

Lifetime
hungerwaters



NPC 28080

[Handwritten initials and marks]

Wisconsin Electric POWER COMPANY
231 N. MICHIGAN, P.O. BOX 2746, MILWAUKEE, WI 53201

September 16, 1981

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulation
U. S. NUCLEAR REGULATORY COMMISSION
Washington, D. C. 20555

Attention: Mr. R. A. Clark, Chief
Operating Reactors Branch 3

*Plant 5.5.1
(W. 3.3.9 LLC,
12.1.1 Gen)*

Gentlemen:

DOCKET NOS. 50-266 AND 50-301
ADDITIONAL INFORMATION
AUXILIARY FEEDWATER SYSTEM
POINT BEACH NUCLEAR PLANT, UNITS 1 AND 2

On July 30 we received your letter dated July 28, 1981, requesting additional information concerning automatic initiation of the auxiliary feedwater (AFW) system and flow indication for the AFW system at the Point Beach Nuclear Plant. You will note that some of the information you have requested has been previously provided to the NRC. Therefore, in several of the following responses we have referenced previous submittals.

The specific information requested and our response is as follows:

1. Is the auxiliary feedwater system and its automatic initiation circuitry considered to be part of the Engineered Safety Features (ESF)?

RESPONSE: Chapter Six of the Point Beach Nuclear Plant Final Facility Description and Safety Analysis Report (FFDSAR) describes the ESF systems included in the Point Beach Nuclear Plant design. The AFW system is not listed among these systems. However, as stated several times in our previous filings, including our December 31, 1979 NUREG-0578 letter at Item 2.1.7.a, the Point Beach AFW system is a safety-grade system which provides for automatic initiation and is designed to meet single-failure criteria. Testability of the initiating signals and circuits exists essentially to the same degree as for other safety-grade systems. We, therefore, consider the AFW system to be equivalent to systems specifically listed as ESF's in the FFDSAR.

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2. Are there any operating bypasses associated with the automatic initiation logic/circuitry during startup or operation of the reactor? If so, how are these bypasses removed (automatically, procedurally, etc.)?

RESPONSE: During plant startup, the control room switches for the main feedwater pumps are maintained in a "pull-out" condition. While the main feedwater pump switches are in this condition, automatic start of the motor-driven AFW pumps on only the associated unit is precluded. In the early stages of a unit startup, the motor-driven AFW pumps are used to control steam generator level. Steam generator feed is shifted to the main feedwater pumps by procedural step prior to latching the main turbine.

Once steam generator feed is shifted to the main feedwater pumps, bypass of the AFW automatic initiation signal is eliminated. There are no other operating bypasses associated with automatic AFW actuation. It should be noted that placing the main feedwater pump control switches in "pull-out" does not affect the automatic actuation of the steam-driven AFW pumps in either unit.

3. Describe the steam generator level instrumentation at Point Beach 1 and 2. This description should include:
- Type and number of level channels per steam generator including the range of each channel.
 - The specific source (vital bus) from which each of these channels is powered.
 - Capability for testing and calibration including interval between tests.
 - The specific indication available in the control room for each channel.

RESPONSE: The number of steam generator level channels and the specific power source for each of these channels was previously provided to the NRC at Item 2.1.7.b of our March 14, 1980 letter on NUREG-0576 implementation. Each of the three steam generator level channels consists of a differential pressure transmitter outputting a level Δp proportional 10-50 ma current to the protection, control and indication devices associated with each channel. The range of each channel is 0-100% over 143 inches of water level with the zero reference level at 372 inches of actual steam generator level. (A wide-range steam

generator level indication is also provided but does not input control, protection or actuation circuitry.) The testing and calibration requirements for the steam generator level channels are specified in the plant Technical Specifications at item 11 of Table 15.4.1-1. Control room indication for each of the steam generator level channels consists of a separate analog meter for each channel with a range of 0-100%.

4. Describe the AFW flow channels at Point Beach. This description should include:
- a) The specific source (vital bus) from which each channel is powered.
 - b) Capability for testing and calibration including interval between tests. Indicate whether this testing is required by the Point Beach Units 1 and 2 Technical Specifications.
 - c) The specific indication available in the control room for each channel.

