NRC PDR

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

OCT 11 1978

Docket Nos. 50-329
and 50-330

Consumers Power Company
ATTN: Mr. S. H. Howell
Vice President
212 West Michigan Avenue
Jackson, Michigan 49201

Gentlemen:

A site visit to the Midland Plant, Unit Nos. 1 and 2, was made during the week of September 5, 1978 by representatives of the Nuclear Regulatory Commission staff, the U. S. Fish and Wildlife Service, Department of Interior, and the Michigan Department of Natural Resources, to review environmental factors related to the operation of the plant.

As a result of the site visit and subsequent discussions, we require additional information in order that our review of your application can continue. The information requested is described in the enclosure to this letter. To avoid delay in our review, a completely adequate response should be submitted by October 25, 1978. Please inform us within 7 days after receipt of this letter of your confirmation of the schedule or furnish an alternate date for submittal so that we may plan our review accordingly.

Your reply should consist of three signed originals and 147 additional copies as a sequentially numbered supplement to your Environmental Report. Please forward 41 copies and retain the remaining 109 for future use.

If you have any questions concerning the requested information, please contact Mr. Oliver D. T. Lynch, Jr., Environmental Project Manager, at (301) 492-8438.

Sincerely,

Wm. H. Regan, Jr., Chief
Environmental Projects Branch 2
Division of Site Safety and
Environmental Analysis

Enclosure:
As stated

cc: See attached list

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Consumers Power Company

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cc w/encl:

Myron M. Cherry, Esq.
One IBM Plaza
Chicago, Illinois 60611

The Honorable Curt Schneider
Attorney General
State of Kansas
Topeka, Kansas 66612

Irving Like, Esq.
Reilly, Like and Schneider
200 West Main Street
Babylon, New York 11702

James A. Kendall, Esq.
Currie and Kendall
135 North Saginaw Road
Midland, Michigan 48640

Judd L. Bacon, Esq.
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Lee Nute, Esq.
Michigan Division-The Dow
Chemical Company
47 Building
Midland, Michigan 48640

Michael I. Miller
Isham, Lincoln & Beale
1 First National Plaza
Chicago, Illinois 60603

Mr. Stephen Gadler
2120 Carter Avenue
St. Paul, Minnesota 55108

Mrs. Mary Sinclair
5711 Summerset Street
Midland, Michigan 48640

MIDLAND PLANT, UNIT NOS. 1 & 2

Docket Nos.50-329 and 50-330

REQUEST FOR ADDITIONAL INFORMATION

Archaeology

1. Provide an inventory of all cultural resources remaining on the Midland Plant property including the methods used for site location and evaluation. In addition, provide information on the structure and function of any individual historic and/or archaeological sites that have been located.

2. Describe procedures used during the post-1972 construction period to insure that archaeological materials were not present during excavation.

3. Was a professional archaeologist retained to be onsite during the post-1972 construction period to examine and evaluate excavation material? If so, what was the person's name, qualifications and results of his field analysis? If a professional archaeologist was not retained for this purpose, please provide an explanation.

4. Were any archaeological salvage procedures instituted during the post-1972 construction period? If so, please describe these and the materials salvaged. If no, please provide an explanation.

5. Were any exploratory pits dug by the Michigan Archaeological Society on the Midland Plant property? Was a sampling strategy used? If so, what were their findings (provide locations of pits)? If not, please provide an explanation.

6. Did Consumers Power Company establish contact with the State Archaeologist or any interested federal agencies since the issuance of the Final Environmental Statement, Construction Permit Stage? If so, please provide names, dates and a synopsis or letter of conversations. If not, please provide an explanation.

7. Please provide the results of the evaluation of the prehistoric cultural materials found on the site in 1971.

8. Provide an evaluation of other cultural materials known to have been collected from the Midland site including the photographs of collections that are currently available from members of the Saginaw Archaeological Commission and Chippewa Nature Preserve. Include information on chronology, site function, and cultural affiliation. This evaluation is to be made by a professional archaeologist meeting SOPA (Society of Professional Archaeologists) requirements.

9. Provide a detailed plan for the mitigation or avoidance of sites that will be disturbed by the construction and operation of the plant site and the transmission corridor.

