



Consumers  
Power  
Company

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February 17, 1983

Harold R Denton, Director  
Office of Nuclear Reactor Regulation  
Division of Licensing  
US Nuclear Regulatory Commission  
Washington, DC 20555

MIDLAND ENERGY CENTER PROJECT  
MIDLAND DOCKET NOS 50-329, 50-330  
RESPONSE TO NRC EVALUATION OF PART I  
SUBMITTAL FOR THE CONTROL OF HEAVY LOADS - NUREG-0612  
FILE 0963 SERIAL 19377

References (A) J W Cook Letter to H R Denton, Serial 14928, Dated 12/21/81  
(B) J W Cook Letter to H R Denton, Serial 15979, Dated 02/26/82  
(C) NRC Letter Thomas M Novak to J W Cook, Dated 08/16/82

Enclosure (1) CP Co Responses to NRC/EG&G Evaluation of Midland Part I  
Heavy Load Submittal

References A and B submitted Parts I and II responses for the control of heavy loads at the Midland Plant. Reference C forwarded to CP Co the NRC/EG&G draft technical evaluation report (TER) on our Part I response.

In accordance with Reference C, a telephone conversation was held on October 1, 1982 to resolve the open items listed in the TER. Enclosure 1 documents the open items, the CP Co position on these items and some additional NRC/EG&G concerns discussed during the conference call.

Our target date for submitting the followup information committed to in Enclosure 1 is April 15, 1983. When this information is submitted, CP Co believes that the TER open items will have been satisfactorily addressed and the Staff can complete their review and issue a final TER and a final safety evaluation report on this subject.

*James W. Cook*

JWC/PEP/fms

CC RJCook, Midland Resident Inspector  
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CONSUMERS POWER COMPANY  
Midland Units 1 and 2  
Docket No 50-329, 50-330

Letter Serial 19377 Dated February 17, 1983

At the request of the Commission and pursuant to the Atomic Energy Act of 1954, and the Energy Reorganization Act of 1974, as amended and the Commission's Rules and Regulations thereunder, Consumers Power Company submits our responses to the NRC/EG&G draft technical evaluation of the Midland Part I Heavy Load Submittal.

CONSUMERS POWER COMPANY

By J W Cook  
J W Cook, Vice President  
Projects, Engineering and Construction

Sworn and subscribed before me this 14 day of February, 1983

Barbara Brown  
Notary Public  
Jackson County, Michigan

My Commission Expires September 8, 1984

CP CO RESPONSE TO NRC (EG&G)  
EVALUATION OF MIDLAND UNITS 1 & 2 HEAVY LOAD SUBMITTAL - PART I

Listed below are the NRC/EG&G evaluations of the Midland Part I Heavy Load submittal and the CP Co position on these evaluations. Additional NRC concerns discussed in the 10/1/82 conference call and the CP Co positions on these concerns are also documented.

Conference Call Participants:

| <u>NRC</u>  | <u>EG&amp;G</u> | <u>CP Co</u>    |
|-------------|-----------------|-----------------|
| R Hernan    | B W Dixon       | T A Buczwinski  |
| F Clemenson | T H Stickley    | K M Haas        |
|             |                 | P E Papaioannou |

I. Safe Load Paths

A. Evaluation - Develop methods for marking each safe load path.

Position - Due to containment layout, permanent or temporary markers are not feasible. Safe load paths in containment ensure no lifts over an open reactor vessel. This can readily be accomplished without marking. In the auxiliary building, the analyzed load paths are over the structural members of the refueling level (elevation 659'). Since these structural members are not visible from the refueling level they will be located by paint markings on the refueling level floor.

B. Evaluation - Ensure that deviations from the defined paths require written alternatives approved by the appropriate personnel.

Position - The heavy load procedure will specify a load path. Changes to load path will require a revision to the procedure. Revisions will have the same approval as the original document.

C. Additional NRC/EG&G Concerns (From 10/1/82 Conference Call)

1. With no safe load path marking in containment how will CP Co ensure load path will be followed?

Position - The load path will be included in the heavy load handling procedure and each person involved with the lift will be thoroughly briefed beforehand. Each heavy load lift will be performed with a minimum of two people: one to operate the crane; the other(s) to direct the operation, man the tag lines, etc. To the maximum extent practical the people moving the load will walk the load to its destination to ensure the load path is followed.

2. Some of the Part I Response load paths are confusing - they do not show the complete path nor the path elevations.

Position - In some instances the complete load path encompasses more than one load path drawing. Part II response, Tables 1 & 2, indicate the load path drawings for all the heavy loads. Each load path drawing shows the load path for a specific elevation. This elevation is specified in the title block of the load path drawing. Part II response also discusses load height limitations for applicable loads in containment and the auxiliary building.

3. Some of the load paths shown are more like load areas not paths.

Position - A safe load path is an area over which a load can safely travel. There is no difference.

4. How will Midland ensure plant modifications do not compromise safe load paths?

Position - The existing modification closeout procedure requires review of all other plant procedures to determine potential impact. If a heavy load procedure is affected it will be revised as necessary.

