

TEXAS UTILITIES SERVICES INC.

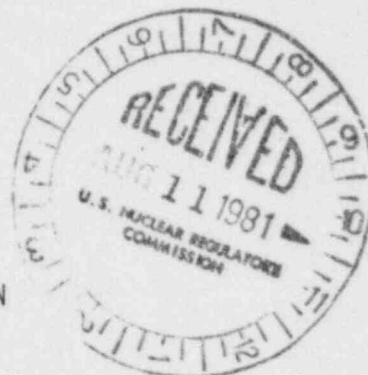
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August 7, 1981

Mr. Spottswood Burwell

Mr. Spottswood Burwell
Licensing Project Manager
U. S. Nuclear Regulatory Commission
Office of Nuclear Reactor Regulation
Washington, D.C. 20555



SUBJECT: COMANCHE PEAK STEAM ELECTRIC STATION
CONTROL OF HEAVY LOADS: NUREG-0612

Dear Mr. Burwell:

Please find attached the response to Enclosure 3 of NRC letter dated December 22, 1980.

If you have any questions, please call.

Sincerely,

H. C. Schmidt for
H. C. Schmidt

RWH

RWH/AND:tls

Attachment

cc: R. D. Calder
J. T. Merritt
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COMANCHE PEAK STEAM ELECTRIC STATION
CONTROL OF HEAVY LOADS: NUREG-0612

RESPONSE TO ENCLOSURE 3 of
NRC LETTER DATED DECEMBER 22, 1980

INTRODUCTION

In a letter dated December 22, 1980, the NRC requested applicants for operating licenses to submit a report documenting their compliance with NUREG-0612, "Control of Heavy Loads at Nuclear Power Plants." This report should include the information identified in Section 2.1 thru 2.4 of Enclosure 3 of the letter (Request for Additional Information on Control of Heavy Load). The letter specified that the report be submitted in two parts according to the following schedule:

Part I - Submit Section 2.1 information within six months from the date on the letter.

Part II - Submit Section 2.2, 2.3 and 2.4 information within nine months.

In addition, applicants are to complete necessary changes and modifications to plant equipment within two years of submittal of Section 2.4 of Part II above.

This submittal provides the response to Part I of the requirement, which consists of information on compliance with Section 5.1.1 of NUREG-0612.

COMMENT: 1. Report the results of your review of plant arrangements to identify all overhead handling systems from which a load drop may result in damage to any system required for plant shutdown or decay heat removal (taking no credit for any interlocks, technical specifications, operating procedures, or detailed structural analysis).

RESPONSE: The overhead handling systems at CPSES from which a heavy load drop could result in damage to systems required for plant shutdown or decay heat removal are summarized in Table 1. Also listed in Table 1 are cranes which are capable of carrying loads in or near spent fuel storage areas.

COMMENT: 2. Justify the exclusion of any overhead handling system from the above category by verifying that there is sufficient physical separation from any load-impact point and any safety-related component to permit a determination by inspection that no heavy load drop can result in damage to any system or component required for plant shutdown or decay heat removal.

RESPONSE: Table 2 lists the overhead handling systems at CPSES which maintain sufficient physical separation from systems required for plant shutdown or decay heat removal to prevent damage to these systems, as determined by visual inspection. Therefore, these overhead handling systems have been excluded from the category of load handling systems listed in Table 1.

COMMENT: 3. With respect to the design and operation of heavy-load-handling systems in the containment and the spent-fuel-pool area and those load-handling systems identified in 2.1-1 above, provide your evaluation concerning compliance with the guidelines of NUREG 0612, Section 5.1.1. The following specific information (Comments 3[a] through 3[g]) should be included in your reply.

RESPONSE: Our evaluation of compliance with NUREG 0612 concerning heavy load handling systems at CPSES is presented in the responses to the specific requests for information (Comments 3[a] through 3[g]) listed below.

Comment 3(a): Drawings or sketches sufficient to clearly identify the location of safe load paths, spent fuel, and safety-related equipment.

Response 3(a): "Safe load areas" (areas serviced by a particular crane in which a load drop will not result in damage to shutdown or decay heat removal equipment or spent fuel) have been identified where applicable for the cranes listed in Table 1. Equipment handled by these cranes will be transported whenever possible within the identified safe load areas. "Safe load paths" will be established for equipment handled outside the safe load areas and will be incorporated in the particular load handling procedures.

Safe load paths will also be identified for those loads which will require a load drop analysis in order to satisfy the NUREG-0612 requirements. These safe load paths will be

described and illustrated as part of any load drop analysis performed in response to the Part II requirements of the NRC December 22, 1980 letters.

