09/10/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
CONSUMERS POWER COMPANY	)	Docket Nos. 50-329 OL
	)	50-330 OL
(Midland Plant, Units 1 and 2)	)	

NRC STAFF'S RESPONSE TO CONTENTIONS OF
INTERVENOR MARY SINCLAIR RESUBMITTED AFTER DISCOVERY

INTRODUCTION

On October 31, 1978, Intervenor Mary Sinclair submitted contentions in this proceeding. In a Special Prehearing Conference Order dated February 23, 1979, the Board ruled on those contentions. Contentions 13, 24, and 27 were accepted.[1/] Contentions 6 and 7 were rejected subject to resubmission after discovery. Contentions 28-57 were accepted for discovery purposes only with the understanding that they would be rewritten after discovery. The rest were rejected.

On June 18, 1982, Ms. Sinclair submitted discovery on Contentions 6, 7, 27-57. Except for contentions 6, 27, 29, 34, 37, 43, 44, 51, and 57, discovery was completed on July 28, 1982. Pursuant to a Board Order dated May 7, 1982, contentions for which discovery was completed were to be rewritten by August 12, 1982. At the prehearing conference on

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1/ For these contentions, the Staff is using the numbering system adopted in the "NRC Staff Partial Responses to Interrogatories Submitted by Intervenor Sinclair to the NRC Staff on June 18, 1982," dated July 28, 1982. At the Prehearing Conference, on August 12, 1982, the Board dismissed Contention 13.

August 12, 1982 Ms. Sinclair submitted nine revised contentions based upon completed discovery. Contentions for which discovery was completed, but which were not rewritten are dropped. Except for discovery based on Contention 27 (already admitted into this proceeding), all discovery based upon Ms. Sinclair's October 31, 1978 contentions was completed on September 3, 1982. Revised contentions based upon discovery not completed as of July 28, 1982 are due on September 20, 1982. The following is the Staff's response to the revised contentions submitted by Ms. Sinclair on August 12, 1982.

DISCUSSION

Contention 28

Contention 28 deals with the water hammer problem of pressurized water reactors of the Midland type. This problem is identified as one of the unresolved safety issues applicable to Midland 1 & 2 in the SER, C-4. Babcock and Wilcox(B&W) plants with an internal auxiliary feedwater (AFW) feed ring of the same design as Midland in recent events, have shown a marked susceptibility to internal damage of the feed ring as a result of water hammer. From this, reduced cooling in the steam generators could occur as a result of inadequate AFW flow following loss of normal feedwater flow. (NRC Response to Interrogatory 7) Since this effect involves critical safety sytems, the Task A-1 report (Jan., 1980) states that systematic review procedures in the OL review process will require the Applicant to : 1) address potential water hammer problems in various sytems; 2) demonstrate that there are adequate design features and operating procedures to prevent damaging water hammer events; and 3) expand the preoperational testing program to insure that these design features and operating procedures do prevent damaging water hammer events.

However, the SER does not indicate that these criteria have been met by the Applicant. As a result of this omission, the findings required by 10 CFR §§50.57(a)(3)(i) and 50.57(a)(6) cannot be made.

Response to Contention 28

The staff does not object to this contention.

Contention 30

The degradation of steam tube integrity due to corrosion induced wastage, cracking reduction in tube diameter, and vibration induced cracks is a serious unresolved safety problem at the Midland nuclear plant. It is admitted that the chemistry of the cooling water is critical to prevention of steam tube failure, (NUREG-0886). However, the fact that these plants depend on cooling water from the cooling pond increases the likelihood of corrosion and poor water chemistry because the DEIS states that the plant dewatering system will first be discharged to the cooling pond. (DEIS at 5-2). That means that many wastes, including radioactive materials from leaks and spills on the reactor site, can enter the cooling pond and disrupt the chemistry of the pond. Therefore, due to this contribution of an undertermined amount and quality of ground dewatering inflows to the cooling pond, the NRC's bland assurance that corrosion is unlikely due to the lack of sodium thiosulfate, is unsatisfactory. (NRC Response to Interrogatory 9.j.) In fact, due to the contribution of groundwater, the NRC is not fully aware of the likely constituents of the cooling pond, and the findings required by 10 CFR §§ 50.57(a)(3)(i) and 50.57(a)(6) cannot be made.