RESPONSE: The Point Beach Nuclear Plant now has two levels of direct AFW flow indication available in the control room. AFW pump discharge flow indication is available for each pump. This flow channel was described in detail at item 2.1.7.b of our March 14, 1980 letter. A schematic of these channels, including the specific power sources, was provided with our December 31, 1979 letter. We have also recently completed the installation of flow indicators for AFW flow to each steam generator. These channels consist of four flow transmitters, one for each steam generator, with readouts in the control room. These flow channels are powered by the white or yellow vital instrument bus. A schematic of this AFW flow channel is attached. Channel check and calibration frequencies for the AFW flow channels were included in item 36 of Table 15.4.1-1 of our proposed Technical Specification changes submitted with our letter to the NRC dated February 4, 1981. Specific indications for each flow channel available in the control room consists of analog meters for each channel with a range of 0-300 gpm for the direct to steam generator flow, 0-200 gpm for the motor-driven AFW pump flow and 0-400 gpm for the steam-driven AFW pump flow.

5. Provide electrical one-line diagrams for 4160V AC, 480V AC, 120V AC and 125V DC.

RESPONSE: Electrical one-line diagrams are provided in Chapter Eight of the PFDGAR. For your convenience, we have reproduced these figures and enclosed them with

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this letter. Please refer also to our letter to Mr. Denton dated September 11, 1981, which enclosed an instrument bus diagram which reflected modifications to the instrument bus power supplies.

6. Provide Westinghouse drawings 110E163, Sheets 7, 10, and 12.

RESPONSE: The drawings are enclosed.

7. Provide electrical schematic/elementary diagrams of the AFW system annunciation circuits.

RESPONSE: This material was provided at the May 11, 1979 meeting with the NRC which was documented in Mr. Trammell's letter to Licensee dated May 15, 1979. For your convenience, we have enclosed an additional copy of this material.

8. List all periodic testing performed to demonstrate the operational availability of the Point Beach Units 1 and 2 AFW system, including testing of the automatic initiation logic. Indicate whether this surveillance is required by the Point Beach Units 1 and 2 Technical Specifications.

RESPONSE: The periodic testing performed to demonstrate the operational availability of the Point Beach AFW system, including testing of the automatic initiation logic, has been provided to the NRC previously. We reference Item 2.1.7 of our letter of December 31, 1979 for logic testing, our proposed Technical Specification changes submitted with our letter of February 4, 1981 as noted previously in this letter, and the proposed Technical Specifications for AFW pump operability included with our letter dated July 8, 1980.

In response to previous short-term and long-term AFW system recommendations, we committed by letters dated October 29, 1979 and February 4, 1980 to modify the bearing oil cooler water supply for the steam-driven AFW pumps to permit long-term operation of the AFW system without the need for AC power. Although the NRC Staff review of this item has not been completed, we reiterated in our April 9, 1981 letter that we were proceeding with this modification and included our reasons for using the firewater system and rejecting alternative designs. Completion of this modification has been delayed pending receipt of two pressure regulator valves. When the regulator valves are received, we will complete the installation in accordance with our previous commitments.

Mr. Harold R. Denton

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Should you have any questions regarding these responses which cannot be answered by checking with the referenced submittals or our previous letters, please contact us.

Very truly yours,



C. W. Fay, Director
Nuclear Power Department

Enclosures

Copy to NRC Resident Inspector (wo/e)

Blind copies to Messrs. C. S. McNeer
R. H. Gorske/A. W. Finke
Sol Burstein
D. K. Porter
G. A. Reed
Gerald Charneff.

(Copies of enclosure without drawings)