Each crane listed in Table 1 is described below with a discussion of the safe load areas along with referenced drawings to identify their location within the plant.

A. Fuel Building Overhead Crane -
(CPX-MESCFC-01)

This crane is shown in Figure 1 along with the safe load area illustrated by the cross-hatched region. Although this crane does not travel directly over the spent fuel pools, a safe load area has been defined outside the spent fuel pool areas. The safe load area includes the fuel receipt and inspection areas and the shipping cask receipt and decontamination area.

B. Containment Auxiliary Upper Crane -
(CP1&2-MESCCA-01)

This crane and its associated safe load areas are shown in Figure 2. The area serviced by this crane includes the reactor vessel and therefore the potential exists for a heavy load drop into the vessel. As a result, the safe load area is defined outside of the reactor vessel area as indicated by the cross-hatched area in Figure 2.

C. Containment Polar Crane -
(CP1&2-MESCCP-01)

The area in the containment building serviced by this crane, along with its safe load area, is shown in Figure 3. The Polar Crane essentially travels the entire diameter of the Containment Building above elevation 905' and has the potential for heavy load drops over the reactor vessel, steam generators, reactor coolant pumps and piping, main steam lines, and the Containment fuel storage area. Therefore, the safe load areas have been defined outside of these areas as shown in Figure 3. When spent fuel is not being stored in the Containment fuel storage area, this crane can safely traverse this area with a heavy load.

D. Containment Fuel Handling Bridge Crane -
(CP1&2-MESCCF-01)

This crane is designed for lifting a fuel assembly and component and associated handling tool. These loads are excluded from consideration as "heavy loads" as defined in NUREG 0612 and therefore safe load areas are not required.

E. Containment Building Refueling Machine -
(TBX-FHSCMC-01)

This crane is shown on Figure 2. This crane is specifically designed to handle fuel assemblies and therefore does not handle "heavy loads" as defined in NUREG 0612.

F. Containment Dome Rotating Platform Hoist -
(CP1&2-MESCRP-01)

This hoist traverses over the same areas covered by the Containment Polar Crane and therefore has the same safe load areas as illustrated in Figure 3.

G. Service Water Intake Structure Crane -
(CPX-MESCSW-01)

This crane is shown on Figure 4 along with the safe load areas. Since most of the equipment serviced by this crane is safety related Service Water pumps and piping, only small portions of the intake structure can be considered as safe load areas as illustrated in the cross-hatched areas in Figure 4.

H. Fuel Building Fuel Handling Bridge Crane -
(TBX-FHSCFB-01)

This crane is shown on Figure 1. The crane is designed to handle a fuel assembly and components with its associated handling tool and therefore does not carry "heavy loads" as defined in NUREG 0612. No safe load areas are therefore required.

For the hoists listed in Table 1, the establishment of safe load areas is not practical since the hoists generally travel along a single mono-rail which allows the hoist to follow only one possible path. Locations of the hoists with respect to plant shutdown equipment, decay heat removal equipment, or spent fuel storage areas are shown in the figures listed below for each hoist identified in Table 1.

- | | |
|--|-----------|
| A. Moderating HX and Letdown HX
Hoist (CP1&2-MEMCH-16) | Figure 5 |
| B. Component Cooling Water Pump
Hoist (CPX-MMHCH-01) | Figure 6 |
| C. Safety Related Chiller
Hoist (CP1&2-MEMHCH-04) | Figure 7 |
| D. Centrifugal Charging Pump
Hoist (CP1&2-MEMHCH-01,02) | Figure 6 |
| E. Safety Injection Pump Hoist
(CP1&2-MEMHCH-06,07) | Figure 8 |
| F. Residual Heat Removal Pump Hoist
(CP1&2-MEMHCH-08,09) | Figure 8 |
| G. Auxiliary Feedwater Pump Hoist
Electric - (CP1&2-MEMHCH-13,14) | Figure 8 |
| H. Auxiliary Feedwater Pump Hoist
Turbine - (CP1&2-MEMHCH-12) | Figure 8 |
| I. Auxiliary Building Filters Hoist
(CPX-MEMHWR-04) | Figure 9 |
| J. Diesel Generator Hoist
(CP1&2-MEMHCH-37,38) | Figure 10 |
| K. Spent Fuel Pool HX Hoist
(CPX-MEMHCH-43,44) | Figure 11 |
| L. Service Water Traveling
Screen Hoist (CPX-MEMHCH-12) | Figure 4 |

- M. Residual Heat Removal and Containment Figure 5
Spray HX Hoist (CP1&2-MEMHCH-47,59)
- N. Main Steam Safety Valve Hoist Figure 12
(CP1&2-MEMHCH-48,49,50,51)
- O. Service Water Intake Stop Gate Hoist Figure 4
(CPX-MEMHCH-61)
- P. Reactor Coolant Pump Hoist Figure 3
(CP1&20MEMHC-42) (See Note Below)

Note: Reactor Coolant Pump Hoist (CP1&2-MEMHCH-42)
is attached to the Containment Polar Crane
during certain Reactor Coolant Pump
maintenance operations.