Response to Contention 30

The staff does not object to this contention.

Contention 31

Numerous non-safety related systems, the feedwater system, main stream [sic]system, makeup and pernification [sic]system, non-vital electrical power systems, and the integrated control systems, can adversely affect safety related systems, such as Anticipated Transients Without Scram (ATWS). (NRC Response to Interrogatory 10.c) Since there has been no routine inspection and quality control standards applied to these non-safety systems, and the general quality control during construction of even safety related systems has been so poorly done (amply documented in the record of these hearings), there is an even greater probability of ATWS at Midland. However, this scenario has not been analyzed in the SER. Furthermore, B&W reactors, such as the Midland reactors, experience the largest pressure rise and thus are the most difficult to modify to achieve adequate safety margins to prevent ATWS events. (NUREG-0460, April, 1978, p 46) Therefore, the findings required by 10 CFR §§ 50.57(a)(3)(i) and 50.57(a)(6) cannot be made.

Response to Contention 31

Applicant opposes admission of this contention primarily on the authority of Potomac Electric Company (Douglas Point Nuclear Generating Station), ALAB-218, 8 AEC 79 (1974). (See Applicant's response pp. 2-3).

Staff points out that there are current regulatory requirements relating to ATWS. See for example § 15.8 of the Standard Review Plan. (NUREG-0800). Douglas Point does not remove from licensing proceedings issues of compliance with existing regulatory standards relating to the same subject matter as the rulemaking, unless there is a Commission directive to the contrary. Thus, to the extent that this contention relates to compliance with existing requirements it is admissible.

Contention 32

There is no assurance that suitable safety margins can be maintained throughout the design life of the Midland plant with the materials used for reactor vessel fabrication. This makes the Midland reactors unusually susceptable to reactor embrittlement and to pressurized thermal shock (PTS). For example, an investigation following the severe PTS at the Rancho Seco reactor indicated that the limiting material in the Rancho Seco reactor vessel was fabricated using the same weld wire and flux as the limiting material in the Midland reactor vessel beltline and has equivalent chemical composition and fracture toughness properties. This indicates that the staff's conclusions concerning the Rancho Seco reactor vessel beltline materials are applicable to the Midland Unit 1 reactor vessel beltline materials. (NRC Response to Interrogatory 11.e) Furthermore, in a memorandum to the Midland file, dated June 14, 1977, by G.S. Keeley of Consumers Power Co. and sent to S. H. Howell, et al., described a memorandum which A. J. Birkle had written to R. C. Bauman on March 22, 1977, on the status of Midland NSSS-12 reactor vessel girth weld fracture toughness. (Discovery Response, Consumers Power Co.) This memorandum pointed out that there was a chance that the NSSS-12 reactor vessel could have a low level of fracture toughness at the operating temperature after 10 years of operation. The low level was with reference to the 50 ft-lb upper shelf criteria of 10 CFR 50, Appendix G & H. It also indicated that this could possibly be corrected by annealing the vessel which is not now a viable approach although an EPRI R&D effort is underway." Moreover, Demetrias Basedekas, NRC reactor safety engineer, in a memorandum addressed to Chairman Palladino (NRC Response to Interrogatory 11.a) mace the following major points which emphasize the importance of this deficiency concerning PTS:

> "Substantial uncertainties and non-conservative assumptions in estimates of consequences and of probabilities cast serious doubts on the validity of conclusions stated by industry and the NRC staff.

> The lack of badly needed design information on control and electrical power systems, and related neutronic and thermal-hydraulic parameters for representative plants (at least one for each NSSS vendor) makes an independent and thorough assessment of this issue by NRC virtually impossible.
>
> Substantial operation experience with PTS precursor events involving control system and steam generator tube failures, coupled with an understanding of functional and some design aspects of control systems and components in operating plants, suggest an unacceptable level of risk associated with a number of unacceptable level of risk with a number of older pressurized water reactors."