Meteorology

1. Provide information on the validation of the Portman and Weber model for the down-wind extent and density of fog from cooling ponds with a heat load approaching that of the Midland cooling pond. (The fogging observations from Dresden referred to in the ER to justify the use of the Portman and Weber model were made prior to closed-cycle operation of the cooling lake. The Dresden cooling lake is now used in the closed-cycle mode and is much warmer than before; fog over and down-wind of the pond is now more frequent, more dense and extends much further than it did in 1972-1973). Please provide more detail to this question and those that follow than was provided in the responses to NRC questions (ER, Revision 2).

2. Justify the use of the Bechtel model for predicting fog or no fog over the pond, which was derived from data on a relatively cool pond in Arizona, for use on the much hotter Midland facility. Discuss any new validation studies of the Bechtel model.

3. Inidicate the expected volume of traffic on Fordonville Road (and other roads which may be at times covered by cooling pond fog).

4. Describe the proposed monitoring program to determine the degree, frequency and horizontal extent of steam fog caused by the plant's cooling lake. Indicate when this program will start, and whether or not the program will continue until one year of data, with reasonably complete two-unit operation, are collected. Indicate areas and roads to be monitored.

5. Discuss how the monitoring program will unambiguously detect and record the incidence and density of steam fog, icing and plume aloft over all offsite sensitive locations for all wind directions and weather conditions.

Socioeconomics

1. Please provide the updated information (referenced in Revision 2 under NRC Questions and Responses, page SOC 3-1) on any other known industrial expansion or location decisions contingent on Midland operation.

2. Provide a copy of the letter from the City of Midland Planning Director (letter to Consumers Power Company, dated June 6, 1978).

3. Provide the projected annual employment schedule at Midland and, if available, Dow Chemical during the operating period of the Midland Plant. If this information is not available, provide the current employment profile at Midland Plant and Dow Chemical, including:

   - number of workers employed
   - number of relocated workers
   - residential location of the relocated workers by town
   - percentage of housing types occupied by the relocated workers (rental, single unit, group quarter, etc.)
   - percentage of single workers and married workers, family size
   - school-age children (preschool, kindergarden, junior high, etc.)
   - relocated children's enrollment by school district.

4. Provide an update of all figures and discussions in Enclosure 1 of the April 1, 1977 letter to William H. Regan, Jr. In particular, the expected community impacts and mitigating measures identified through the meeting with local officials need to be quantified in physical and monetary terms. (See Question 4 of the May 22, 1978 letter, Wm. H. Regan, Jr. to S. H. Howell).

5. Provide an estimate of property and income tax payable to local and state jurisdictions during the operating life of the Midland Plant (update page 8-1 of Enclosure 1 in the April 1, 1977 letter to William H. Regan if necessary). The estimates should indicate these taxes, in 1978 dollars, for each operating year along with the total taxes paid during the operating life of the plant.

6. Provide an estimate of the average operation-related expenses during the operating period. Indicate the expected average expenditures in the three counties of Midland, Saginaw and Bay, for materials, services and equipment and the discount rates used to determine the average.

7. Provide detailed information (see Table below) on the amount of land used for power generation and distribution. Also provide the best

estimates of the value, in 1978 dollars, of this land assuming it is utilized for alternative productive purposes (opportunity costs of land).

	Acreage	Opportunity Costs
Exclusion Area		
Laydown Area		
Access Road		
Railroad Spur		
Start-up Transmission Corridors		
Kenowa-Thetford Corridor		

8. Provide the results of the CPCo co-sponsored local traffic study which has been recently completed by the State Highway Department staff.

9. Provide the following with respect to the 1974 contract with Dow Chemical Company: (1) the minimum lbs/hr purchase of 175 psig steam and the maximum, (2) the amount of 600 psig steam taken by DOW, and (3) the amount of electricity purchased by Dow.

10. Provide an exhibit comparable to Exhibit A in the 1978 General Agreement with Dow that indicates the increase in electrical generating capability for various reserved steam flow rates of 175 psig steam.