## II. Load Handling Procedures

- A. Evaluation - When procedures are written and implemented Midland will be in compliance. CP Co should submit to the NRC a confirmation of the implementation of these procedures (prior to handling fuel).

Position - The implementation schedule for heavy load handling procedures will be as follows: for Unit 2 containment - by Unit 2 fuel loads; for the Auxiliary Building - by Unit 2 initial criticality; for Unit 1 containment - by Unit 1 fuel load. This schedule also applies to all of NUREG-0612 Section 5.1.1 requirements.

- B. Evaluation - Retain documentation in a readily accessible file pending possible NRC audit.

Position - Document retention is standard practice.

## III. Special Lifting Devices

- A. Evaluation - The Licensee should address each special lifting device per the following sections of ANSI N14.6-1978: 3.1.1 - 3.1.4; 3.2.1, 3.2.4 - 3.2.6; 3.3.1, 3.3.4 - 3.3.6; 4.1.3 - 4.1.7, 4.1.9; 5.1.3-5.1.8; 5.2.1, 5.2.2; 5.3.1, 5.3.2, 5.3.4, 5.3.6, 5.3.7. In addition, Section 6 should be examined for applicability.

Position - For B&W supplied items-Reactor Vessel Head and Internals Handling Fixture including Turnbuckle Pendant and Sling, Internals Handling Extension, Internals Handling Adapter, Stud Tensioner Sling, New and Failed Fuel Handling Tool and Sling, (Items 1-4, 6), - an engineering evaluation and comparison to the outlined section requirements of ANSI N14.6-1978 will be performed. The evaluation results will be submitted to the NRC. B&W supplied Fuel Transfer Carriage Lift Sling (Item 5) will not be used to handle the carriage. A review of the available documentation on this lift device shows a design safety factor of less than 2. In the past carriage removal was necessary to perform maintenance on the air motor drive. Midland has opted for a cable drive system and therefore we do not foresee any maintenance requiring fuel transfer carriage removal.

For the Bechtel provided lift devices-Quad Sling, Spreader Beam Type 1A and Spreader Beam Type II (Items 7, 8 & 10) - no further action will be taken. These devices will not handle heavy loads over irradiated fuel or safe shutdown equipment. Spreader Beam Type IB (Item 9) is used to handle filter, demineralizer and degasifier plugs. The demineralizer and degasifier plugs are located over safe shutdown equipment but, as pointed out in the Midland Part II Heavy Load Response, there is no scheduled maintenance that requires removal of these plugs. Movement of these plugs is considered extraordinary maintenance and the lift will be handled on a case basis. Midland Part I Response reported a 1.46 safety factor for Spreader Beam IB assembly. Subsequent to the telephone conversation with the Staff, CP Co asked Bechtel to reevaluate Spreader Beam Type IB safety factor. We discovered that plug weights were conservatively estimated and AISC code allowables were used instead of rated material strengths. The reevaluation indicated safety factors of 3 to yield and 5 to ultimate except for the assembly wire ropes. The assembly drawing is being revised to upgrade the wire rope requirements to ensure that the minimum assembly safety factors of 3 and 5 can be achieved. Assembly IB design will be compared to the outlined section requirements of ANSI N14.6-1978 and the results submitted to the NRC.

- B. Evaluation - The comparison of (A) above should incorporate the amended ANSI N14.6-1978 definitions as outlined in NUREG-0612. These are: (a) critical load should be any load when, if dropped, could result in offsite radioactive releases of 25% of 10 CFR 100 guidelines; and (b) the stress design factor should be based on the combined maximum static and dynamic loads.

Position - The amended definitions will be addressed in the comparison of the special lift devices to ANSI N14.6-1978.



C. Additional Discussion (From 10/1/82 Conference Call)

1. The NRC (F Clemenson) suggested that CP Co utilize the methodology provided in CMAA-70 to determine the dynamic loading of a special lift device.

Position - Dynamic loading will be considered when evaluating our special lift devices against NUREG-0612 and ANSI N14.6-1978 criteria. The CMAA-70 or an equivalent method will be used.

IV. Lifting Devices (Not Specially Designed)

- A. Evaluation - For all slings used on heavy load lifts, verify compliance with ANSI B30.9 based on working loads that correspond to the sum of the static and maximum dynamic load.

Position - Working loads of slings used for heavy load lifts will include static and dynamic loads.

- B. Evaluation - Review sling markings and verify compliance with the marking procedures of ANSI B30.9 and NUREG-0612, Section 5.1.1(5).

Position - Sling markings will comply with ANSI B30.9 and NUREG-0612 requirements.

V. Crane Design

- A. Evaluation - The Licensee should submit for review the results of an examination of the design of the filter plug hoist, snubber rigging beams, miscellaneous equipment rigging beam (Unit 2), letdown cooler rigging beam, reactor vessel head studs rigging beam, the shield plugs rigging beam, and the portable crane. These designs should be compared to applicable criteria with the same scope of intent as ANSI B30.2 and CMAA-70.

Position - The portable crane mentioned in the EG&G evaluation does not exist. The snubber rigging beams are not and will not be installed. The remaining devices designs will be reviewed and compared with applicable criteria of ANSI B30.2 and CMAA-70. The results will be submitted to the NRC.