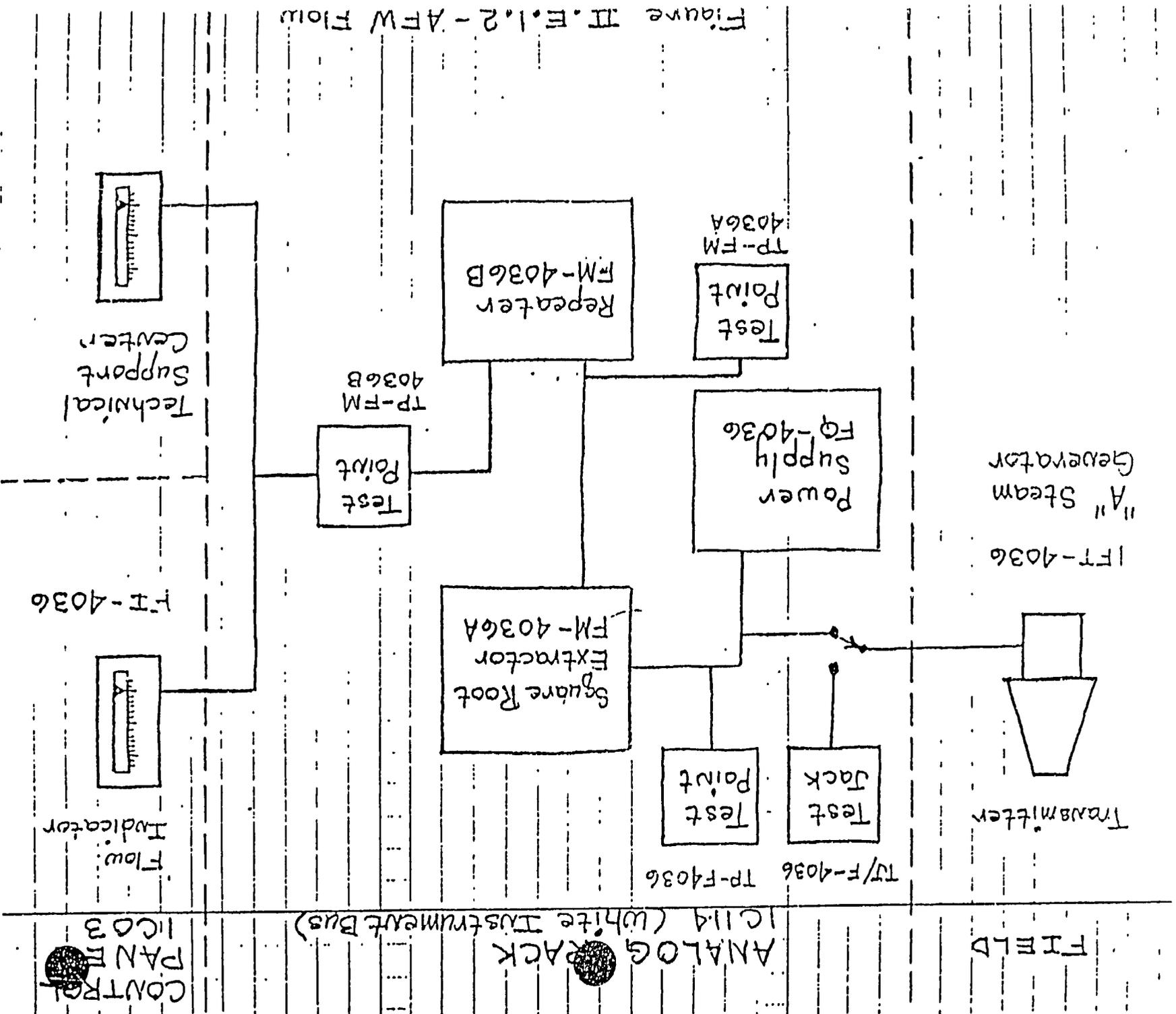
