

SIXTY-DAY RESPONSE
TO
NRC IE BULLETIN 80-11
DATED MAY 8, 1980
FOR
CONSUMERS POWER COMPANY
BIG ROCK POINT NUCLEAR PLANT

PREPARED BY: BECHTEL POWER CORPORATION
JUNE 30, 1980

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SIXTY-DAY RESPONSE

TO

NRC IE BULLETIN 80-11

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SIXTY-DAY RESPONSE

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1. INTRODUCTION

This report has been prepared in response to NRC IE Bulletin 80-11, dated May 8, 1980. It has been prepared by Bechtel Power Corporation, Ann Arbor, Michigan, for Consumers Power Company's (CPCo's) Big Rock Point Nuclear Plant.

This report submits information requested in Items 1, 2a, and 3 of NRC IE Bulletin 80-11, dated May 8, 1980.

A total of 24 potentially safety-related masonry wall segments have been identified. A masonry wall may be composed of several segments. For purposes of identification, total count, and re-evaluation, a masonry wall segment has been defined as a uniform, straight run of wall between support or terminal points.

2. IDENTIFICATION OF SAFETY-RELATED MASONRY WALLS AND THEIR SYSTEMS

Safety-related systems, components, and structures have been generally defined as those listed on the Big Rock Point plant Q list. The boundaries of seismic analyses performed in the course of responding to NRC IE Bulletin 79-14 have also been used where applicable in the determination of whether an item is safety related.

CPCo has designated potentially safety-related masonry walls at the Big Rock Point plant. CPCo has also performed a search for potentially safety-related masonry walls in safety-related areas not shown on the design drawings.

Safety-related systems which are either attached to, penetrate, or are in proximity to potentially safety-related masonry walls are listed in Appendix A.

For purposes of identification, proximity is defined as within an arc length equal to a masonry wall height from the base of each face of the masonry wall extending to the floor. Furthermore, in plan view, proximity is defined by lines normal to the masonry wall extending from the ends of the masonry wall. Proximity does not extend beyond compartments.

The potentially safety-related masonry walls do not generally support a structurally significant amount of equipment.

A. WALL INSPECTION

Identification of potentially safety-related masonry walls started in May 1980. This included a review of design drawings, the plant Q list, and a walkdown of the plant.

A team started a detailed inspection of masonry walls on June 23, 1980. The team is collecting, verifying, and recording information regarding the as-built condition of existing masonry walls and structurally significant attachments. The presence of safety-related items in proximity to or attached to the masonry walls is also documented.

In some instances, ALARA considerations require that time spent near a masonry wall be minimized and that the inspection be limited to visual observations from some distance away from the masonry wall. These observations were compared with the design drawings. Confidence was established that the data obtained are adequate for masonry wall re-evaluation, and it is not intended that a further inspection be made of these masonry walls.

B. WALL PLANS WITH IDENTIFICATION NUMBERS

Plans have been prepared to locate and number masonry walls (Appendix A). Only the masonry walls which were designated as potentially safety related are further discussed and documented in this report.

3. PRIORITIZED PROGRAM

A. PRIORITIZED ORDER OF REVIEW

Safety-related masonry walls will be re-evaluated using the following order of priority:

- 1) Masonry Walls Supporting Safety-Related Equipment with Estimated Design Loadings Greater than 100 Pounds, or Safety-Related Piping 2-1/2 Inches in Diameter or Greater
- 2) Masonry Walls Supporting Other Safety-Related Items
- 3) Masonry Walls with Safety-Related Equipment in Proximity

B. COMPLETION SCHEDULE

It is anticipated that the re-evaluation of safety-related masonry walls to acceptance criteria prepared by Bechtel Power Corporation will be completed by November 4, 1980.

4. RE-EVALUATION CRITERIA

A. GENERAL

The Big Rock Point plant Final Hazards Summary Report (FHSR) does not specifically address masonry walls. Loadings will be defined from the FHSR and existing analyses for Seismic Category I structures. Load combinations will contain the applicable elements specified in the FHSR.

