

DEC 13 1974

Docket Nos. 50-329
and 50-330

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APPLICANT: CONSUMERS POWER COMPANY

FACILITY: MIDLAND PLANT, UNITS 1 AND 2

SUMMARY OF MEETING WITH THE CONSUMERS POWER COMPANY (CPC) AND REGULATORY STAFF TO CONSIDER PROBABLE MAXIMUM FLOODING (PMF) FOR THE MIDLAND PLANT, UNITS 1 AND 2

BACKGROUND

At the time the construction permit (CP) was issued for the Midland Plant, Units 1 and 2, the staff reviewed and accepted the applicant's calculated Tittabawassee River PMF peak discharge of 262,000 cubic feet per second (cfs) and the associated stillwater elevation of 631.0 feet mean sea level (msl). This level, plus that resulting from windwave action (not then determined) was to provide the design basis for PMF protection.

In Amendment 25, the applicant submitted a report entitled, "Probable Maximum Flooding Near the Midland Site" wherein proposed changes in calculational techniques yielded a postulated PMF discharge of 188,000 cfs and an associated stillwater level of 625.7 feet msl at the plant site. The Regulatory staff reviewed Amendment 25 and conducted their own independent analysis using data requested by the staff and supplied by the applicant. The staff's analysis and results indicated that the applicant's proposed (Amendment 25) design basis stillwater level of 625.7 feet msl was not conservative, and furthermore, substantiated the original proposed probable maximum stillwater elevation of 631.0 feet msl as appropriate and conservative. The staff's position was sent to the applicant with the applicant subsequently requesting a meeting to discuss the Midland PMF. The meeting was held in Bethesda, Maryland on December 6, 1974 and the significant items and conclusions resulting from this meeting are summarized below. An attendance list for those participating (CPC, Bechtel, and Regulatory Staff) is provided in Enclosure 1.

DAM FAILURE

The applicant had evaluated the effect of four upstream dam failures at the time of PMF as input in their calculations for determining maximum water level at the plant site. The worst condition would be if the four dam levels were to fail successively downstream. To allow for a

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**Summary of Meeting
with CPC**

possible "domino" effect, the applicant had assumed total maximum storage behind all four dams would be treated as concentrated at the Sanford Dam furthest downstream. A Sanford Dam Failure mode was developed and a failure hydrograph (Discharge versus Time) constructed. The staff indicated that the applicant's approach to dam failure on the Tittabawassee River was conservative and acceptable.

COMBINED PROBABLE MAXIMUM FLOOD

The applicant stated that studies of the topography upstream of the plant had identified an extensive flood plain between the Sanford Dam and the plant site (See Enclosure 2). A PMF combined with a Sanford Dam failure would cause inundation of the flood plain area and analysis had shown both a reduced flow and stillwater level of 183,000 cfs and 625.7 feet msl, respectively.

The Regulatory staff stated that evidence available from very large floods in the Ohio and Mississippi River Basins indicated that flood plain areas do not act as reservoirs in determining downstream flows. Large floods tend to follow the original river channels downstream. The applicant was informed that a detailed flood analysis including a two-dimensional unsteady flow analysis between Sanford Dam and the plant site would be required to substantiate any reduction in the staff position for a PMF stillwater level of 631.0 feet msl. The staff indicated that they did not think a detailed unsteady flow analysis would significantly lower the PMF stillwater level at the plant site.

WIND WAVE RUN-UP CALCULATIONS

The applicant provided detailed maps and cross-sections for safety related structures. Based on this new information, the staff concluded that wind wave run-up at safety related structures would not be severe with the exception of the Service Water Pump house.

ALTERNATIVE ACTIONS

From the discussions between applicant and the staff, two alternatives were presented for the applicant's consideration.

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1. Accept the 631 foot msl elevation as the design basis stillwater level and evaluate the resulting wind wave run-up on each safety related structure (currently designed for waterproofing to elevation 634 feet msl) and provide either additional hardened flood protection or waterproofing as needed including a technical specification describing a safe shutdown procedure.
2. Provide a detailed flood analysis for an unsteady flow analysis between Sanford Dam and the plant site which would account for storage affects in the designated flood plain area.

The applicant indicated that they would assess what course of action they would pursue and notify the staff in the near future.

