact that we were not involved in any decision not to close the PORV block valve will be acknowledged.

2. The Nature of the Alleged Violation

The nature of the violation stated in the second quotation above from Supplement No. 5, namely, that

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* Copies of the tapes of this meeting were furnished to the Kemeny Commission on September 12, 1979 and to the Senate Subcommittee on Nuclear Regulation on January 14, 1980.

> "...plant personnel thought that the PORV was or might be leaking, saw symptoms that called for closure of the block valve to determine whether the PORV was leaking, and decided not to follow the procedure"

is significantly different from that stated in the NOV. We do not know what evidence the Staff had to support that change. We do suggest that the evidence cited in Supplement No. 5 as such support appears to be less than compelling.

Clearly, the operators saw symptoms that should have caused them to analyze whether or not the PORV was leaking and, if they found it was not, to document the basis for their finding. There are indications that there was also some confusion, or lack of communication, among the plant staff components as to what had or had not been done. Since we were not involved, we cannot state with certainty what was, or was not, done.

We are confused by one aspect of this statement in Supplement No. 5. Apart from the possibly new element of "willfulness", it appears to us that the violation set forth in Supplement No. 5 is equivalent to that set forth in the I & E January 23, 1980 Reply, with which Met-Ed agreed and for which Met Ed paid a civil penalty more than five years ago.

3. "Willfulness"

Since we were not participants in any decision not to

implement the Procedure, we cannot speak with first hand knowledge about how such a decision would have been made or what elements might have gone into it. There are, however, some factors that we believe are deserving of consideration, namely:

(a) With the benefit of hindsight, the Procedure was not clearly written, did not reflect actual plant conditions and should have been changed. The Response so stated.

(b) Again with the benefit of hindsight, the operator training was deficient. The Response so stated.

(c) The characterization of "willfulness" comes more than six years after the event, when memories have faded and a seemingly endless series of investigations about the accident have confused whatever memories remain. In addition, many of those involved are no longer in the area. The difficulty of accurately determining the facts relating to charges so stale and personnel so scattered could be enormous.

(d) The characterization as "willful" is not based on new evidence, unless the tape of the May 25, 1979 meeting is regarded as being in

that category. As to all other evidence, the "willful" characterization is a reinterpretation of evidence that has long been available to the NRC. Even as to the tape of that meeting, copies of that tape were furnished to the Kemeny Commission on September 12, 1979 and to the Senate Subcommittee on Nuclear Energy on January 14, 1980. It is not unlikely that the NRC has had copies of that tape from one of those sources for some time.

(e) If great importance is to be attached to that tape, it would be appropriate to listen to the tape, rather than rely on the transcript. The tape reflects a confusing and unstructured discussion, with the speakers not clearly identified, and it is sometimes not clear whether a statement is being made or a question asked. In our view, it reflects uncertainty, rather than conviction, on the part of at least some participants, such as Mr. Miller as to what they thought that they had thought.

(f) To some degree - although not necessarily relevant -, enforcement actions

appear to be colored by the actual consequences of the action. In that light, it may be appropriate for the NRC to make whatever further analysis is required to determine whether the PORV was in fact leaking prior to the accident. TDR-126 concluded that it was not, and the Division of Systems Integration concluded that that analysis was "reasonable", and that "[t]he evidence is reasonable but not quite as obvious that the PORV was not leaking prior to the accident." If it should be established that the PORV was in fact not leaking prior to the accident, the failure to make an analysis prior to the accident as to whether the PORV was leaking may take on a different dimension than has been assumed.

F. The Surveillance Procedure for Emergency Feedwater Valves

Supplement No. 5 (at page 8-21) is highly critical of the undersigned for denial in the Response of the violation alleged in the NOV concerning the surveillance procedure of the emergency feedwater valves, which the Staff characterizes as "hairsplitting" and inconsistent with a licensee's obligation that information submitted be "full, complete, timely and accurate." It also states that:

> "Where the intent of a TS requirement is clear, as even the licensee's own Keaten task force apparently found it, a response such as that provided by licensee to the NOV is less than complete and less than acceptable."

We suggest that that characterization of this part of the Response does not accurately set forth the actual text of the Response, which was:

> "Metropolitan Edison agrees that continued plant operation with the emergency feedwater header isolation valves (EF-V12A and 12B) in the closed position is an apparent breakdown in controls over the operability of safety related equipment as stated in NUREG 0600 Section I.2.3.2. While Metropolitan Edison does not believe that controlled isolation of the feedwater header for routine testing is in violation of the Technical Specification, we agree that it is undesirable and steps will be taken to modify surveillance test procedures for the emergency feedwater system, and to provide routine (including some as frequently as each shift) status checks on components important to the safe operation of the plant."

We then proceeded to explain why we believed the citation in the NOV was incorrect.

The quoted Staff comments indicate to us that the Staff believes that we should have ignored the specific terms of the Technical Specifications and citation of the NOV and interpreted them in accordance with their intent. We did not believe that that was what the NOV asked us to do. We believed, on the contrary, that we had properly expressed our view that even though the citation was in error, the actions taken by Met Ed reflected "an apparent breakdown in controls" and was "undesirable."

At this late date, we see no point in continuing the debate. While we have difficulty acknowledging the validity of the perjorative terms in which this criticism is cast ("hairsplitting", "less than complete and less than acceptable"), we clearly regret that the manner of stating our position should have been so troublesome to the Staff. Perhaps, in evaluating this matter, the Commission will also give consideration to the fact that it was a small part of a very lengthy Response prepared in a six week period.

R. C. Arnold

E. G. Wallace