B. ANALYSIS

Analyses will be performed using standard calculation procedures to determine the structural adequacy of the safety-related masonry walls. Masonry walls are considered to be isotropic, elastic material. Plate or beam theory will be used to satisfy static equilibrium under all loading conditions. Cracked and/or uncracked section analyses will be performed, as applicable, to determine the stresses in the masonry and in the reinforcing steel. Highly stressed areas will be checked against the corresponding allowable stresses.

C. JUSTIFICATION OF RE-EVALUATION CRITERIA

Justification for the re-evaluation criteria will be submitted with the re-evaluation report within 180 days of the date of the bulletin received. Justifications will be based on reference to existing codes and established standards of practice related to concrete and masonry design.

It is anticipated that such justification will be considered appropriate, and that a test program will not be necessary, except as required to determine project unique structural properties and any other properties for which data are not available or cannot otherwise be determined.

5. REFERENCES

- A. U.S. NRC IE Bulletin 80-11, dated May 8, 1980
- B. Big Rock Point Nuclear Plant, Final Hazards Summary Report, Docket 50-155

APPENDIX A

WALL PLANS AND INFORMATION TABLES FOR
POTENTIALLY SAFETY-RELATED MASONRY WALLS

The attached identifies safety-related equipment and systems associated with safety-related masonry walls. This listing is subject to revision.

The listing of systems associated with certain items is intended to reflect the primary system or systems associated with the particular item. For certain items, especially those associated with walls M100.14 and M100.18, a large list of systems would be required to completely define safety-related equipment in cabinets, conduits, and cable trays. For this report, the term "various" is used to include reactor cleanup, control rod drive, shutdown cooling, reactor coolant, core spray, emergency core cooling, and/or other systems which have circuitry combined in the conduits and cable trays noted in the attached tables.

These masonry walls do not generally support a structurally significant amount of nonsafety-related equipment. Therefore, attached nonsafety-related equipment and systems are not listed. Attached nonsafety-related equipment will be considered in the re-evaluation of these masonry walls.

The masonry wall number is the drawing number followed by a decimal, followed by the wall number indicated on the drawing.

WALL M100.1

<u>Item</u>	<u>System</u>
Conduit	Off-gas monitoring
Off-gas discharge monitor	Off-gas monitoring
Instrumentation	Off-gas monitoring

WALL M100.2

Item

Instrumentation

System

Off-gas monitoring

WALL M100.3

<u>Item</u>	<u>System</u>
Conduit	Reactor depressurization system
Uninterruptible power supply (UPS) battery charger/inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
One- and 2-inch pipe	Fire system

WALL M100.4

<u>Item</u>	<u>System</u>
Conduit	Reactor depressurization system
UPS battery charger/ inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
One- and 2-inch pipe	Fire system

WALL M100.5ItemSystem

Six-inch pipe

Fire system

Conduit

Reactor depressurization system

WALL M100.6

<u>Item</u>	<u>System</u>
One- and 2-inch pipe	Fire system
UPS battery charger/ inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
Conduit	Reactor depressurization system

WALL M100.7

<u>Item</u>	<u>System</u>
UPS battery charger/ inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
Conduit	Reactor depressurization system
One- and 2-inch pipe	Fire system

WALL M100.8

<u>Item</u>	<u>System</u>
UPS battery charger/ inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
Conduit	Reactor depressurization system
One- and 2-inch pipe	Fire system

WALL M100.9

<u>Item</u>	<u>System</u>
UPS battery charger/ inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
Conduit	Reactor depressurization system
One- and 2-inch pipe	Fire system

WALL M100.10

<u>Item</u>	<u>System</u>
UPS battery charger/ inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
Conduit	Reactor depressurization system
One- and 2-inch pipe	Fire system

