UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

Before the Atomic Safety and Licensing Board

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

INTERVENOR MARY SINCLAIR'S RESPONSE TO APPLICANT AND NRC STAFF RESPONSES TO HER REVISED CONTENTIONS

Oct. 4, 1982

Intervenor Mary Sinclair, in accordance with this Board's Memorandum and Order of September 17, 1982, submits the following response to Applicant and NRC Staff Responses, submitted September 3 and September 10, respectively, to her revised contentions. The Board, in that order, accepted Revised Contentions 28 and 30.

CONTENTION 31

> Numerous non-safety related systems, the feedwater system, main stream system, makeup and pernification 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 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.

Applicant opposes admission of this contention primarily on the ground that the design requirements necessary to prevent or mitigate ATWS events at B&W reactors is the subject of pending rulemaking proceedings. (Applicant's Response at 2-3). The Staff answers that current NRC requirements regarding ATWS can be litigated and that it does not oppose litigation of this contention limited to applicant's compliance with existing regulations.

Intervenor stipulates to limiting Contention 31 to litigation of applicant's compliance with existing requirements.

As further basis for this contention, intervenor refers this Board and all parties to Board Notification no. 82-75, dated August 9, 1982, and served on all parties on September 29, 1982, which states that the results of a study by the Oak Ridge National Laboratory on precursors to potential severe core damage accidents, NUREG/CR-2497, estimated the probability of a serious accident based on potential accident precursors occurring at operating reactors to be much higher than previously estimated.

CONTENTION 32

Reactor Embrittlement and Pressurized Thermal Shock

Both applicant and NRC staff object only to that portion of the contention including a quotation of memorandum by Demetrias Basedekas. Since that quotation is not specific to Midland, Ms. Sinclair agrees to amend her contention to exclude that sentence. Her admitted Contention 32 will then be identical to the contention as filed except for deletion of the next to last sentence and of the quoted portion of the Basedekas memorandum.

CONTENTION 35

Ms. Sinclair will withdraw Contention 35, after considering the objections of applicant and NRC Staff.

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 migh 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, 1980, 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 no-nuclear instrumentation (NNI) power supply depended on one and 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 caused the loss of working power supply and subsequently decay heat removal was lost for over two hours. (USNRC IE Information Notice 80-20, May 8, 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 systems 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).

Applicant objects on to the last two sentences of this contention on systems interaction, on the basis that the Howard affidavit will be considered at another point in this litigation and that intervenor has not demonstrated how the SER points out with specificity any deficiency in the applicant's systems interactions study.

NRC Staff objects only to the last sentence ot the contention on the ground that Ms. Sinclair has not pointed out specific parts of the Howard affidavit which demonstrate that use of non-safety grade materials for safety-grade functions at Midland can lead to adverse systems interactions.

Mr. Howard, on pages 11, 12, 13, 16, 17, and 18 of his affidavit, describes how Zack vendors supplying safety-grade material to Midland did not, and could not, qualify as approved vendors to supply material to nuclear sites, and that orders which should have been purchased as "safety-related" were not in fact purchased as "safety-related" and were therefore not handled through a verification and testing program.

If non-safety-grade material is used for essential or safety systems in the plant, it may not withstand or mitigate accident conditions in the event of a serious accident at Midland. Consequently, non-safety

systems may have to be employed to mitigate accident conditions or handle the functions that these safety systems are unable to handle because they are built with nonconforming materials. The extent to which nonconforming materials were used and their potential for failure are issues to be defined in discovery. The basis for the contention, however, is clearly established.

Further, the S states clearly that "Consumers Power Com..pny has not described a comprehensive program that separately evalu tes all structures, systems, and components important to safety for the three categories of adverse systems interactions...." SER at C-12. The Staff has not objected to the penultimate sentence in Contention 36 and therefore, the Staff implicitly agrees that this statement in the SER supports the contention as written.

Therefore, intervenor requests that the Board admit Contention 35 in full as stated above.

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.

Applicant objects to admission of Contention 40 because it believes litigation of the contention requires determination of a question of law. NRC Staff objects to admission of this contention on the ground that Ms. Sinclair does not state specifically the respects in which she finds applicant's environmental qualification program deficient.

First, Ms. Sinclair is not making a legal challenge. Instead, her contention contests the applicant's ability to meet the current requirements for environmental qualification of safety-related equipment as summarized in NUREG-0588 and IEEE 323-1971.

The SER states clearly that applicants have not provided the staff with adequate information to enable the staff to evaluate applicant's environmental qualification program. In light of the fact that the Staff itself does not currently have adequate information to analyze comprehensively the EQ program, and does not examine the program in the SER, intervenor certainly cannot be expected to point out at this early stage of the litigation each and every deficiency in the EQ program. Because the applicant maintains the burden of demonstrating that it meets current NRC requirements, and because the Staff has admitted that it cannot evaluate the applicant's EQ program at this time, it follows logically that applicant has not demonstrated that its EQ program meets current NRC requirements regarding environmental qualification of safety- related equipment as required by CLI-90-21, 11 NRC 707 (1980).