These points, as well as the fact that the Midland nuclear plants were designed over a decade ago, and contain the same defective material as the Rancho Seco nuclear plant means that findings required by 10 CFR §§ 50.57(a)(3)(i) and 50.57(a)(6) cannot be made.

Response to Contention 32

In revised Contention 32 Intervenor Sinclair alleges that there is no assurance that suitable safety margins can be maintained throughout the design life of the Midland plant with the materials used for reactor vessel fabrication. She claims that this makes the Midland reactors unusually susceptible to reactor embrittlement and to pressurized thermal shock (PTS). Ms. Sinclair then sets forth more than a page of factual support for her contention. The NRC staff does not object to this contention except for the portion which quotes Demetrias Basdekas. The staff submits that the quoted material lacks specificity and is not relevant to the contention.

Contention 35

Assurance of pressure vessel integrity and the ability to detect and adequately size flaws depends, for one thing, on carefully controlling the fabrication, welding and examination of welds to minimize the probability of significant weld defects. The affidavits secured by the Government Accountability Project and recently turned over to NRC, especially that of Dean Dartey and one of the anonymous workers,

describes extensive failures in welding. (Midland Daily News, July 20, '82) Therefore, the findings required by 10 CFR §§ 50.57(a)(3)(i) and 50.57(a)(6) cannot be made.

Response to Contention 35

The staff opposes this contention. The statement that "[t]he affidavits secured by the Government Accountability Project and recently turned over to NRC, especially that of Dean Dartey and one of the anonymous workers, describe extensive failures in welding" does not provide the requisite specificity. Ms. Sinclair has not specified whether she is referring to the anonymous six affidavits or to the documents turned over to the NRC by letter to Chairman Palladino on July 26, 1982. On this basis alone, the staff is unable to determine the nature of the "extensive failures in welding" which might lead to problems with pressure vessel integrity. Assuming this contention refers to the July 26 submittal, those affidavits provide no basis for this contention. None of the allegations, including Dean Dartey's, deals with welding done for pressure vessels.

The breakdown of quality assurance at Zack is the basis of Sinclair Contention 6 which has been admitted into this proceeding and will be litigated. These affidavits - assuming they are the ones to which Ms. Sinclair is referring - do not, however, provide the requisite particularity for this contention.

Contention 36

Systems interactions, identified as an unresolved safety problem applicable to Midland in the SER (C-4), has special significance at Midland because the most serious accident resulting from systems interaction failures have occurred in B&W reactors. The serious events and their special problems with system interaction include the following:

1) The persistant operator disbelief of high temperature data from incore thermocouples and system RTD's was one major, out of many, causes for the TMI-2 accident. This disbelief was based on the rationale that the former were not safety-grade equipment while the latter were outside the calibrated range of the detectors. (NUREG-0600, p 10, and "Daniel Ford, Three Mile Island, Thirty Minutes to Meltdown") In the case of the high temperatures, acceptance of the temperature data as valid might have prompted a higher high-pressure-injection flow rate and a reluctance to subsequently depressurize the plant to use the core flood tanks. (NUREG-0600, p 11) This is one example of non-safety related equipment impacting on safety systems.

2) At Crystal River, an accident on February 26, '80, is of interest because of systems interaction where the integrated control system input, the PORV positioning, the instruments used for manual control of ECCS and the entire non-nuclear instrumentation (NNI) power supply depended on one 24 VDC line within the NNI power supply system. (NUREG-0667)

3) At Davis-Besse I on April 19, 1980, maintenance activities allowed an elimination of redundant power supplies that were supporting the decay heat removal function. Concurrent construction activities cause the loss of working power supply and subsequently decay heat removal was lost for over two hours. (USNRC IE Information Notice 80-20, May , 1980) (NRC Response to Interrogatory 15.e)

In spite of this repeated history of system interaction problems at B&W reactors, the staff SER specifically fails to require a comprehensive program to reportedly evaluate all sysems which could interact. (SER at C-12.) Moreover, the apparent use of non-safety grade materials for safety grade functions at Midland significantly increases the risk of adverse system interactions. (Howard affidavit).

