

ENCLOSURE 1  
REPORT OF A MEETING  
WITH CONSUMERS POWER COMPANY  
ON MAY 9, 1973  
MIDLAND 1 AND 2  
DOCKET NO. 50-329/330

Summary

This was the first meeting held with Consumers Power Company (CP) since issuance of the Construction Permits for Midland 1 and 2 on December 15, 1972. This meeting was held to discuss all items noted in the AEC Safety Evaluation Report or in the Construction Permit conditions as outstanding or requiring follow-up action. The agenda for this meeting, which is enclosed, lists these items with reference to the Construction Permits or a page of the Safety Evaluation Report.

The detailed notes are listed in the following pages in numerical order and divided into two sections, (A) for items on the agenda, and (B) for non-agenda items. Further action is needed as follows:

Group A

1. AEC to review and comment on proposed location of site meteorology tower before end of summer 1973.
2. CP to submit subsidence surveillance program for AEC review by early 1974.
3. CP to submit Probable Maximum Flood calculation for AEC review by late 1973.
6. CP to submit proposed revisions of 138 kv lines for AEC review (no schedule established).
7. CP to submit detailed electrical criteria and procedures for AEC review by August 1973.
8. CP to submit proposed revisions to emergency diesel generator design for AEC review (no schedule established).
9. CP to submit proposed revision to BWST design for AEC review (no schedule established).
21. CP to submit steam line break amendment for AEC review by November 1973.
22. CP to submit proposed method for cross connect of low pressure injection trains (no schedule established).

Group B

1. AEC to review revised piping and vessel code classifications (no schedule established).

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## Discussion

### A. Scheduled Agenda Items

#### 1. Onsite meteorology program

CP plans to start collecting onsite meteorological data late in 1973. They have retained Dr. Donald J. Portman of the University of Michigan as a consultant. At his suggestion they propose to locate their "site" tower about two miles away from the site in order to avoid local turbulence associated with chemical settling ponds adjacent to the site. The original tower location, which Dr. Portman discouraged, was to be in the site parking lot. CP was told that the AEC staff will review the tower location and comment on it.

The tower will be 80 meters tall with instruments at elevations of 10, 40, 60 and 80 meters with the sensitivities suggested by Regulatory Guide 1.23. Prime readout is digital but strip charts are used as a backup. The AEC suggested a weekly check for system breakdown, loss of data, etc.

#### 2. Subsidence surveillance program

CP reviewed plans for this program, dividing it into two phases:

Phase 1: To start in late 1974. About 25 monuments will be located around the site perimeter, about 200 feet apart. A reference mark outside the salt well area will be used.

Phase 2: To start after most of the plant construction is complete. New monuments will be added to supplement the Phase 1 markers.

CP intends to submit the subsidence surveillance program to the AEC in early 1974 for review. CP also stated that Dow has agreed to conduct no more salt mining under or adjacent to the Midland Plant.

#### 3. Review of Probable Maximum Flood calculation

Bechtel is updating the calculation and CP proposes to submit the revised calculation to the AEC for review in late 1973.

#### 4. Preoperational environmental monitoring program

CP stated their intent to conduct a program of two years span or more, starting one year before submittal of the FSAR; thus, the program would start late in 1975. Environmental surveillance to be conducted is described in the Environmental Report.

5. Modification of water intake to reduce velocity

CP's design is not final yet but they are considering a weir box with a perimeter inlet. Such concrete work won't go in until about 1975. CP was told that the AEC staff will want to check the design.

6. Relocation of 138 kV South Dow Line

CP reviewed the history and background on the location of this line, and summarized the present status of offsite power lines. Two of the "green" system 138 kV lines are in to the plant switchyard. The Tittabawassee Substation is in; the Dow South Substation won't be constructed until 1977 or 1978. CP proposed the revised plan shown on the enclosed transmission line map. CP stated that they are considering installation of a circuit breaker connection between the 138 kV Dow South line and the 138 kV Tittabawassee line. CP was told that such changes should be reviewed as soon as possible to ensure that all safety and environmental requirements are met.

7. Detailed Criteria and Procedures for Installation of Protection and Emergency Power Systems

CP noted that the electrical separation criteria are presented in the PSAR and Amendment No. 5 to it. They expect to have a revised writeup on criteria and procedures by August 1, 1973. CP was told that the AEC wishes to review this promptly.