Original Signed by

L. B. Engle, Project Manager
Light Water Reactors Branch 2-3
Directorate of Licensing

Enclosures (2)

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ENCLOSURE 1

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A. S. Johnson

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ENCLOSURE 2

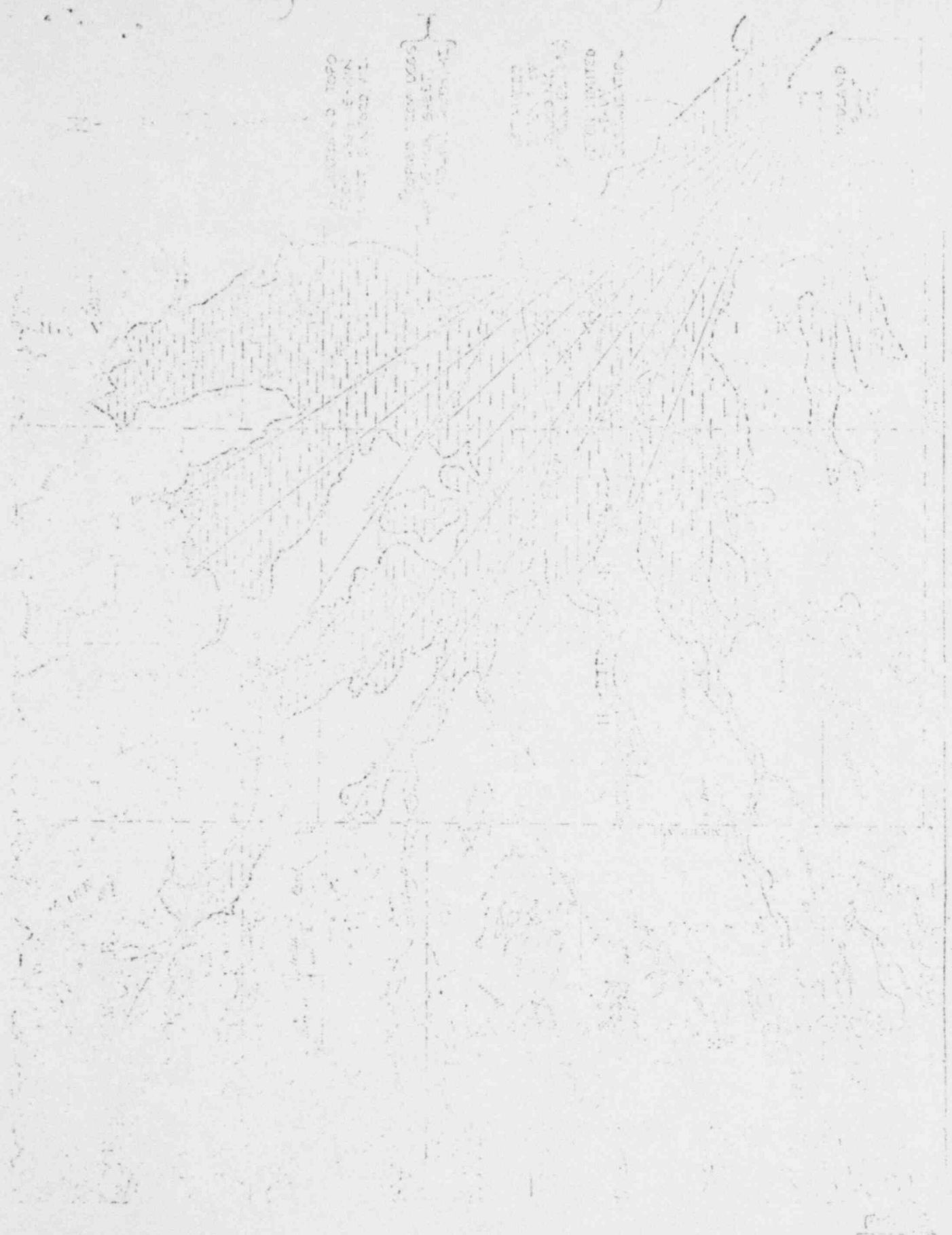
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DISTRIBUTION OF MEETING SUMMARY

DATED DEC 13 1974

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Docket Files

- AEC PDR
- LPDR
- L Reading (M. Groff)
- LWR 2-3 Reading File
- VAMoore
- RCDeYoung
- DMuller
- KGoller
- DSkovholt
- RDenise
- JStolz
- KKniel
- ASchwencer
- DVassallo
- OParr
- WButler
- BYoungblood
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- RPurple
- DZiemann
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- WHouston
- RVollmer
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- SVarga
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- FSchroeder
- RMaccary
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- VStello
- JKnight
- SPawlicki
- LShao
- BGrimes
- WGammill
- MSpangler
- JKastner
- RBallard
- CLong
- GLainas
- VBenaroya
- TNovak
- Tippolito
- DRoss
- OGC
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- RS (3)
- EGoulbourne
- ACRS (16)
- LEngle
- JHulman
- TJohnson
- ASchreiber
- GTuri