WALL M100.11

<u>Item</u>	<u>System</u>
UPS battery charger/ inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
Conduit	Reactor depressurization system
One- and 2-inch pipe	Fire system

WALL M100.12

<u>Item</u>	<u>System</u>
UPS battery charger/ inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
Conduit	Reactor depressurization system
One- and 2-inch pipe	Fire system

WALL M100.13

<u>Item</u>	<u>System</u>
UPS battery charger/ inverter	Reactor depressurization system
UPS batteries	Reactor depressurization system
Conduit	Reactor depressurization system
One-, 2-, 3-, and 6-inch pipe	Fire system

WALL M100.14

<u>Item</u>	<u>System</u>
Three- and 6-inch pipe	Fire system
Four- and 6-inch pipe	Post-incident cooling
Batteries	Station power
Motor control center 125 V dc	Primary coolant system/ emergency condenser system
Conduit	Various
Cable tray	Various

WALL M100.15ItemSystem

Two-, 3-, and
6-inch pipe

Fire system

Conduit

Reactor depressurization system

WALL M100.16

<u>Item</u>	<u>System</u>
Rod position MG set	Reactor protection system
Three-inch pipe	Fire system
Four- and 6-inch pipe	Post-incident cooling
Conduit	Reactor depressurization system/ 2,400 V cable
Batteries	Station power
Cable tray	Various
Battery chargers	Station power
Ground detector	Station power

WALL M100.17

<u>Item</u>	<u>System</u>
Cable tray	Reactor depressurization system, 2,400 V
Four- and 6-inch pipe	Post-incident cooling
Conduit	Reactor depressurization system
Switchgear	Reactor feedwater and reactor circulation systems and station power transformers

WALL M100.18

<u>Item</u>	<u>System</u>
Load center, 480 V	Emergency condenser inlet
Motor control centers 1A, 2A, and 2B	Reactor cleanup, shutdown cooling, and containment spray
Junction boxes JB42, JB43, and JB44	Emergency core cooling and containment isolation
Switchgear	Reactor feedwater and reactor circulation systems and station power transformers
Conduit	Various
Cable tray	Various

WALL M100.19

<u>Item</u>	<u>System</u>
Four- and 6-inch pipe	Post-incident cooling
Three-inch pipe	Fire system
Cable tray	Various

WALL M100.20

<u>Item</u>	<u>System</u>
One-, 2-, 3-, 4-, and 6-inch pipe	Fire system
Four- and 6-inch pipe	Post-incident cooling
Cable tray	Various
Conduit	Systems (2,400 V)

WALL M100.21

<u>Item</u>	<u>System</u>
Two-, 4-, and 6-inch pipe and valves	Fire sys'em
Conduit	System (2,400 V)
Cable Tray	Various