8. Use of Two Emergency Diesels to Serve Two Plants

CP was reminded of the outstanding requirement, as noted in the AEC Safety Evaluation Report, to furnish test data to confirm the suitability of this size diesel generator (3000kW). CP was also reminded of the Technical Specification limits which are imposed as related to diesel generator availability; with only two diesels for the two plants, the restrictions would be more severe than usual for a two-plant site.

CP noted that they have been considering both the need for performance data and the expected severity of Technical Specification limits and are considering revision of the design to enlarge the designated diesel generators or to provide additional diesel generator units for the station. A general discussion of onsite electrical power systems ensued. CP was urged to complete their design reevaluation and notify the AEC promptly of their proposed course of action.

9. Use of a Singel Borated Water Storage Tank (BWST) to Serve Two Plants

CP was informed that they should expect Technical Specifications which would require both reactors to be shut down unless:

- a. The boron concentration in the BWST is at a specified level (probably  $\approx$  2270 ppm)
- b. The BWST water temperature is not less than 40°F.
- c. The BWST discharge valves are locked open
- d. Two BWST level instrument channels are operable.

CP noted that Babcock & Wilcox has recommended to CP the use of eductors or gravity drain in lieu of the metering pumps for addition of sodium hydroxide and sodium thiosulfate to the water drawn from the BWST. CP agreed to review the Technical Specification reminder and B&W's recommendation to determine whether to submit a design change proposal.

10. Diverse Reactor Trips

CP stated that they will satisfy this requirement by making the reactor trip parameters the same as for the other plants in the Oconee 1 series (includes the high reactor building pressure trip).

11. Hydrogen suppression system

CP stated plans to have two recombiners plus a purge, both systems to be manually actuated. They consider both safety-related, but the backup purge system will have only one train. The recombiners may not be catalytic as the PSAR indicated but thermal if recent technology development justifies the change. If thermal recombiners are chosen, each reactor building will have two such units in it. If catalytic units are selected, CP expects to have just two outside units to serve both plants.

12. Fuel element failure detection system

CP is considering use of a system such as they have in their Palisades plant (on-line gamma monitor), but the specification won't be written until 1975 so newer technology is still a possibility.

13. Reactor coolant leakage detection system

CP was reminded of the new Regulatory Guide on leak detection systems, noting that air particulate monitors are considered



the most sensitive leak detection devices

14. Seismic instrumentation system

CP intends to conform with Regulatory Guide 1.12. Their present plans call for a seismic instrumentation system in only one reactor building, with a building high sensor, a low sensor, and monitors on selected Category I equipment.

15. Containment isolation sealing

CP intends to carry through with the sealing described in the PSAR; they plan non-redundant systems.

16. Sealed compartment for reactor building sump line

CP referred to PSAR Amendment No. 6 in noting the enclosure does not go to the pump suction but only over the first isolation valve. The line is ANSI 31.7 (Class 2) down to the valve.

17. R&D report on process steam gamma monitor

CP has visited various experts; instruments of acceptable sensitivity appear to be obtainable. They intend to have a continuous monitor on the export steam for emergency shutoff with a sensitivity of  $3 \times 10^{-6}$   $\mu\text{Ci/cc } \beta\gamma$ . For grab samples the sensitivities which appear acceptable to CP are:

Gross  $\beta\gamma$ :  $5 \times 10^{-9}$   $\mu\text{Ci/cc } \pm 2x$   
Tritium:  $4 \times 10^{-7}$   $\mu\text{Ci/cc } \pm 2x$

CP was urged to get sample data on steam such as the current Dow process steam.

18. Toxic gas in the control room

CP reviewed the matter noting that C1 is the worst case because of the large quantity stored at Dow. CP is considering a control room pressurization system with manual startup upon alarm at Dow (cf. PSAR Am. No. 11). The C1 closed would take about 40 minutes to reach the site and the condition of unacceptable concentration ( $>1$  ppm as required). They do not intend to treat this system as an Engineered Safety Feature (redundancy, etc.); they consider Scott air packs an acceptable backup.

19. Consideration of cooling pond against Safety Guide 27 criteria

The staff expressed concern about the adequacy of a 70 acre-foot emergency cooling pond for Midland 1 & 2 based on recent detailed performance analyses of the Arkansas 1 & 2 pond. The Arkansas pond (also designed by Bechtel), for two similar plants, contains 84 acre-feet and we consider it just adequate.

