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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD
Before Administrative Judges:
Ivan W. Smith, Chairman
Dr. Walter H. Jordan
Dr. Linda W. Little

In the Matter of	
METROPOLITAN EDISON COMPANY	Docket No. 50-289
(Three Mile Island Nuclear Station, Unit No. 1)	(Restart)
	April 5, 1982

MEMORANDUM AND ORDER MODIFYING AND
APPROVING NRC STAFF'S PLAN OF IMPLEMENTATION

Background and Summary of Rulings

In the Partial Initial Decision of December 14, 1981 the Board explained that, throughout the decision on plant design and unit separation issues, references were made to the Board's reliance on various Staff "requirements", Licensee "commitments" and Board-imposed "conditions" without studied regard to whether these terms were intended to be conditions or legally-binding technical specifications attached to the TMI-1 license. PID ¶¶ 1198-1202.

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We explained further that the evidentiary record did not lend itself to detailed determinations as to which of these considerations require the imposition of rigid license conditions and technical specifcations (PID ¶ 1213); that the license should not be freighted unnecessarily and too rigidly with license conditions (PID ¶ 1207); that enforcement involves its own expertise (PID ¶ 1213); that the Notice of Hearing assigned responsibility to be shared by the Director of Nuclear Reactor Regulation and by the Board to implement the Board's decision (PID ¶ 1216); and that to leave the entire enforcement responsibility to the Staff would be an excessive delegation of the Board's responsibilities (PID ¶ 1216).

Therefore we deferred issuing our final decision on which of the various requirements, commitments and Board-imposed conditions should be made license conditions and we directed the Staff to present a plan for the implementation of the Board's decision on plant design and unit separation matters. Licensee was directed to respond to the Staff's report and other parties were invited to respond. PID ¶ 1217. As to plant design issues, the Board listed nineteen categories of requirements which, at a minimum, the Staff was directed to address. PID ¶ 1218.[1/] The Staff was also directed to include four categories of unit separation requirements in its implementation plan report. PID ¶¶ 1236-37.

1/ One requirement, to complete a revised small-break loss of coolant accident analysis under revised assumptions, was later deleted from the decision by the Board's order of January 26, 1982.

The Staff, on February 1, 1982, reported the details of its enforcement plan. On February 22 the Licensee replied to the Staff's report challenging some aspects of the enforcement plan. Union of Concerned Scientists (UCS), the only other party to reply to the Staff's report, on February 17, criticized the Board's approach to enforcement, and faulted some aspects of the Staff's plan. The Staff, by leave of the Board, filed on March 10 a reponse to the Licensee's position in which the Staff reported that it and Licensee now agree in most of the disputed areas.

The Staff's report addressed each of the matters set out in the Board's directive and other implementation items. We find that the implementation plan is generally sufficient but that it requires some modifications and additions. Below, as modified and amended, we adopt the plan as the Board's order in this proceeding.

Discussion

Steam Generator Bypass Logic Problem

In PID ¶ 1064[2/] the Board required that

> . . .prior to restart, the Licensee propose for Staff approval, a long-term solution to the steam generator bypass logic problem for implementation as soon as possible after

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2/ The NRC Staff incorrectly refers to PID ¶ 1174.

restart. Prior to restart, the Staff shall certify to the Commission that the Licensee has made reasonable progress in initiating its program for the long-term solution.

In its enforcement plan (page 3, item 5), the Staff proposes that it will require Licensee to upgrade its main steam rupture detection system to safety grade prior to startup following Cycle 6 refueling. The plan also requires (at page 6, item 10) that prior to restart, the Licensee must propose a means to prevent feedwater isolation due to failure in rupture detection systems.

UCS contends (at page 4) that implementation of the solution after the Cycle 6 refueling does not comport with the Board's order requiring implementation as soon as possible after restart. However the Board is satisfied with the time contemplated by the Staff. On the other hand, UCS is correct in that the Staff has failed to provide for certification to the Commission that, prior to restart, Licensee has demonstrated reasonable progress in initiating the longer-term solution.