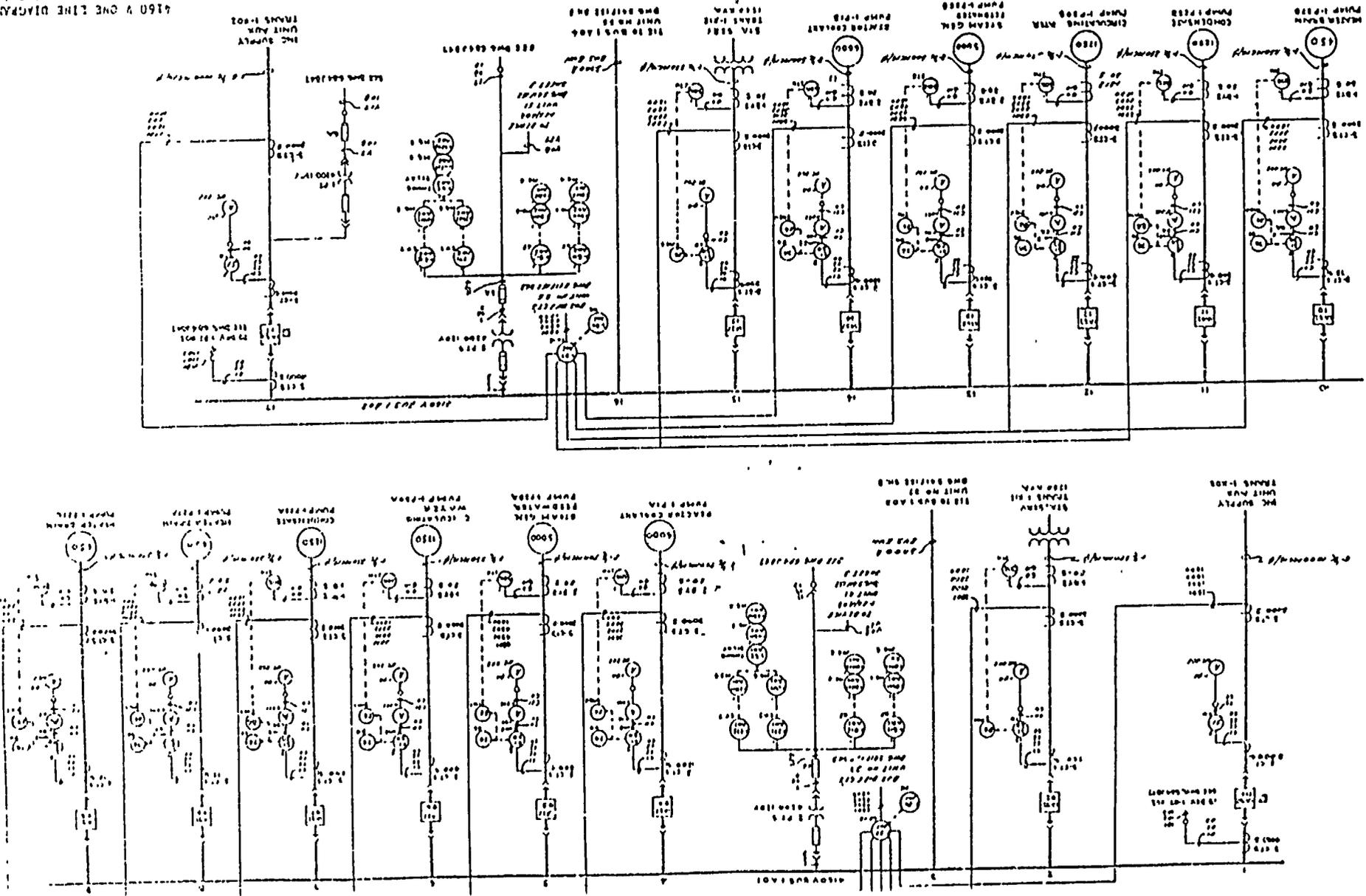
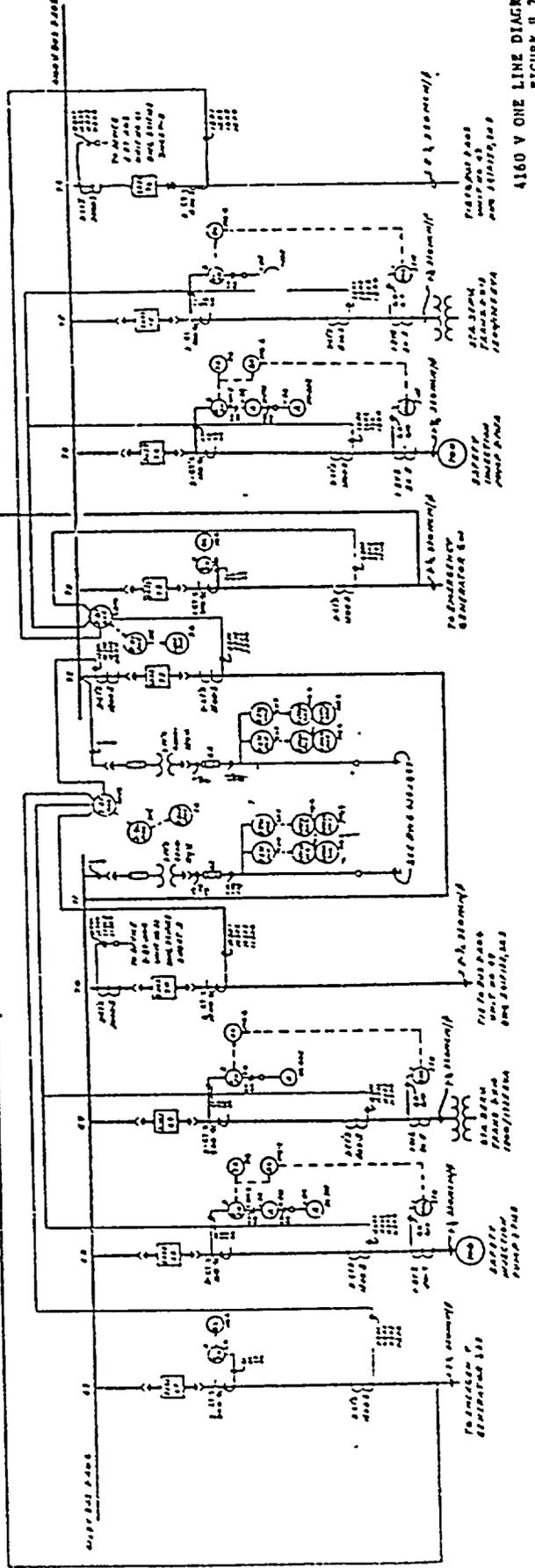