CP noted that the Midland emergency cooling pond will be seismic Category I, have fully redundant line connections, and meet the 30-day cooling requirement. They noted the AEC concern for future evaluation.

20. Effects of failure of non-Category I equipment (Quad Cities)

CP's response to the generic letter on this subject (September 29, 1972) was discussed; they were reminded to recheck this again when the plant design is more detailed.

21. High energy line rupture outside containment

CP reiterated their intent, as stated in their February 26, 1973 letter, to submit an amendment on this matter by November 1, 1973. CP was told that this schedule is satisfactory and they were encouraged to consider line relocations at this early stage of plant construction. CP stated that they are examining the plant layout now to determine whether changes are needed.

22. Core Flooding Tank (CFT) Line Break

The background and chronology of the AEC concern about this particular loss-of-coolant-accident (LOCA) were reviewed. CP was informed that three items had to be considered to relate the LOCA analysis of this break done for the Oconee series of plants to the Midland plants in particular:

- a. Installation of flow limiters in the CFT nozzles of the reactor pressure vessel
- b. A basis of test data to affirm the acceptability of the plant's initial response to the CFT line break, where the only supply of water might be from one CFT and one high pressure injection (HPI) pump.
- c. Establishment of some method to assure an abundant supply of cooling water (i.e., much more than one HPI pump) to the core within 15 minutes of the postulated accident.

CP affirmed that the Midland reactor pressure vessels will have flow limiters installed in the CFT nozzles. The AEC staff acknowledged that the special test data generated in the Oconee 1 case (tests conducted by Westinghouse for Duke Power Co.) are adequate for item b. above. CP is still evaluating means of assuring an abundant supply of cooling water. They are concerned about space limitations in the Auxiliary Building and the Reactor Building. Their first choice is a manual method to realign the low pressure injection (LPI) system. CP was urged to consider fully automatic means of assuring the cooling water supply and reminded that, if a manual system is proposed, the procedures would have to be carefully evaluated to assure their practicality. CP will propose a method; they expressed a need for early resolution because of the related construction effort.

23. Operating Crew Size

CP was informed that operating crew size requirements will be established when the plants are reviewed for operating license. However, they can base their hiring, training and staff licensing plans on the following tentative crew sizes:

<u>1st Plant</u>	1 Senior Reactor Operator
	2 Reactor Operators
	2 Other Types
<u>Both Plants</u>	2 Senior Reactor Operators
	3 Reactor Operators
	3 Other Types

For refueling and fuel handling operations, a separate Senior Reactor Operator may be required.

24. Organizational Status

The organization of the new Bechtel - Ann Arbor office was discussed. This office contains about 560 people and presently handles three projects. Midland, Quanicassee, and Greenwood (1 fossil plus 2 nuclear). It is not a separate division but a field office of the San Francisco Division. An organizational chart was furnished and is enclosed.

B. Other Items

1. Piping and Vessel Code Classifications

Piping and Vessel Code Classifications as presented in Fig. 4.1-1 of the PSAR were current for the year 1970 when that figure was prepared for Amendment No. 7 to the PSAR. At this meeting CP presented six blueprint copies of a 1973 revision of that figure which reflects changes in ASME, State of Michigan, and AEC requirements since the 1970 edition. CP noted that equipment not purchased before 1971 must now be purchased to the 1971 ASME standards. CP must follow Michigan law in adopting code addenda 6 months after issuance. CP noted two specific items:

- a. The quench tank is downgraded, and
- b. CP takes exception to Safety Guide 26 where the guide calls for Quality Group C after the second valve downstream of the reactor coolant system; CP specified Quality Group D. It was agreed that the AEC should review the piping and vessel code classification changes.

2. ANSI N101 Coatings

CP asked for a discussion of coatings for surfaces within the reactor building which are exposed to the LOCA environment. In the discussion CP was informed that ANSI 101.2 is being adopted as a Regulatory Guide with only minor revision.

3. Project Schedule

CP stated that they presently plan to submit the FSAR for our review in the fall of 1976.



## AGENDA

### Group I 8:30 a.m. - 10:00 a.m.

1. Onsite meteorology program (p. 10)\*
2. Subsidence surveillance program (p. 12)
3. Review of Probable Maximum Flood calculation (p. 14)
19. Consideration of cooling pond against Safety Guide 27 criteria
4. Preoperational environmental monitoring program (p. 14 & CP)
5. Modification of water intake to reduce velocity (CP)

BREAK 10:00 a.m. - 10:15 a.m.