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-gauge 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.

Applicant objected to Contention 45 on the ground that it fails to state with reasonable specificity how deficiencies in control cables can cause a loss of offsite power. The Staff objects to the contention on the ground that the contention is unclear, apparently on the basis that poor electrical work on the site cannot affect the reliability of offsite power. However, there is ample basis in their record and in generic NRC analyses to establish that electrical malfunction can indeed result in a loss of offsite power. Upon the information currently available to the parties, the confidential GAP affidavits and the Zack affidavits submitted to the NRC, poor quality control practices are evident at Midland which may affect adversely electrical equipment installed at the Midland site. Moreover, Inspection Report 81-23, July 26, 1982, discussed numerous other problems with electrical systems at Midland which had not been detected by applicant's quality assurance program. These

problems included conductor insulation cracking at module-conductor interfaces; cracks in the module opoxy insulation; inadequate crimping by use of improperly-sized lugs; improper crimping; loose terminations, and use of the wrong crimp; butt splices improperly crimped which could be easily pulled apart and were covered with questionable insulation; and loose coaxial cable connections. Therefore there is currently available sufficient evidence that electrical equipment and installation may have been, and continue to be, defective at the Midland site.

Moreover, events taking place at Palisades and Big Rock, described in NUREG/CR/2497, "Precursors to Potential Severe Core Damage," June, 1982, demonstrate that defective on-site equipment can cause loss of offsite power. This repost describes seven events that are considered precursors to severe core damage in which electrical malfunctions due to faulty equipment on the plant site were responsible in whole or in part for loss of offsite power. (Applicant's Response to Interrogatory 1, Contention 3 of the New Contentions accepted by Board Order, August 14, 1982)

Further, the FES(at 4-18) states that there will be more than usual snow and icing on elevated objects such as power lines at Midland due to fogging from the cooling pond, which can cause line breaks. At Big Rock, a severe storm caused "galloping conductors" in which line faults occurred as lines moved relative to one another. In addition, the two start-up transformers that are supposed to provide redundant, independent sources of offsite power to the 4160-VESF buses of both Units 1 and 2 share a common corridor near the Midland plant

(SER 8-4). They could be affected similarly by heavy icing due to the fog from the pond.

Given this extensive awareness of the link between improper electrical equipment and the loss of offsite power, the objections of applicant and Staff are simply not credible. The contention should be admitted.

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.

Applicant does not oppose Contention 50. Staff opposes this contention on the basis that except for Dean Dartey, Ms. Sinclair has not indicated which Zack employees have disclosed quality control failures relevant to the contention, and that she has not specified the quality control failures which can lead to increased occupational exposures.

The Staff's arguments are without merit. Ms. Sinclair has clearly identified the basis of the contention, its relevance and the general theory. Any additional particularity can be addressed through discovery. Examples of the type of discoverable information are the affidavits of Albert Howard, Sharon Marello, and Charles Grant, III, which demonstrate the widespread quality control failures at Midland. Moreover, page 8 of Ms. Marello's affidavit states clearly the type of exposure hazards which may arise because of quality assurance failures

relating to HVAC systems. The two problems cited by Mr. Marello, however, must be seen as illustrative and not comprehensive.

The contention, therefore, should be admitted.

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.

Applicant objects to this contention on the ground that it lacks specificity and basis, and the unreliability of the diesel generators at Midland due to soil settlement problems will be litigated in the OM proceeding. Staff objects to this contention, largely on the basis that although it believes that soil settlement problems may adversely impact on the diesel generator building and fuel oil and service water lines entering and exinting the diesel generator building, it also believes the problem can be resolved. (NRC Response to Interrogatory 31.d)

Intervenor explained clearly in the August 11 and 12, 1982 Prehearing Conference, that she mistakenly placed quotation marks in the second sentence of the contention. Nonetheless, the Staff's literal Response to Interrogatory 31.d does provide a sufficient basis for this contention. The NRC Staff Response is: "Diesel generator

performance, in general, is not affected by the structure in which it is located, except for extremes such as total building failure, excessive differential movement between diesel generator and building foundations, or improper design of combustion air intake and exhaust systems." Since there has been extensive settlement and cracking of the diesel generator building due to improperly compacted soil, the Staff response indicates that the performance of the diesel generator may can be expected, under these circumstances, to be adversely affected. Thus, extensive settlement and cracking is the equivalent of the "excessive differential movement between diesel generator and building foundations," cited in the Staff Response.

The Staff's argument that review in the SER resolves all problems with cracking and settlement of the diesel generator building is not assuring in light of the testimony of Dr. Charles Anderson to the ACRS on May 20, 1982, that secondary settlement has not yet occurred. Since secondary settlement has not occurred, it has not been considered by the staff and cannot have been fully evaluated.

Intervenor believes, however, that if all issues regarding the reliability of the emergency onsite diesel generator are litigated fully in the OM proceeding, there would be no need to litigate Contention 52 in this OL proceeding.

Respectfully submitted,

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Attorney for Mary Sinclair

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