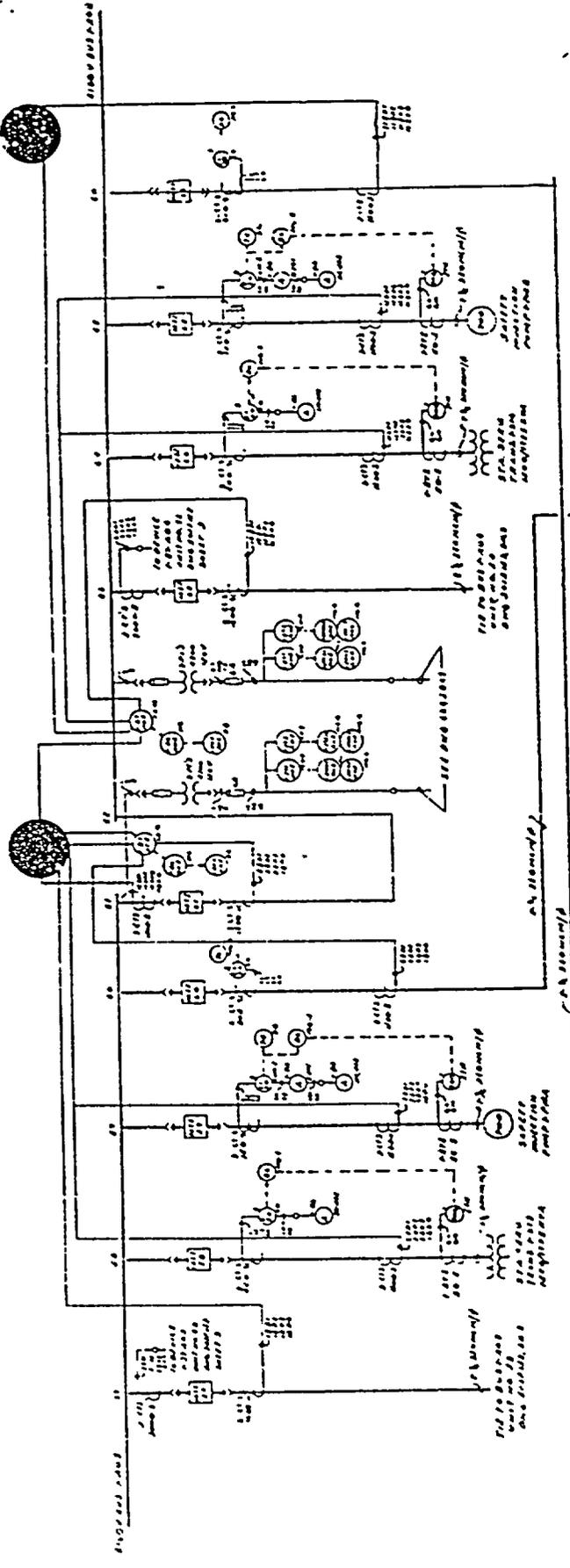