### Group II 10:15 a.m. - 12:00

11. Hydrogen suppression system (p. 38)
12. Fuel element failure detection system (p. 19)
13. Reactor coolant leakage detection system (p. 24)
14. Seismic instrumentation system (p. 13)
15. Containment isolation sealing (p. 27)
16. Sealed Compartment for reactor building sump line (p. 31)
17. R&D report on process steam gamma monitor (p. 78)
18. Toxic gas in control room (p. 16)

### Group III 1:15 p.m. - 2:15 p.m.

6. Relocation of 138 KV South Dow line (CP)
7. Detailed criteria and procedures for installation of protection and emergency power systems (p. 45)
8. Use of two emergency diesels to serve two plants (p. 43)

### Group IV 2:15 p.m. - 4:00 p.m.

9. Use of single Boarated Water Storage Tank to serve two plants
10. Diverse reactor trips (p. 41)
20. Effects of failure of non-Category I equipment
21. High energy line rupture outside containment
22. Core flooding tank line break
23. Operating crew size (p. 68)
24. Organizational status, particularly with regard to the new Bechtel office
25. Status of reference topical reports

\*Parenthetical references are to specific page of AEC Safety Evaluation Report or to construction permit (CP)

ENCLOSURE 2

ATTENDANCE LIST

Atomic Energy Commission

R. M. Bernero  
E. H. Markee  
M. Parsont  
H. E. Lefevre  
F. J. Miraglia  
A. Schwencer  
L. G. Hulman  
E. Hawkins  
C. Stepp  
T. Ippolito  
D. Basdekas  
B. J. Youngblood  
R. Zavadoski  
K. Murphy  
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Bechtel Corporation

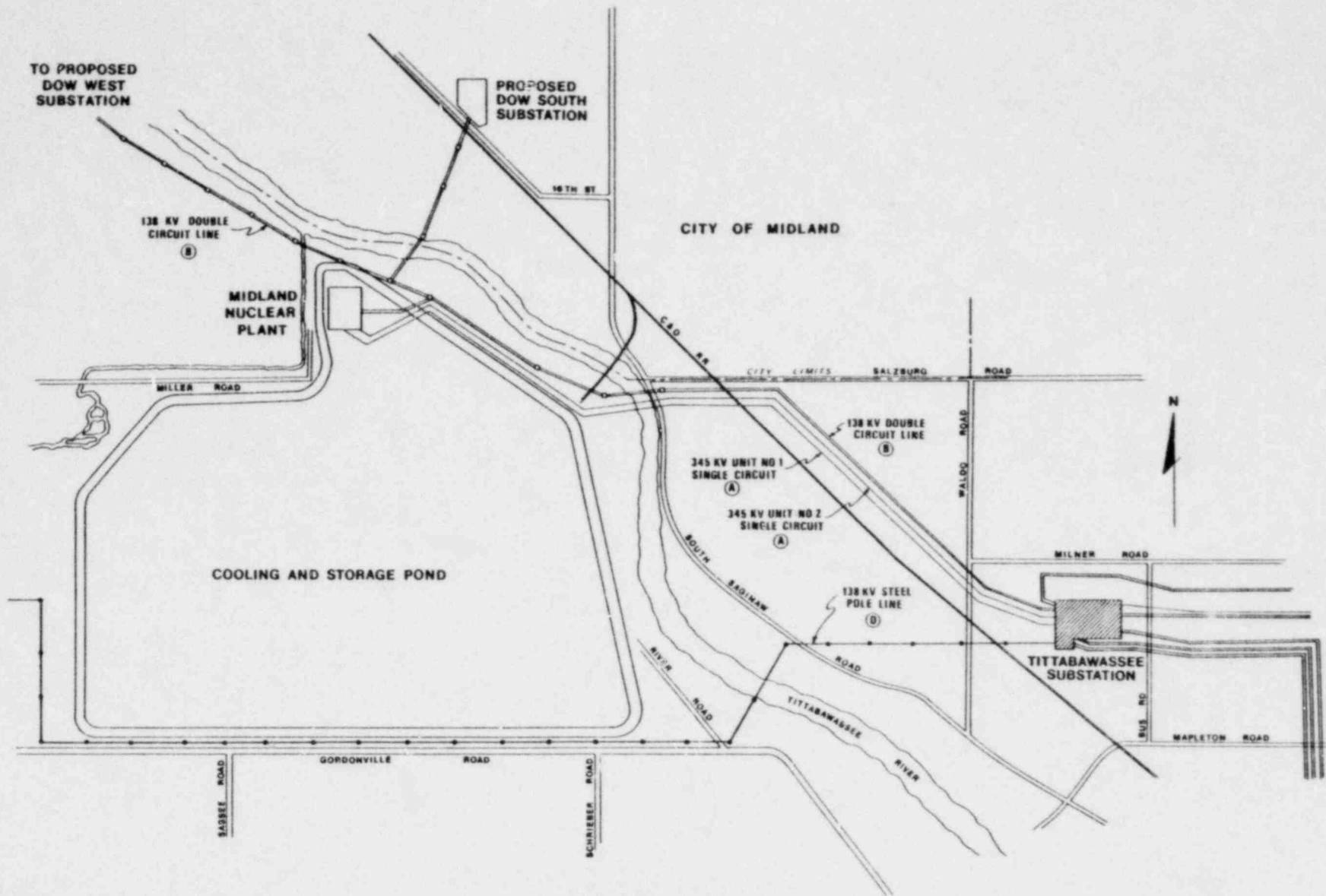
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R. L. Castleberry  
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J. L. Hurley  
P. C. Thompson