WALL M101.1

Item

System

Control panels

Reactor depressurization system

WALL M101.3ItemSystem

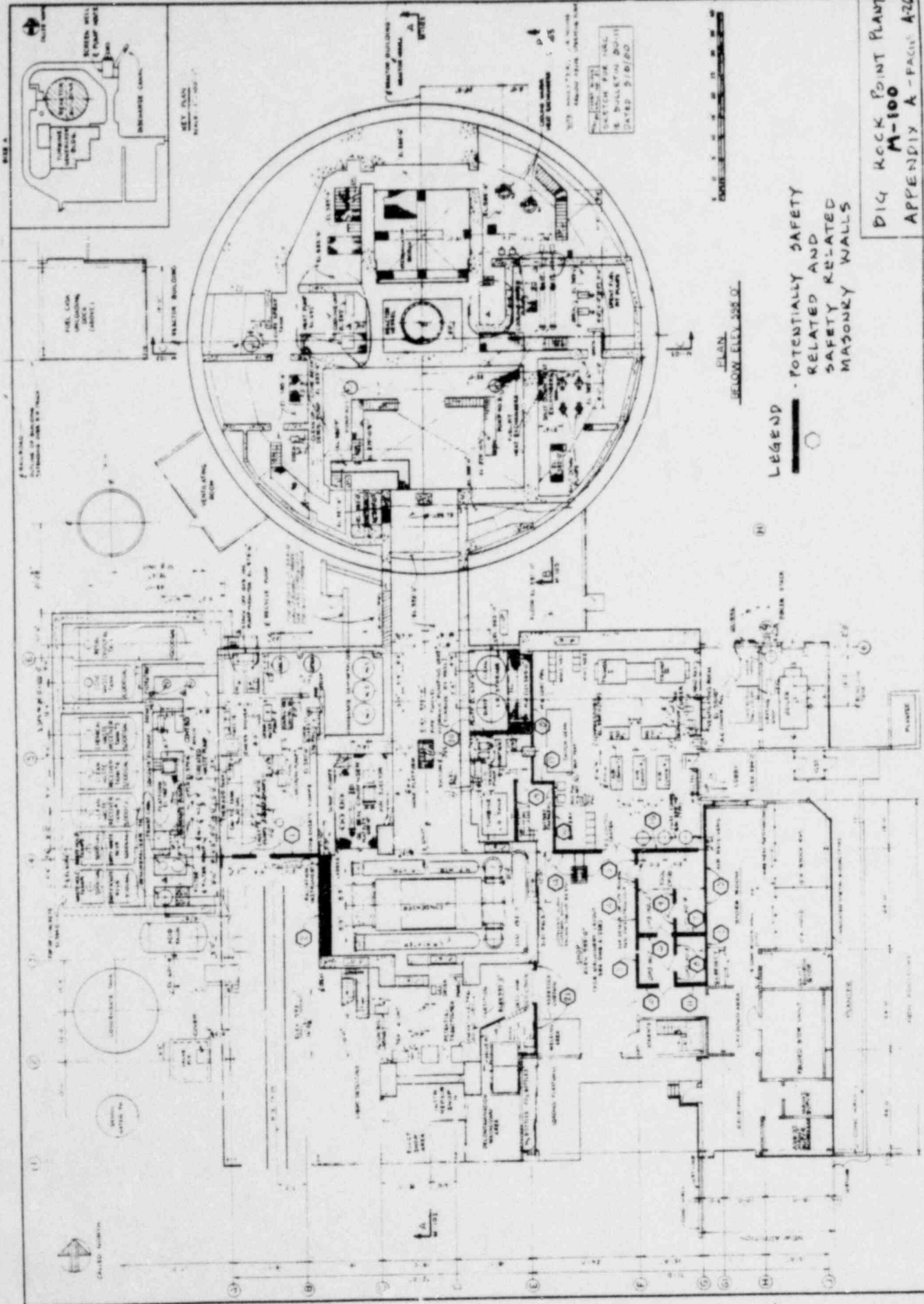
Downcomers

Primary coolant system

WALL M101.4ItemSystem

Heat exchangers

Primary coolant system



LEGEND

— POTENTIALLY SAFETY RELATED AND SAFETY RELATED MASONRY WALLS

○ SAFETY RELATED MASONRY WALLS

DIG ROCK POINT PLANT
 M-100
