Distribution:
Docket File
AEC PDR
Local PDR
DRL Reading
DR Reading
PWR-2 Reading
CKBeck
FSchroeder
RSBoyd
RCDeYoung
DSkovholt
TRWilson
EGCase
RRMaccary
RWKlecker
DRL/DRS Branch Chiefs
FWKaras(2)
OGC

Docket No. 50-305

JAN 22 1972

Mr. E. W. James, Vice President
Power Generation & Engineering
Wisconsin Public Service Corporation
P. O. Box 1200
Green Bay, Wisconsin 54305

Dear Mr. James:

Our continuing review of the Final Safety Analysis Report for the Kewaunee Nuclear Power Plant, including Amendments 10 and 12, has indicated the need for certain additional hydrologic engineering information. The specific information required is listed in the enclosure.

Please handle your responses in the same manner as for the previous requests for additional information.

To maintain the review schedule which we have discussed earlier with you, we will need your complete reply by February 14, 1972. Please inform us within 7 days after receipt of this letter as to the date when you will be able to submit the requested information to us so that we may revise our schedule, if necessary.

Please contact us if you desire any discussion or clarification of the material requested.

Sincerely,

Original Signed By
R. C. DeYoung
R. C. DeYoung, Assistant Director
for Pressurized Water Reactors
Division of Reactor Licensing

Enclosure:
Request for Additional Information

cc: w/encl
Mr. Steven E. Keane, Esq., Foley, Sammond, & Lardner, 735 North Water Street, Milwaukee, Wisconsin

Mr. Gerald Charnoff, Shaw, Pittman, Potts, Trowbridge & Madden, 910 17th Street, NW, Washington, D. C. 20006

OFFICE ▶	DRL:PWR-2	DRL:PWR-2	DRL:AD/PWRs			
SURNAME ▶	LPCrocker:bn	CGLong	RCDeYoung			
DATE ▶	1/21/72	1/22/72	1/22/72			

Form AEC-318 (Rev. 9-53) AECM 0240 U. S. GOVERNMENT PRINTING OFFICE : 1970 O - 405-346

UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

Docket No. 50-305

January 22, 1972

Mr. E. W. James, Vice President
Power Generation & Engineering
Wisconsin Public Service Corporation
P. O. Box 1200
Green Bay, Wisconsin 54305

Dear Mr. James:

Our continuing review of the Final Safety Analysis Report for the Kewaunee Nuclear Power Plant, including Amendments 10 and 12, has indicated the need for certain additional hydrologic engineering information. The specific information required is listed in the enclosure.

Please handle your responses in the same manner as for the previous requests for additional information.

To maintain the review schedule which we have discussed earlier with you, we will need your complete reply by February 14, 1972. Please inform us within 7 days after receipt of this letter as to the date when you will be able to submit the requested information to us so that we may revise our schedule, if necessary.

Please contact us if you desire any discussion or clarification of the material requested.

Sincerely,

R. C. DeYoung, Assistant Director
for Pressurized Water Reactors
Division of Reactor Licensing

Enclosure:
Request for Additional Information

cc: w/encl
Mr. Steven E. Keane, Esq., Foley, Sammond, & Lardner, 735 North Water Street, Milwaukee, Wisconsin

Mr. Gerald Charnoff, Shaw, Pittman, Potts, Trowbridge & Madden, 910 17th Street, NW, Washington, D. C. 20006

REQUEST FOR ADDITIONAL INFORMATION

WISCONSIN PUBLIC SERVICE CORPORATION

KEWAUNEE NUCLEAR POWER PLANT

DOCKET NO. 50-305

2.14 The reply to request 2.1.1 (Amendment 10) indicates that your estimate of the probable maximum water level associated with the surge which would result from the most severe combination of meteorological parameters in a squall line moving across Lake Michigan is elevation 583.8 feet International Great Lakes Datum (IGLD). We and our consultant, the U.S. Army Coastal Engineering Research Center (CERC), do not agree with your probable maximum surge estimate or your apparent conclusion that the work of Platzman in this field cannot be extrapolated to the plant site. For example, it is noted that probable maximum surge elevation estimates have been developed for both the Zion and the Point Beach reactor sites. The two instantaneous water levels are, respectively, elevations 591.7 feet IGLD and 589.2 feet IGLD.

Independently, our consultant has estimated the instantaneous probable maximum water level at the Kewaunee shoreline site at elevation 589.9 feet IGLD. Waves from 1 to 2 feet high could occur coincidentally with such a surge and the runup on safety related structures for the high water surge would be correspondingly higher than the instantaneous surge water level.