Response to Contention 36

The staff objects only to the last sentence of this contention, which states that "the apparent use of non-safety grade materials for safety grade functions at Midland significantly increases the risk of adverse system interactions." Ms. Sinclair cites the "Howard affidavit" as support for this part of the contention. That affidavit is twenty-seven pages long. Mere reference to the document, without more, does not provide sufficient particularity. The Staff is still left to

guess as to where Ms. Sinclair believes that the use of non-safety grade materials might lead to adverse systems interaction and why she feels that way. Also, the Howard affidavit is the subject of Sinclair Contention 6 and will, therefore, be litigated.

Contention 40

Contention 40 deals with lack of adequate qualification methods to satisfy the requirements for safety related equipment.

Contrary to NRC Response to Interrogatory 19 (a), a Commission decision in the UCS Petition for Emergency and Remedial Action (CLI-80-21, May 27, 1980), 11 NRC 707, requires that all plants under licensing review must meet the equivalent of the IEEE 1974 Standard in order to satisfy GDC 4 (10 CFR 50, Appendix 4). In fact, the SER admits that this standard has not been met. (SER p 3-36) Thus, absent further action, the findings required by 10 CFR §§ 50.57(a)(3)(i) and 50.57(a)(6) cannot be made.

Response to Contention 40

Before discussing the admissibility of this contention, the staff notes that Ms. Sinclair has misconstrued the staff's response to her interrogatory 19(a). All that response said is that Midland is not required to meet IEEE Standard 323-1974. It did not say, as Ms. Sinclair alleges, that Midland is not required to "meet the equivalent of the IEEE 1974 Standard." When Ms. Sinclair speaks of the "equivalent" of the IEEE 1974 Standard, as required by Petition for Emergency and Remedial Action, CLI-80-21, 11 NRC 707 (1980), she is apparently referring to NUREG-0588. The decision noted that NUREG-0588 was designed to offer guidelines which "provide a level of confidence essentially equivalent to that which would be achieved from the application of IEEE 323-1974" 11 NRC at 711. However, NUREG-0588 is not the same as IEEE 323-1974. Accordingly, the staff's response to interrogatory 19(a) is correct. Indeed, the staff's

response to interrogatory 19(c) specifically stated that "[t]he Category II positions of NUREG-0588 in conjunction with IEEE 323-1971 specifies the current requirements" for electrical equipment at Midland. A copy of NUREG-0588 was sent to Ms. Sinclair.

Turning to the admissibility of the contention, it does not offer a litigable issue. All it does is make a blanket statement that because environmental qualification is still an open item, the requisite findings of safety cannot be made. The fact that an item is open does not relieve Ms. Sinclair from the responsibility to supply the requisite particularity. For this contention to be admissible, Ms. Sinclair would have to have specifically alleged what she felt was wrong with the Midland environmental qualification program. The parties would then have been on notice as to what they were to litigate. The applicant's EQ program has been a matter of public record since November 1981. (SER, p. 3-36.) Ms. Sinclair, accordingly, had ample opportunity to offer a concrete, litigable contention based upon CPC's environmental qualification program. This contention, however, offers no litigable issue and, hence, is inadmissible.

Contention 45

There is no assurance that offsite power is sufficiently reliable to ensure the maintenance of safety functions during accident conditions. In one of the anonymous GAP affidavits, an electrician described the poor quality control that has gone into the electrical work at the Midland nuclear plant. He stated that the cables shop substituted control cables when the correct type was unavailable. He explained that a cable design may have called for three shielded pairs of 16-guage wire but the cable shop in which he worked would use six stranded 16-guage wire with the shielding around the entire bundle. (Midland Daily News, June 28, 1982)

These types of electrical cable deficiencies built into many parts of the plant do not comply with the General Design Criteria, therefore the findings required by 10 CFR §§ 50.57(a)(3)(i) and 50.57(a)(6) cannot be made.