 APPENDIX A - PAGE 420

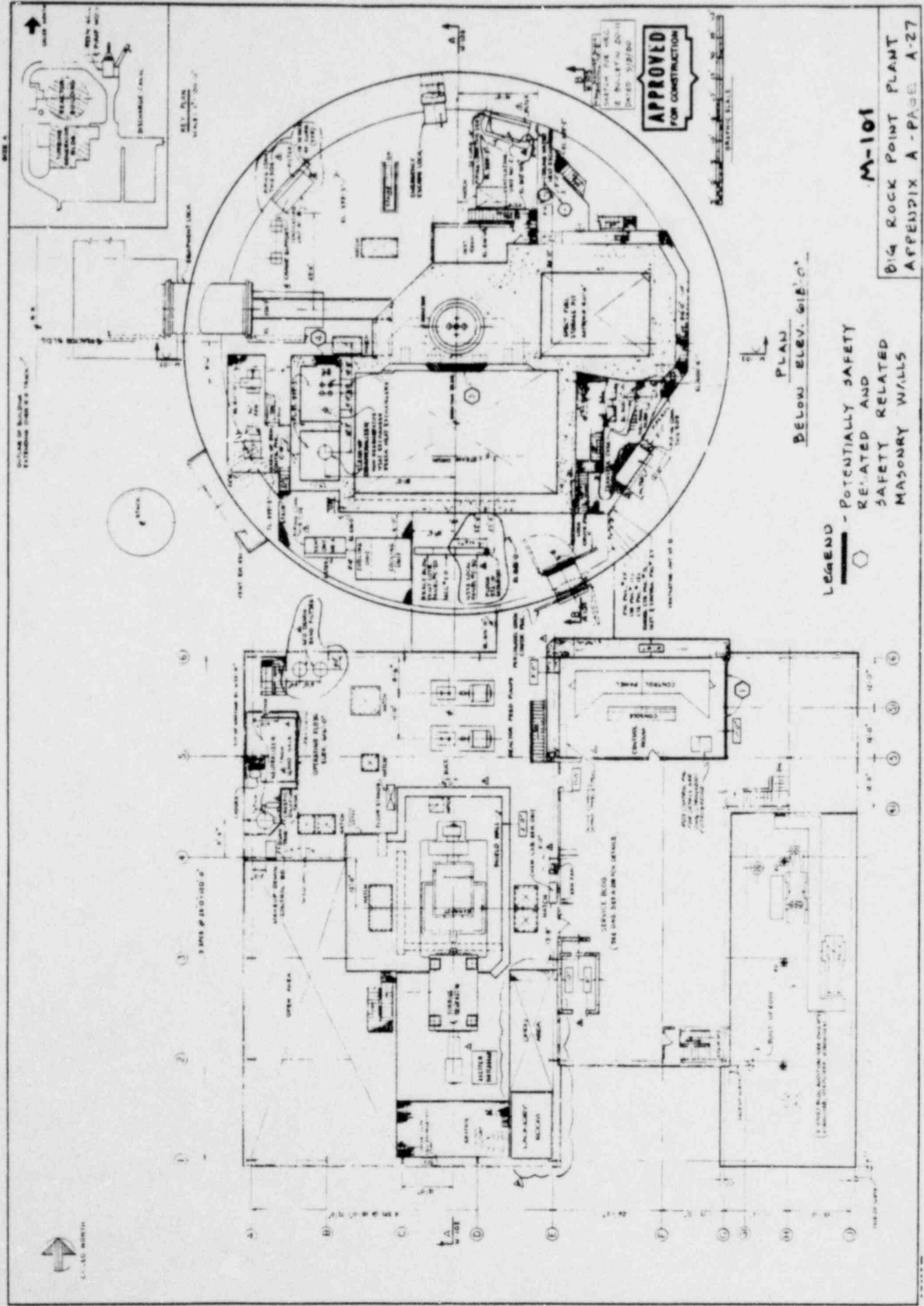
SCALE
 1" = 10'-0"

DATE: 3/10/60

DESIGNED BY: [Name]
 DRAWN BY: [Name]

KEY PLAN
 SCALE: 1" = 10'-0"

CHARTED SURVEY



**APPROVED
FOR CONSTRUCTION**

PLAN
BELOW ELEV. 618.0'

LEGEND
 ——— POTENTIALLY SAFETY
 RELATED AND
 SAFETY RELATED
 MASONRY WALLS
 ○

M-101

BIG ROCK POINT PLANT
APPENDIX A - PAGE A-27