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B. Kessler  
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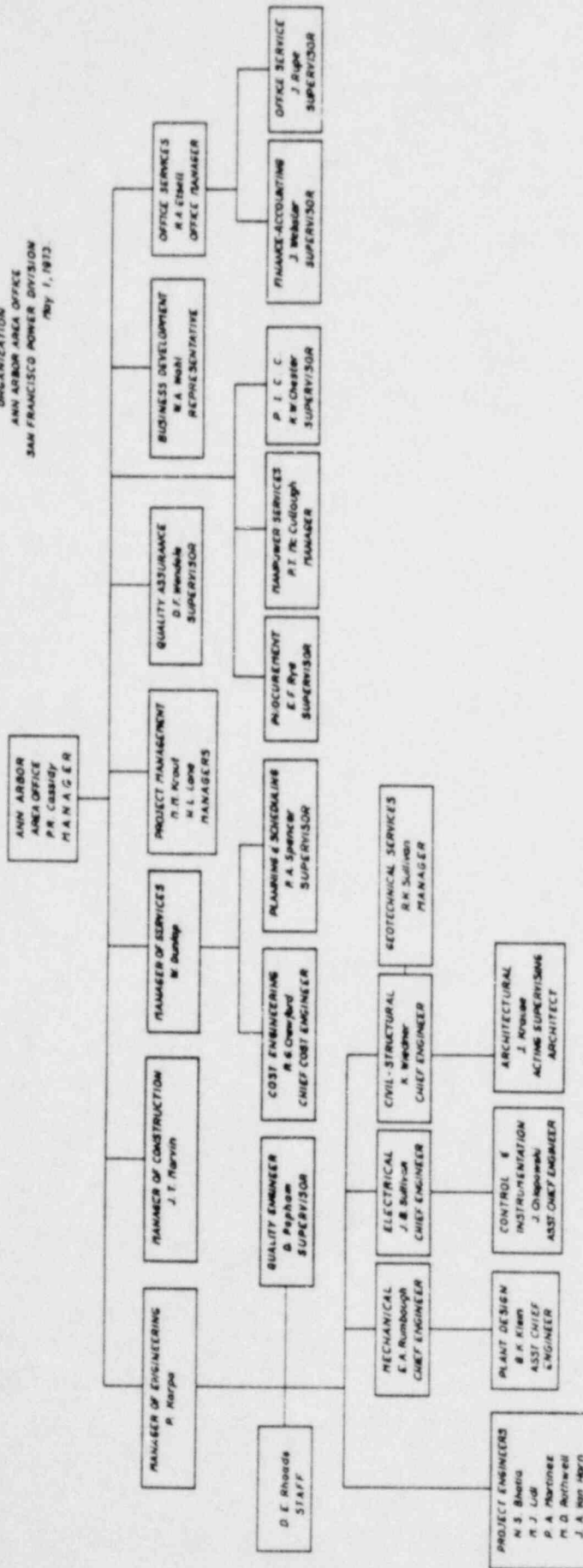
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C. E. Mahaney  
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