Response to Contention 45

In revised Contention 45 Ms. Sinclair alleges that there is no assurance that offsite power is sufficiently reliable to assure the maintenance of safety functions during accident conditions. She then claims that in one of the anonymous GAP affidavits an electrician describes the poor quality control that has gone into the electrical system "at the Midland Nuclear Plant". The staff objects to this contention because it is not clear. The first sentence alleges a problem with offsite power and subsequent information appears to relate to a problem with electrical work at the site itself. If the claim is that the failure of on-site control cables would preclude assurance of offsite power, the staff submits that would not support an allegation concerning the reliability of offsite power.

Contention 50

The occupational exposure of regular workers or transient workers at the Midland nuclear plant cannot be controlled as the NRC Response to Interrogatory 29(a) states, because of the extensive quality control failures that the disclosures of Zack Co. employees and Dean Dartey indicate have been built into the heating, ventilating and air conditioning system at the Midland nuclear plant. Therefore, the findings required by 10 CFR §§ 50.57(a)(3)(i) and 50.57(a)(6) cannot be made.

Response to Contention 50

This contention lacks particularity. Except for Dean Darty, Ms. Sinclair has not indicated the Zack employees to which she is referring. There have been many affidavits containing disclosures, both

confidential and non-confidential, given to the NRC. We are left to guess as to what quality control failures Ms. Sinclair is referring and why she believes they will lead to increased occupational exposures. The staff, therefore, opposes this contention.

Contention 52

The reliability of the emergency onsite diesel generator at Midland is seriously in question. The NRC staff has stated that: "The excessive settlement and cracking of the diesel generator building due to improperly compacted soil can seriously and adversely affect diesel generator performance since this can cause excessive differential movement between diesel generator and building foundations." (NRC Response to Interrogatory 31.d) Also there is concern at Midland for damaging fuel oil and service water lines entering and exiting the building. Therefore, the findings required by 10 CFR §§ 50.57(a)(3)(i) and 50.57(a)(6) cannot be made.

Response to Contention 52

Ms. Sinclair claims that the reliability of the emergency onsite diesel generator is serously in question. The staff response to Interrogatory 31.d. is cited for the following quotation: "The excessive settlement and cracking of the diesel generator building due to improperly compacted soil can seriously and adversely affect diesel generator performance since this can cause excessive differential movement between diesel generator and building foundations." The staff has not been able to find that quotation within the response to Interrogatory 31.d. Ms. Sinclair also alleges that there is concern at Midland for damaging fuel oil and service water lines entering and exiting the building. In the staff's response to Interrogatory 31.d. it is stated that there has been a concern regarding diesel generator building settlement and the associated potential for damaging fuel oil

and service water lines entering and exiting the building. It is also stated, however, that the diesel generator building settlement will not impair the structural integrity and functional capability of the underground diesel fuel oil and service water lines entering and exiting the diesel generator building.

The staff objects to this contention. The factual basis given by Intervenor for the first part of the contention is a quote from the staff's response to Interrogatory 31.d. That quote does not appear anywhere in the Staff's response to Interrogatory 31.d. The fact that this quote does not appear in the staff's response to Interrogatory 31.d. was discussed on the record (Tr. 8481-84).

The factual basis for the second part of Contention 52 ignores the resolution of the problem which is also contained in staff response to Interrogatory 31.d. Although the Board does not consider the merits of contentions at this stage, this part of Contention 52 should also be denied because the only source of information on the issue shows the issue to be resolved.

Respectfully submitted,

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Dated at Bethesda, Maryland
this 10th day of September 1982

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
CONSUMERS POWER COMPANY	)	Docket Nos. 50-329
	)	50-330
(Midland Plant, Units 1 and 2)	)	(Operating License Proceeding)

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF'S RESPONSE TO CONTENTIONS OF INTERVENOR MARY SINCLAIR RESUBMITTED AFTER DISCOVERY" in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class, or, as indicated by an asterisk through deposit in the Nuclear Regulatory Commission's internal mail system, this 10th day of September 1982:

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