Accordingly we reiterate the requirement that the Licensee demonstrate reasonable progress prior to restart. If the Staff is satisfied, upon evaluation, that Licensee's proposal of a means for preventing feedwater isolation due to a failure in the rupture detection system itself constitutes reasonable progress, it may so certify. We will not, however, require, as UCS urges (at page 4), a report to this Board of the substance of the program.

Environmentally Qualified Pathway to Cold Shutdown

In our Partial Initial Decision we presumed that Licensee would environmentally qualify the equipment needed to achieve cold shutdown in accordance with Supplement 3 to IE Bulletin 79-01B. But recognizing some doubt about the validity of that presumption, we required that the Commission be informed if the Licensee does not plan to qualify the equipment. PID ¶ 1180.

In its January 28, 1982 Comments to the Commission on immediate effectiveness, the NRC Staff has complied with this directive by informing the Commission, inter alia, that its position as set forth in the IE Bulletin has since changed, and that the Staff is not currently aware of any such plans (Comments at 14, 15) by the Licensee. The Staff's report to the Commission is complete. The Licensee has also disclosed its position to the Commission in its January 28 comments on immediate effectiveness (at page 4). The Board's reporting requirement is satisfied and we are also satisfied with the substance of the Staff and Licensee's respective reports.

The Staff has listed under II C, "COMMITMENTS/REQUIREMENTS TO BE COMPLETED UNDER RESTART", our requirement flowing from PID ¶ 1180 that the equipment either be environmentally qualified or that the Commission be so informed. Licensee believes, apparently, that there is an opportunity for confusion in this organization in that listing it there might be read to

require environmental qualification before restart. This interpretation is not likely, but a better organization would be, as Licensee suggests, under II D, "OTHER COMMITMENTS/REQUIREMENTS" of the implementation plan.

Systems Interaction Studies

The Board specified in ¶¶ 1000 and 1003(f) that TMI-1 is to be included by the Staff in generic reviews of systems interactions. The Staff reports that it is still formulating and testing methodologies and guidance for the conduct of systems interaction studies and is presently not imposing a requirement to conduct such studies generically. Report, pp. 8, 9. However, in response to recommendations by the ACRS, the Licensee has committed to perform a probabalistic risk assessment for TMI-1. Id. The Staff states that it will monitor Licensee's efforts to assure that this assessment is performed in accordance with Staff guidance.

Contrary to UCS' comments (at pp. 5, 6) the Staff has not abandoned the generic studies program as is demonstrated by its report that it is proceeding with the formulation and testing of methodologies and guidance. However, the Board and UCS (Id.) were both concerned that the Staff's report means that, contrary to the intent of the Board's order, TMI-1 would not be included in any generic reviews. The Board has since been assured that if the presently underway initial studies of the five other plants indicate that the studies are useful and worthwhile, TMI-1 will be

included. Tr. 27,013 (Cutchin). This conforms to the intent of the Board's order.

Control Room Design Review

The Staff originally proposed to include prior to restart the following specific license condition:

> Prior to startup following Cycle 6 refueling, the Licensee shall correct the deficiencies in the TMI-1 control room that are identified in Items 3b, 3e, 3g, 4c and 10b of NUREG-0752 and its Supplement 1. (See PID, ¶¶ 913 & 919, n.109.)

Staff Report at 3. Licensee responded (at page 3) that this condition should be modified to eliminate Items 3b, 3e, 3g and 10b, as well as the reference to PID ¶ 919, n.,109.[3/] Licensee's complaint was that its commitment to address these items in a subsequent submission was translated by the Staff into a requirement for unidentified corrections; that Licensee is being treated differently than other operating reactors, and that there is no basis for the schedule imposed. Id. at 3-7.

Subsequent to Licensee's response, Staff and Licensee discussed Licensee's concerns and, by leave of the Board, the Staff reported that both agree that the license condition may be reworded as follows:

3/ Items 3b and 3g relate to Bailey controllers. Item 3e relates to detection of burned-out indicator bulbs. Item 10b and PID ¶ 919, n.109 relate to in-plant communications.