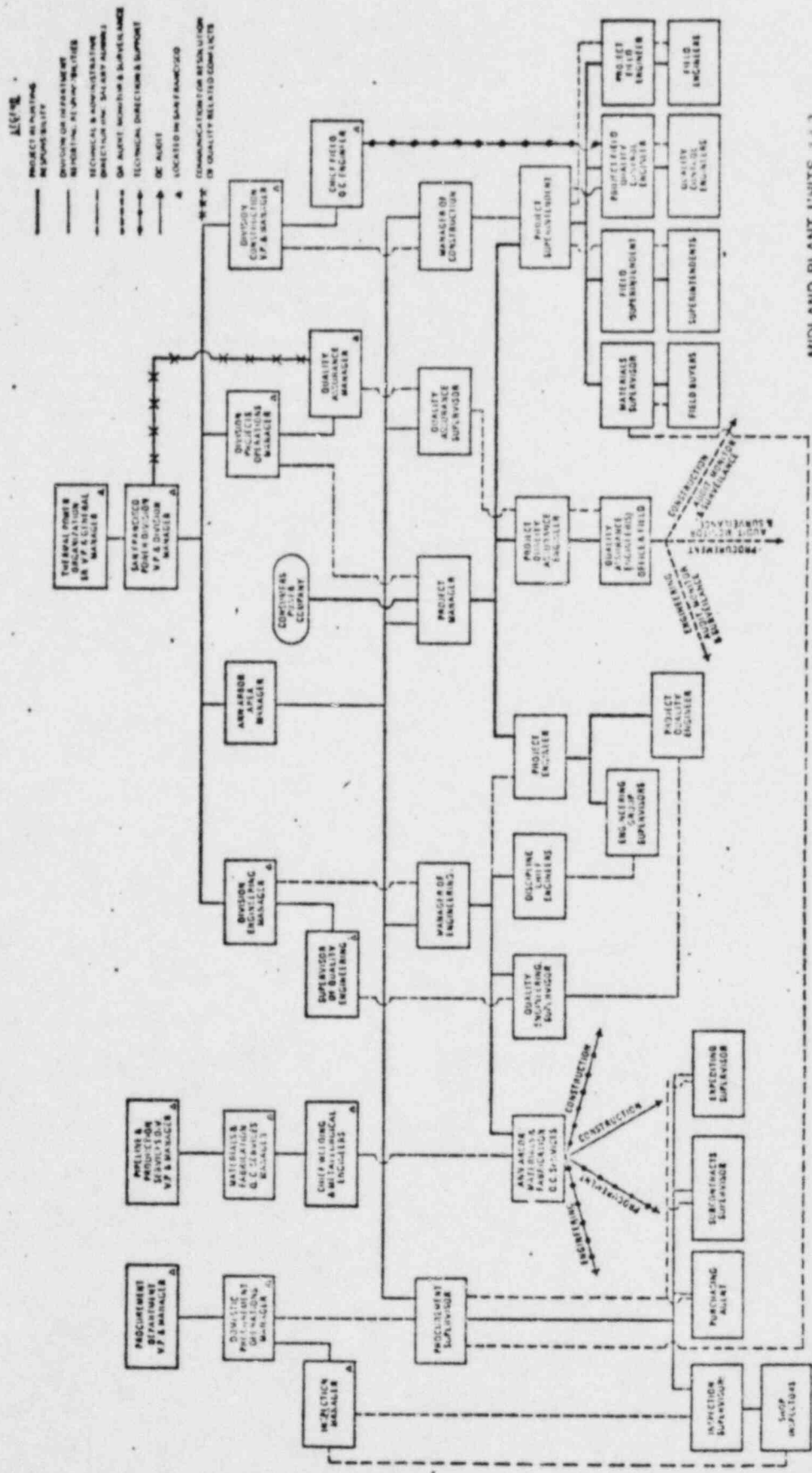


TRANSMISSION LINE MAP  
**MIDLAND PLANT**  
 REVISED PLAN

ORGANIZATION  
ANN ARBOR AREA OFFICE  
SAN FRANCISCO POWER DIVISION  
July 1, 1953







MIDLAND PLANT UNITS 102  
 REECEL ORGANIZATION CHART  
 for quality assurance  
 April 1973