Figure II.E.1.2 - AFW Flow

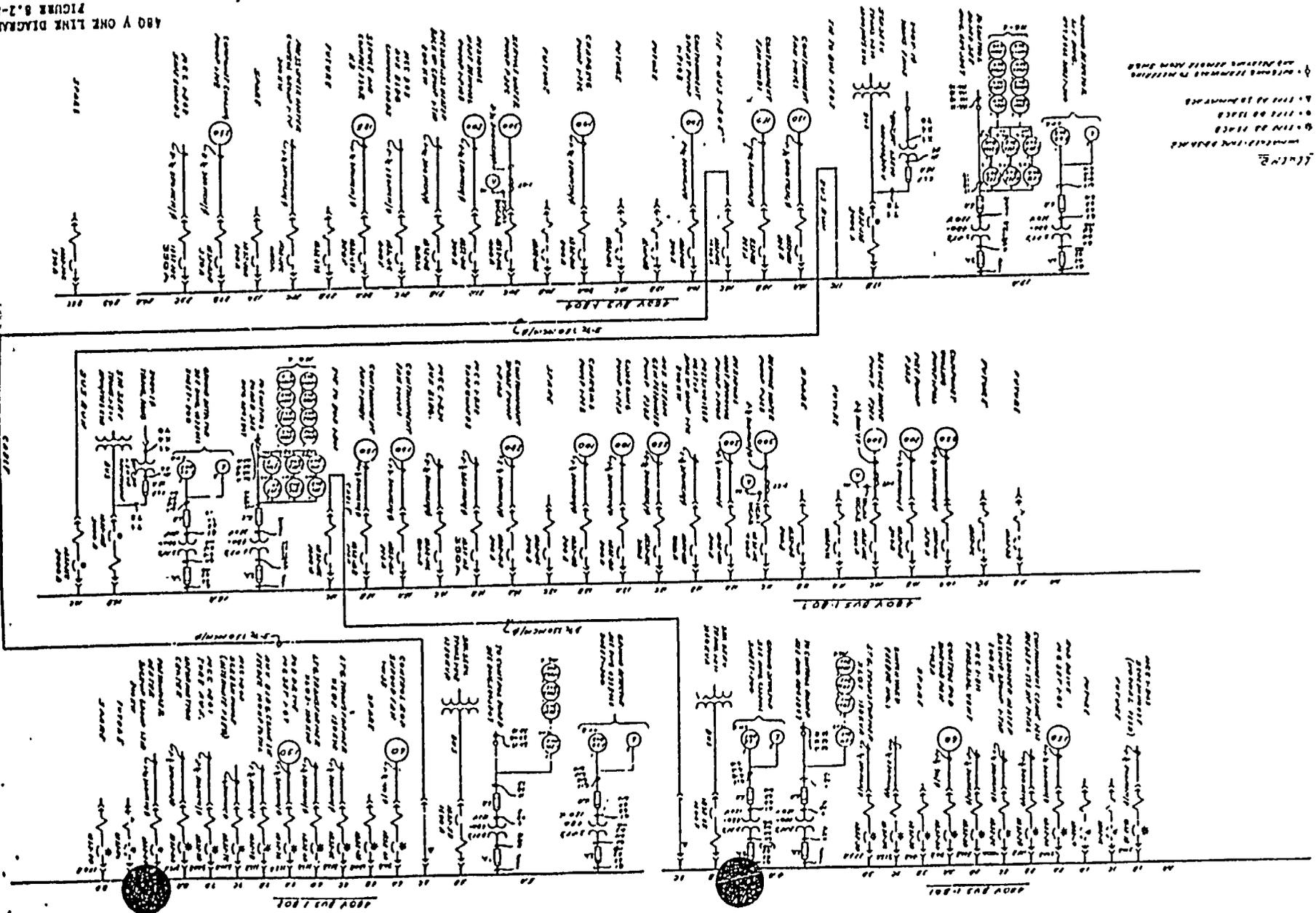
4160 V ONE LINE DIAGRAM
FIGURE 8.2-4





4160 V ONE LINE DIAGRAM
FIGURE 8.2-7

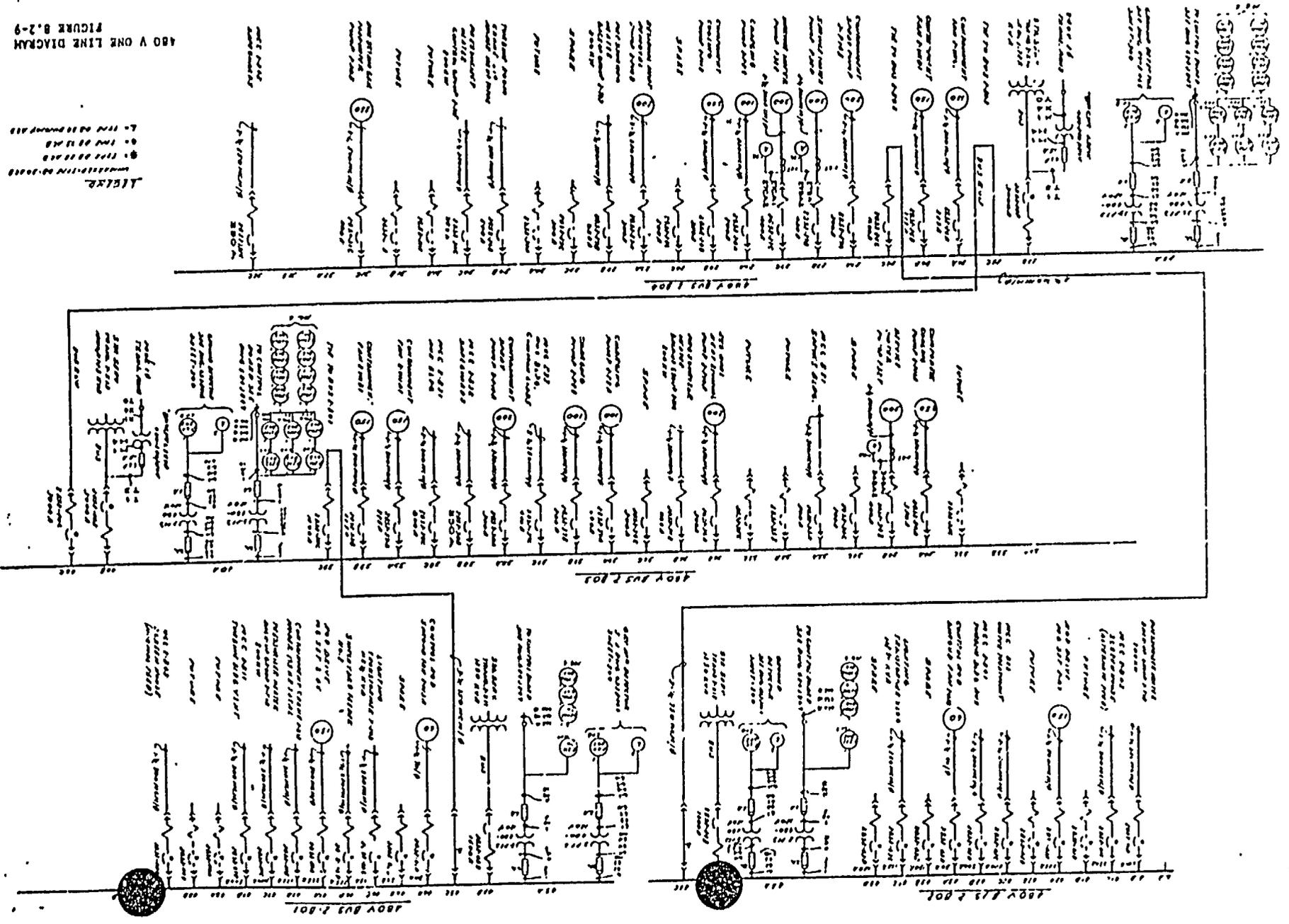
1 - WIRELESS TELEPHONE RECEIVING
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