



**Consumers  
Power  
Company**

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April 8, 1982

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



MIDLAND PROJECT  
MIDLAND DOCKET NOS 50-329, 50-330  
RESPONSE TO OPEN ITEMS OF PRELIMINARY DRAFT SER 9.1.4  
FILE: 0505.805 SERIAL: 16599

Reference (a): J W Cook Letter to H R Denton, Serial 14928, Dated 12/21/81

Enclosure (1): Response to Open Item 1 of Preliminary Draft SER 9.1.4.

We have reviewed the preliminary draft section of the NRC Staff's Safety Evaluation Report 9.1.4, "Fuel Handling System." Open Item 2 (heavy loads) is addressed by our Part I Response to the Control of Heavy Loads at Nuclear Power Plants (NUREG-0612) and submitted to the Staff by Reference (a). Enclosed is our response to Open Item 1 (light loads). This response will be included in the next FSAR revision.

With the responses provided by Reference (a) and this letter, we believe the Staff can classify the open items of preliminary draft SER 9.1.4 as confirmatory.

*James W. Cook*

JWC/PEP/fms

CC RJCook, Midland Resident Inspector  
RHernan, US NRC  
OParr, US NRC  
DBMiller, Midland Construction (3)  
RWHouston, Washington

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9.1.4.3.10 Analysis of Cask Drop

The Midland spent fuel cask handling concept incorporates a single-failureproof overhead crane handling system.

The special safety features incorporated into the design of the main hoisting system of the auxiliary building crane precludes a cask drop accident by preventing a load drop in the event of a single failure in the hoisting or breaking systems. Detailed information regarding the design of Midland's single-failure proof main hoist may be found in generic topical reports EDR-1(P)-A and EDR-1(NP)-A for nuclear safety-related X-SAM cranes submitted by Ederer Incorporated.<sup>(1)</sup> Midland plant-specific crane data, as summarized in Appendix B of Ederer's Generic Topical Report EDR-1(P)-A, may be found in Table 9.1-9. Compliance with plant-specific regulatory positions, as summarized in Appendix C of Ederer's Generic Topical Report EDR-1(P)-A, may be found in Table 9.1-10.

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It should be noted that the main hoist of Midland's auxiliary building crane is identical to the X-SAM system described in the above referenced generic topical report with the exception that the Midland crane has a single load path lower hook (i.e., trunion and attaching points). Because of lifting envelope limitations, the Midland design was not able to accommodate dual load path attaching points. In view of this limitation, a factor of safety of 10:1 will be applied to the trunion and attaching point components that have a single load path. As an added measure of safety, the auxiliary building crane incorporates mechanical stops to preclude heavy loads from passing over the spent fuel pool. These mechanical stops are designed to stop the crane while it is traveling at design speed (102 fpm) and while it is fully loaded (125 tons payload). Furthermore, the crane is equipped with end-truck bumpers designed to the requirements of Section 4.12 of CMAA Specification 70. During cask handling operations (other than above the railroad bay), the trolley will be prevented from moving on the bridge through electrical interlocks.

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The spent fuel shipping cask utilizes a double yoke lifting rig (see Figure 9.1-10), thus preventing an accident in the event of a single failure occurring in the double yoke.

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9.1.4.4 Inspection and Testing Requirements

9.1.4.4.1 Shop Testing and Inspection

After manufacture, shop checkout inspections and operation tests are performed on the following components of the fuel handling system:

- a. Main fuel handling bridge
- b. Spent fuel handling bridge

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9.1.4.3.11 Light Loads Handled Over Spent Fuel

A light load is defined as a load weighing less than the combined weight of a fuel assembly and its handling device. Administrative controls and procedures will be provided for the handling of light loads which, if dropped, may impact spent fuel with kinetic energy greater than the kinetic energy of a fuel assembly and its handling device. These procedures and controls will ensure safe handling of these loads over spent fuel.

CONSUMERS POWER COMPANY  
Midland Units 1 and 2  
Docket No 50-329, 50-330

Letter Serial 16599 Dated April 8, 1982 -

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 response to the Open Items of draft SER 9.1.4, Fuel Handling System.

CONSUMERS POWER COMPANY

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

Sworn and subscribed before me this 5 day of April 1982

Barbara L. Lanning  
Notary Public  
Jackson County, Michigan

My Commission Expires September 8, 1984