> The Licensee shall correct the human factors deficiency in TMI-1 control room design that is identified in Item 4c of NUREG-0752 and its Supplement 1 prior to startup following Cycle 6 refueling, and the Licensee shall address final resolution of the human factors design deficiencies that are identified in Items 3b, 3e, 3g and 10b of NUREG-0752 and/or its Supplement 1 in its detailed control room design review (DCRDR) report for TMI-1. (See PID ¶ 913).

Staff Response of March 10, 1982, at 1, 2.

The Board accepts the agreed-upon license condition. We also accept Licensee's recommendation that Item II C.8 under COMMITMENTS/REQUIREMENTS TO BE COMPLETED PRIOR TO RESTART should be modified to include Supplement 1 to NUREG-0752. Thus the modified condition reads:

> "8. Staff will review control room modifications against criteria of NUREG-0752 and its Supplement 1, prior to restart (See PID ¶¶ 913-15)." [Footnote omitted]

Work Suspension During Fuel Handling

The Board required that "[d]uring any Unit 2 fuel movements Licensee will suspend work in the Unit 1 area of the fuel handling building ...." PID ¶ 1326(a). The Staff proposed the following condition:

> During any Unit 2 fuel movements Licensee shall suspend work in the Unit 1 area of the fuel handling building. (See PID, ¶ 1326).

Staff Report at 3, Item II.A.7.

Licensee objected to the license condition proposed by the NRC Staff as "constituting too literal an interpretation of the Board's order". Licensee urged, instead, that the license condition not impose an absolute

bar to work in the Unit 1 area of the fuel handling building during Unit 2 fuel movements, but rather that NRC Staff review of Unit 2 fuel movement procedures consider on an ad hoc basis whether safety considerations require halting work in the Unit 1 area of the fuel handling building. Licensee Response, p. 8.

Licensee's problem rises not from the Staff's interpretation of the Board's order, but from the order itself. The Staff's initial proposal reflected both the language and the intent of our order. The solution proposed by the Licensee would have the Board reexamine the evidentiary record, draw different inferences from it and arrive at another conclusion. As it turns out, we recognize that the original order should be modified and that the condition agreed upon by the Licensee and Staff and set out below, is appropriate. There is, however, a question of jurisdiction. Licensee's motion appears to us to be an untimely petition for reconsideration, and, standing alone, it would be beyond our jurisdiction. On the other hand we specifically retained jurisdiction to approve the Staff's implementation plan. Even though we did not invite the parties to challenge the decision itself, we see no merit in implementing an order we no longer support. The better course is to proceed as if we continue to have jurisdiction because, even if we do not, our ruling may assist the Appeal Board or the Commission upon any review.[4/]

4/ In its order of March 4, 1982 the Appeal Board indicated that our views on the substance of Licensee's concerns would be useful.

The Licensee has traced the evidentiary pathway to our earlier conclusion. We discussed the potential impacts on Unit 1 operations from disposition of the Unit 2 reactor core at PID ¶ 1254 where we found that fission gas activity in the Unit 2 reactor core is at less than detectable concentrations. In PID ¶ 1255 we found that the fuel handling building ventilation and filtration systems will be in service during (Unit 2) defueling operations in order to mitigate the consequences of a postulated fuel handling accident.

With an environmental barrier in place prior to restart, the only Unit 1 area that potentially could be affected by a Unit 2 fuel handling accident is the Unit 1 fuel handling area. PID ¶ 1256. If a Unit 2 fuel handling accident were to contaminate the Unit 1 fuel handling area, work in the Unit 1 area could be brought to a safe conclusion, the radiological problem could be addressed, and the Unit 1 fuel handling area would be available within a matter of days. Id. Fuel handling evolutions generally need not be performed immediately, so we concluded that any delay in gaining access to the Unit 1 fuel handling area would not adversely affect safe operation of Unit 1 (id.); we also found that if a true safety need required quick entry to the Unit 1 fuel handling area, such entry could be made. Id. at n.157.

Nevertheless we stated that potential Unit 2 fuel handling accidents "will not adversely affect safe operation of Unit 1, in that during any Unit 2 fuel movements, Licensee will suspend work in the Unit 1 area of the fuel handling building . . . ." [Underlining added] See PID ¶ 1256. The source of this observation was the written direct testimony of NRC Staff witness Stoddart, ff. Tr. 10,159, at 22-23. This conclusion is contrary to the explicit assumption of other testimony that operations may be taking place in the Unit 1 fuel handling area during Unit 2 fuel movements. Tr. 10,062 (Fuhrer).