11. Provide a discussion showing the original NSSS capability and design is amenable to operation under provisions of both contracts with Dow.

Terrestrial Ecology

1. Identify the "important" species (USNRC, Reg. Guide 4.2, Revision 2, Jan. 1976) and discuss the effects, if any, plant operation may have on these species. Particular attention should be given to the effects of the cooling lake on waterfowl.

2. The "Habitat Formulas for Post-Construction Map" do not list the species in the same order. Is the order in which the species (flora and fauna) are listed intended to imply decreasing "importance" of the species in the community?

Aquatic Ecology

1. Provide copies of all correspondence with EPA and Michigan DNR regarding their concerns about the discharge and intake structures.

2. Provide a draft copy of the cooling pond discharge performance study done by ALDEN.

3. Provide the entrainment and impingement data collected to date, in summarized form if possible. Indicate method of collection, sampling frequency and pumping

Hydrology, Water Use and Water Quality

1. Provide an estimate of the maximum amount of city water to be used on an annual basis at MNP, both directly and indirectly from DOW. What percentage of the total city water provided to the community would this be?

2. The Midland plant has a well defined schedule for obtaining make-up water from the Tittabawassee River to the cooling pond; however, a discharge scheme to the river is undefined. Identify the planned discharge scheme. Incorporate in your response: circumstances under which discharge will occur during low flow, whether discharge will occur when make-up is not occurring, and whether make-up and discharge volumes will be constant during the entire year.

3. At the site visit (September 6, 1978), it was learned that a new model has predicted a different thermal plume. Indicate the expected size of the mixing zone during worst case conditions using the new model.

4. Upstream of the Midland Nuclear Power Plant site and on the Tittabawassee River are located four impoundments. These impoundments are owned and have been operated since 1925 by Wolverine Electric Corporation with generated electric power sold to Consumers Power Corporation. The shores of all of the impoundments are heavily developed with cottages, summer homes, and permanent residences with an apparent historical use of these impoundments for swimming, fishing, boating, and other recreational uses. Indicate whether operation of the Midland Station will result in any changes in the management of these upstream impoundments which might adversely affect their aesthetic and recreational usage. Provide a copy of the contract between Consumers Power and Wolverine Electric Corporation.

5. Provide the NPDES permit application filed February 1978 to EPA/MWRC. Also provide your 316a and 316b applications.

6. Indicate what biocide or scheme will be used for algae control within the cooling pond considering the effects of total dissolved solids (TDS).

7. The ER-OL does not address the issue of deicing for the intake structure on the river. Indicate what procedure will be used for deicing of the river intake structure if make-up water to the cooling pond is desired.

8. In reviewing the preoperational monitoring program, it appears that the biological section is satisfactory, however, the water quality section is very ambitious. The ER-OL indicates 32 water quality parameters will be monitored. Indicate if these parameters are required by the State or if Consumers Power is monitoring them for their own benefit.

9. Provide the Tittabawassee River water temperature data collected by Dow.

10. Provide the values of the heat exchange coefficient, K, used in the cooling pond calculations.

11. Provide a figure showing the discharge and intake structures, including the Dow discharge, relative to the Tittabawassee River and cooling pond.

Endangered Species

1. Identify and discuss the methodology and/or survey method used to insure that operation of the transmission lines and plant facility will not violate the Michigan Endangered Species Act of 1974, Public Act No. 203, which prohibits the "taking" of any state listed endangered or threatened animals or plants. List reference sources and all authorities consulted.

2. What state listed species were considered in your assessment of impacts to endangered and threatened biota? Provide all information (i.e. consultations, letters, surveys, etc.) used to support your conclusion, stated in Section 4.2.6 of the OL-ER, that this state list does not "include any animals that are expected to be affected by the construction of the Midland Plant transmission lines."

3. Describe methodology and/or survey method that will be used for the preoperational and operational monitoring programs to insure that operation of the transmission lines and plant facility will not violate the Federal Endangered Species Act and Michigan Endangered Species Act.

4. Provide a list of all listed or proposed Michigan State endangered and threatened species for Bay, Midland and Saginaw Counties. Also, provide the distribution range and habitat requirements of each species occurring in these three counties.