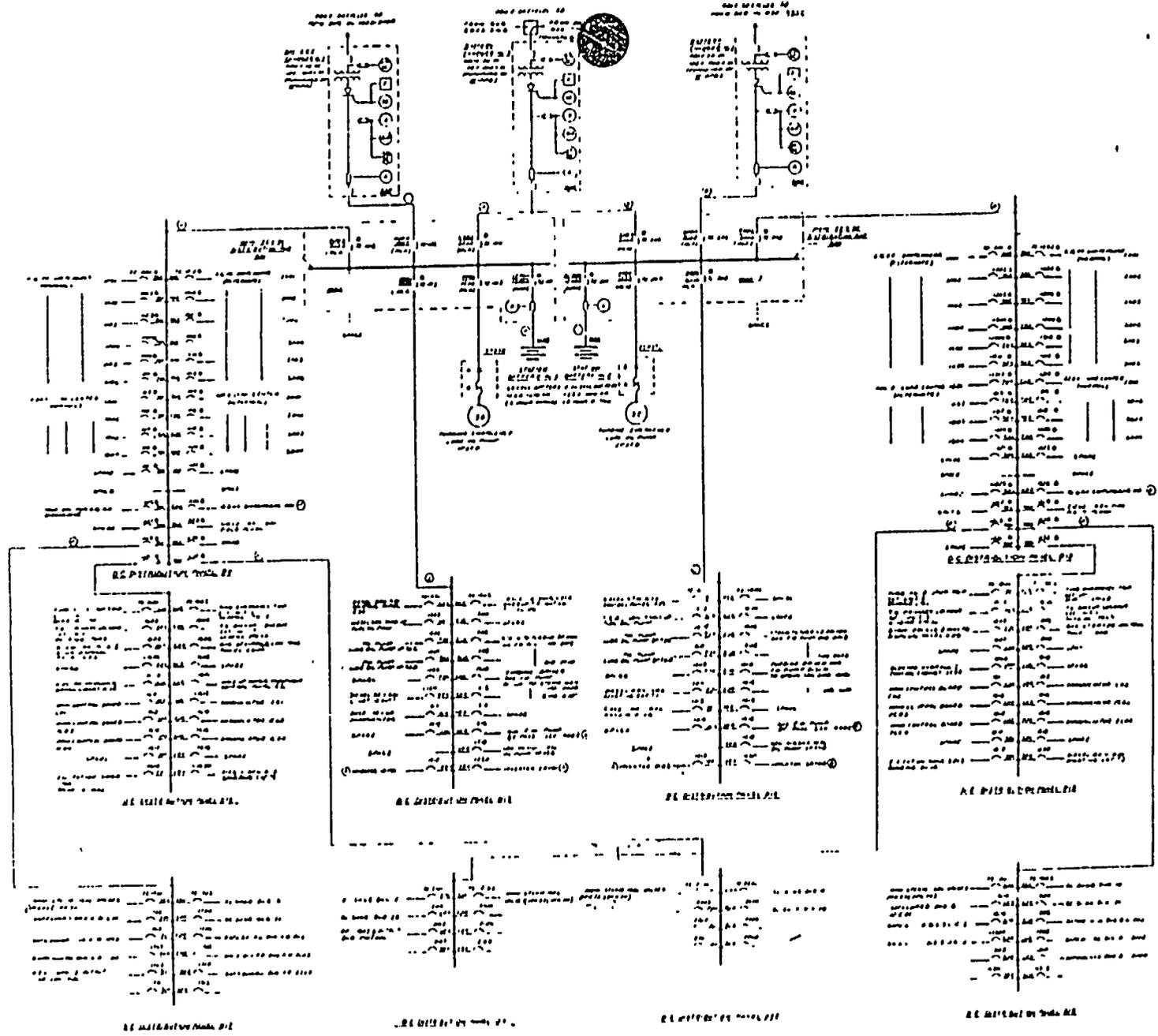


480 Y ONE LINE DIAGRAM
 FIGURE 8-2-B

180 V ONE LINE DIAGRAM
FIGURE 8.2-9

LEGEND
 ① LINE 000000
 ② LINE 000000
 ③ LINE 000000





- NOTES**
1. ALL WORK IS DONE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE NATIONAL FIRE ALARM AND SIGNAL CODE.
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- REVISIONS**
- | NO. | DATE | DESCRIPTION |
|-----|----------|----------------|
| 1 | 10/14/77 | INITIAL DESIGN |
| 2 | 10/14/77 | REVISIONS |

125 V D.C. ONE LINE DIAGRAM
FIGURE 2.2-10

October 14, 1977