Licensee argues that we may have misunderstood the thrust of Mr. Stoddart's written testimony. His testimony states that "[s]uspension of work in the TMI-1 area during TMI-2 fuel movements will be a procedural requirement [emphasis added]." Stoddart, ff. Tr. 10,159, at 22-23. Later Mr. Stoddart refers to both hardware modifications and to "the described administrative controls", which probably refers back to the procedural requirement to suspend work. Licensee would have us construe this testimony as relating to ad hoc procedural controls that might be imposed on work in the Unit 1 fuel handling area depending upon the nature of fuel movements taking place in the Unit 2 fuel handling area, and not as an absolute requirement that work always be precluded in the Unit 1 fuel handling area during Unit 2 fuel movement.

Licensee recognizes, however, that its reading of Mr. Stoddart's testimony may not be free from doubt. But Dr. Bellamy, chief of technical

support for the NRC's onsite Three Mile Island Program Office (TMIPO), provided testimony which, in Licensee's view, resolves the matter.

Dr. Bellamy testified that the Staff did not have in mind any specific cases where there would be a specific restraint on Unit 1 operation but that before any activities are approved at Unit 2, the Staff would impose an additional limiting condition of operation which in the Staff's judgment should be imposed. He was referring specifically to a situation where there could not be movement of Unit 1 fuel during movement of fuel from the Unit 2 pool. Tr. 10,206.

Having reconsidered the testimony of the Staff witnesses on the matter, the Board agrees that the record does not require an absolute bar to any work in the Unit 1 area during Unit 2 fuel movements. The Staff itself also now expressly agrees that such a ban is not necessary. Staff March 10 Response, at 3. As a result of Licensee's objection, the Staff discussed the matter with the Licensee and the Commonwealth of Pennsylvania and all agree that the condition may be reworded as follows:

> During any Unit 2 fuel movements in the fuel handling building, the Licensee shall suspend work in the Unit 1 area of that building, unless the Licensee has submitted to the NRC Staff for its review specific written procedures for the planned movements of Unit 2 fuel and an evaluation of the potential impacts of those fuel movements on personnel working in the Unit 1 area of the building and the Staff has agreed that the potential impacts of the planned Unit 2 fuel movements on personnel working in the Unit 1 area of the building do not require that work in the Unit 1 area of the building be suspended.

Id.

The Board is satisfied with the modified condition.

Filtration During Fuel Handling

In PID ¶ 1326(a) we also required that ". . . whenever Unit 1 fuel movements are in progress, the engineered safety feature filtration systems for Unit 1 will be in operation." Because of a potential need for prompt relief from the literal and unforeseen reach of this order the Licensee filed a separate motion on March 12 seeking clarification of its limits. We divided Licensee's motion into its pre-restart and post-restart aspects, and on March 23 we clarified the order to exclude pre-restart engineered safety feasures (ESF) filtration as a Board requirement on jurisdictional and safety grounds. We now rule on the remaining aspects of the Licensee's motion.

Licensee makes three additional requests for changes in the Board's fuel handling order. First, we are requested to clarify that the ESF filter system need only be "operable", rather than "in operation" during fuel movements because actual operation of the ESF filter system is initiated only during accident conditions. The Staff agrees (March 25 answer) and explains that it supports Licensee because the final design of an ESF filter system that is to be merely "operable" during fuel movements and put into operation only upon the occurrence of a fuel handling accident, rather than "in operation" during fuel movements, must include provisions for its automatic actuation by a safety grade actuation system that

senses an appropriate signal and automatically actuates the ESF filter system. The Staff also notes that rewording the license condition as the Licensee requests would permit the condition to be satisfied by a final ESF filter system design that does not include such an actuation system if the ESF filter system is required to be in operation during TMI-1 fuel movements by either the technical specifications or the operating procedures.