Conversely, our consultant has estimated the probable minimum Lake Michigan water level over the intake cone at elevation 571.8 feet IGLD. Wave action could cause an instantaneous low water level over the intake cone about 1 foot below this level.

Therefore, it is postulated that a Lake Michigan surge could cause water to reach as high as 591-593 feet IGLD at the screenhouse or as low as 571 feet IGLD over the intake cone. Assume these postulated events and provide the following information:

2.14.1 Figure 10.2-10 indicates the operating floor of the screenhouse is at elevation 586.0. Discuss an occurrence of the postulated surge and coincident wave action with respect to the safe operation of the service water and circulating water systems.

2.14.2 Discuss the static and dynamic forces that the postulated surge would cause on the underside of the operating floor of the screenhouse. If all openings through the operating room floor are sealed, and no exterior venting is provided, the dynamic effects of air compression should also be discussed.

2.14.3 Describe any exterior accesses to the screenhouse below elevation 593 feet IGLD with respect to their providing flooding pathways to the screenhouse operating room during the postulated surge. What other safety related equipment can be adversely affected by the postulated high water surge by flooding through the powerhouse access tunnel?

2.14.4 Discuss the ability of safety related equipment to function in the event of the low water surge. In particular, provide an estimate of the head loss through the intake conduit and the intake sump for such a condition, and compare the resulting water sump level with the required minimum levels for the service water pumps. If the required level is less than the minimum sump level, discuss ways to prevent a loss of the source of cooling water.

2.14.5 Describe the measures that have been or will be taken to protect the safety related structures, systems, or equipment of the plant against the effects of the postulated maximum and minimum water levels.

2.15 Provide estimates of the largest wave that can reach and break on both screenhouse and circulating water discharge structures. The determinations should not be necessarily based on the largest wave which will break in deep water offshore, but rather on the waves which can reach and break on the structures. Provide estimates of the depth of water in front of both structures (including provision for breaking wave setup which can be as much as 15% of the incident wave height), runup, splash, and the effects of static and dynamic forces that would result. Compare the estimates of resulting static and dynamic forces and splash with the structural design bases and unimpaired operation of safety related equipment and systems. It is noted that the third edition of your reference by the CERC, Technical Report No. 4, "Shore Protection Planning and Design," has more up-to-date data and information in the above areas than the second edition you have used.

2.16 Wind driven ice has been noted along the shore of Lake Michigan. What experience is there for the plant site region that would indicate the possible formation of wind-driven ice ridges that could ground both onshore and offshore, and that could block the intakes and the discharge canal? What design features of the plant assure a continuous supply of cooling water in the event such ice ridges should occur?

2.17 Part of the redundancy required to assure water supply in the event of the failure of the single intake conduit is the 30-inch diameter service water intake and supplemental recirculating conduit from the discharge conduit to the screenhouse sump as shown on Figure 1.2-9. Substantiate that the 30-inch conduit can supply sufficient water in an emergency operation mode.

OCT 1 2 1971

DISTRIBUTION:
Docket (3)
AEC PDR (3)
Local PDR (3)
DR Reading
DRL Reading
PWR-1 Reading
Denton, DRL
NBrown, DRL

Docket Nos. 50-266,
50-305 and 50-301

Wisconsin Electric Power Company
Wisconsin Michigan Power Company
ATTN: Mr. John G. Quale
President
231 West Michigan Street
Milwaukee, Wisconsin 53201

Gentlemen:

A copy of a letter, dated September 29, 1971, from the U. S. Department of the Interior, Fish and Wildlife Service concerning preoperational surveys and studies at the Point Beach and Kewaunee Nuclear Plant sites is enclosed for your information.

We particularly invite your attention to the comments made by the Fish and Wildlife Service in the third paragraph of the enclosed letter.

Sincerely,

Original Signed by
Peter A. Morris

Peter A. Morris, Director
Division of Reactor Licensing

Enclosure:
Ltr, dtd 9/29/71 from
Fish & Wildlife Service

cc: Mr. Daniel W. Slater, Chief
Division of River Basin Studies
Bureau of Sport Fisheries and Wildlife
U. S. Department of the Interior
Washington, D. C. 20240

Appl. Amendment

CRESS TN4024 R-02 hem						
OFFICE ▶	AD:PWR	PWR-1	PWR-1	AD:PWR	DRL	
SURNAME ▶	NBrown:hem	KKniel	DRMuller	RCDeYoung	PAMorris	
DATE ▶ 10/5/71	10/5 /71	10/ /71	10/6 /71	10/ 6/71	10/ /71	

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1970—407-758