



Consumers  
Power  
Company

James W Cook  
Vice President - Projects, Engineering  
and Construction

General Offices: 1945 West Parnall Road, Jackson, MI 49201 • (517) 788-0453

April 30, 1982

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



MIDLAND PROJECT  
MIDLAND DOCKET NO 50-329, 50-330  
EFFECTS OF CRACKS ON SERVICEABILITY OF CONCRETE  
STRUCTURES AND REPAIR OF CRACKS  
FILE: 0485.16 SERIAL: 16884

REFERENCES: (1) J W COOK LETTER TO H R DENTON, EVALUATION  
OF FEEDWATER ISOLATION VALVE PITS AT  
MIDLAND PLANT, SERIAL 15493, DATED JANUARY 25, 1982  
(2) J W COOK LETTER TO H R DENTON, EVALUATION OF  
AUXILIARY BUILDING CONTROL TOWER AND  
ELECTRICAL PENETRATION AREAS AT MIDLAND  
PLANT, SERIAL 15527, DATED JANUARY 29, 1982  
(3) J W COOK LETTER TO H R DENTON, EVALUATION OF  
THE EFFECT ON STRUCTURAL STRENGTH OF CRACKS  
IN THE WALLS OF THE DIESEL GENERATOR BUILDING,  
SERIAL 15978, DATED FEBRUARY 16, 1982  
(4) J W COOK LETTER TO H R DENTON, EVALUATION OF  
CRACKING IN SERVICE WATER PUMP STRUCTURE AT  
MIDLAND PLANT, SERIAL 16009, DATED MARCH 2, 1982  
ENCLOSURE: EFFECTS OF CRACKS ON SERVICEABILITY OF  
STRUCTURES AT MIDLAND PLANT

References 1 through 4 above transmitted a series of reports which presented an evaluation of the effect on structural strength of cracks observed in the feedwater isolation valve pits, the auxiliary building control tower and electrical penetration areas, the diesel generator building, and the service water pump structure. These four reports were provided as the result of discussions with the NRC Staff and its consultants at meetings held on December 10, 1981 and January 11, 1982. During these meetings, Consumers Power agreed to provide the NRC with an evaluation of the effects of cracks on the longterm serviceability of concrete structures and with recommendations on the sealing of cracks.

In response to this commitment, we are providing the enclosed report entitled, "Effects of Cracks on Serviceability of Structures at Midland Plant," by Messrs W G Corley, A E Fiorato and D C Stark of Construction Technology

oc0482-0085a100

8205120202 820430  
PDR ADCK 05000329  
A PDR

Boo!  
1/1

Laboratories, a division of the Portland Cement Association. This report contains a discussion of the effects of observed cracks on the serviceability of the feedwater isolation valve pits, the auxiliary building, the diesel generator building and the service water pump structure and provides our recommendations for the sealing of cracks in these structures. Please note that the enclosed report does not apply to the borated water storage tank foundations. The repair of cracks by pressure grouting of the borated water storage tank foundations has been addressed in a separate 50.55(e) report forwarded to the NRC by our recent correspondence, Serial 16172, dated April 23, 1982.

Based on the conclusions reached in the enclosed report we wish to recommend the following: (1) sealing of cracks in walls by epoxy injection for cracks above the permanent water table is considered unnecessary; (2) sealing of cracks by means of epoxy injection or other means for walls below the permanent water table, which show visible leakage of water, will be performed; and (3) the south wall of the service water pump structure will be coated on the exterior surface within the splash zone area adjacent to the cooling pond, i.e., between Elevation 626' and Elevation 637.5'. The epoxy injections can be applied from the interior surface. We are also advising that the work to seal cracks will be performed after completion of the underpinning operations.

*James W. Cook*

JWC/RLT/FV/mkh

CC Atomic Safety and Licensing Appeal Board, w/o  
 CBechhoefer, ASLB, w/o  
 MMCherry, Esq, w/o  
 FPCowan, ASLB, w/o  
 RJCook, Midland Resident Inspector, w/o  
 RSDecker, ASLB, w/o  
 SGadler, w/o  
 JHarbour, ASLB, w/o  
 GHarstead, Harstead Engineering, w/a  
 DSHood, NRC, w/a (2)  
 DFJudd, B&W, w/o  
 JDKane, NRC, w/a  
 FJKelley, Esq, w/o  
 RBLandsman, NRC Region III, w/a  
 WHMarshall, w/o  
 JPMatra, Naval Surface Weapons Center, w/a  
 WOtto, Army Corps of Engineers, w/o  
 WDPaton, Esq, w/o  
 SJPoulos, Geotechnical Engineers, w/a  
 FRinaldi, NRC, w/a  
 HSingh, Army Corps of Engineers, w/a  
 BStamiris, w/o