The Board verified in a telephone conference on March 26 that the Licensee agrees that the Staff's characterization is accurate. On this basis we clarify our order accordingly. We use the term "clarify" intentionally although it might appear that Licensee's request was for reconsideration. This is because we would view an "operable" ESF filter system with provisions for automatic safety grade actuation to be, for practical purposes, in "operation" even though no filtration is actually demanded and performed at the time. In any event, the condition proposed by the Licensee satisfies the Board's original concern.

Second, Licensee wishes it clarified that the ESF filter system need be operable only when fuel is in transit within the fuel handling building because the system would serve no purpose when fuel movements are confined to the reactor building. Third, Licensee points out that the condition should not apply to fresh unirradiated fuel. Both of these requests reflect the intent of the original order and are appropriate for clarification. The following condition proposed by Licensee, and approved by the

by the Staff, resolves all areas of fuel-handling clarification and is approved:

> After the restart of Unit 1 and prior to the movement within the Unit 1 fuel handling building of any irradiated Unit 1 fuel, Licensee shall install, and have operable, an engineered safety features (ESF) filtration system for the Unit 1 fuel handling building. The ESF filtration system for Unit 1 shall be operable whenever irradiated Unit 1 fuel is moved within the Unit 1 fuel handling building.

Items That are Not Licensee Conditions

We directed the Staff to report how it intends to be assured that the Licensee will abide by any items the Staff does not plan to impose as license conditions or how it intends to be assured that the Licensee will seek relief from such items in an appropriate manner. PID ¶ 1217. The Staff reported:

> The Staff does not propose to implement any special enforcement procedures for TMI-1 after restart. The normal enforcement procedures relied on by the Staff to assure compliance by all Licensees with items not specifically addressed in Technical Specifications or other license conditions will be relied on by the Staff to assure that the Licensee for TMI-1 operates TMI-1 safely [unless otherwise required by the initial decision].

Report at 9.

We have since discussed this matter on the record with the interested parties and the Staff informs the Board that it does not intend to exclude from its TMI-1 restart implementation program any special inspections or

verifications required or depended upon by the Board with respect to requirements which did not rise to the level of license conditions or technical specifications. Tr. 27,015-19.[5/] With this understanding we approve the Staff's report with respect to items which are not license conditions or technical specifications. We will add then the following language (as it appears in brackets above) to the end of the Staff's statement:

". . . unless otherwise required by the initial decision."

References to Partial Initial Decision

Licensee requests that the Staff be directed to retain the parenthetical references to the partial initial decision and/or the evidentiary record which accompanies the items listed in the Staff's report. The purpose is to ensure that future questions about any condition can be resolved in the relevant context. We agree that this is appropriate -- the Staff did not comment on this request. Moreover we would expect that

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5/ TMI-1 restart project manager, Mr. Jacobs, stated that the Staff reviewed the initial decision for this purpose. While the project manager cannot recall whether the Staff identified anything specifically related to inspection following restart, he believes that the Staff would have captured any such requirement and that a special inspection required by the Board was not intended to be included in the phrase "normal inspection procedures". Tr. 27,018 (Jacobs). The Board itself is not aware of any special verification required to be performed outside the subject matter covered by license conditions. Our modification is a precaution against any oversight.

any dispute would be discussed against the relevant background of the entire decision and relevant Board orders.

ORDER

As modified above, the Board adopts the Staff's implementation report of February 1, 1982 as the Board's order in this proceeding. It is appealable. For review purposes it should be treated as a Supplement to the Partial Initial Decision of December 14, 1981. Within ten days after service of this Order any party may take an appeal to the Appeal Board by filing exceptions to all or portions of it. A brief in support of the exceptions shall be filed within thirty days thereafter or within forty days in the case of the Staff.

THE ATOMIC SAFETY AND
LICENSING BOARD

Walter H. Jordan by l.s.
Walter H. Jordan
ADMINISTRATIVE JUDGE

Linda W. Little by l.s.
Linda W. Little
ADMINISTRATIVE JUDGE

Ivan W. Smith, Chairman
Ivan W. Smith
ADMINISTRATIVE LAW JUDGE

Bethesda, Maryland

April 5, 1982