Comment 3(b): A discussion of measures taken to ensure that load-handling operations remain within safe load paths, including procedures, if any, for deviation from these paths.

Response 3(b): Through the use of administrative controls, heavy loads will be transported whenever possible within "safe load areas" established in response to Comment 3(a) above. The "safe load areas" will be clearly identified for each crane by a combination of placards, procedures, and marked off areas near plant shutdown and decay heat removal equipment or where spent fuel is stored.

However, for some heavy loads, it may be necessary to operate outside the "safe load areas" and transport the heavy load over or near plant shutdown or decay heat removal equipment or spent fuel. In that event, special precautions or procedures will be utilized with the purpose of minimizing the risk of a heavy load drop in these areas. The procedures will consist of load drop prevention measures such as a list of required equipment, inspections, acceptance criteria for the movement of the load, sequence of steps, etc. "Safe load paths" will also be established with the purpose of transporting equipment over safe shutdown or decay heat removal equipment or spent fuel via the safest and shortest route to the nearest "safe load area". The equipment will then be transported within the "safe load area" to its final destination.

The "safe load paths" will be clearly defined in the load handling procedures that will be written for loads handled over safety equipment or spent fuel. As stated in response to Comment 3(a), "safe load paths" will be defined and illustrated as necessary as part of any load drop analysis performed in response to Part II requirements of the NRC December 22, 1980 letter concerning "Heavy Loads at Nuclear Power Plants".

Comment 3(c): A tabulation of heavy loads to be handled by each crane which includes the load identification, load weight, its designated lifting device, and verification that the handling of such load is governed by a written procedure containing, as a minimum, the information identified in NUREG 0612, Section 5.1.1(2).

Response 3(c): Table 4 lists the cranes and hoists identified in Table 1 including the major loads projected to be lifted by each handling system. Also included is the approximate weight of each of the loads identified. As stated in the response to Comment 3(b), special precautions and procedures will be utilized when handling these loads over or near safe shutdown equipment, decay heat removal equipment, or spent fuel storage areas.

Comment 3(d): Verification that lifting devices identified in 2.1.3(c) above comply with the requirements of ANSI N14.6-1978, or ANSI B30.9-1971 as appropriate. For lifting devices where these standards, as supplemented by NUREG 0612, Section 5.1.1(4) or 5.1.1(5), are not met, describe any proposed alternatives and demonstrate their equivalency in terms of load-handling reliability.

Response 3(d): Lifting devices for the loads identified in response to Comment 3(c) above will comply with ANSI B30.9-1971 where applicable. Although a special lifting device for a spent fuel shipping container weighing 10,000 pounds or more has not as yet been procured, ANSI N14.6-1978 will be invoked when this special lifting device is obtained. Although it is anticipated at this time that the standards for the lifting devices will be met, it may later be determined that alternatives to the standard are required. In that event, written notification will be made to the Nuclear Regulatory Commission describing the alternatives and their equivalency in terms of load handling reliability.

CPSES and Westinghouse Nuclear Division are currently reviewing the design and construction specifications of the Reactor Vessel Head and Reactor Internals lifting rigs. The results of this review will be submitted with the Part II response of CPSSES compliance with NUREG-0612.

Comment 3(e): Verification that ANSI B30.2-1976, Chapter 2-2, has been invoked with respect to crane inspection, testing, and maintenance. Where any exception is taken to this standard, sufficient information should be provided to demonstrate the equivalency of proposed alternatives.

Response 3(e): ANSI B30.2-1976, Chapter 2-2, will be invoked with respect to crane inspection, testing and maintenance.

With respect to Section 2-2.1.1.1 of ANSI B30.2-1976, cranes located within Containment will be inspected per the required visual inspection schedule only during the periods of crane operation (generally during refuelings and cold shutdowns). This is necessary because periodic inspections during power operations are impractical due to high radiation levels in Containment.

No other exceptions to the standard are anticipated at this time, however, if it is later determined that exceptions are required, written notification will be made to the Nuclear Regulatory Commission.

Comment 3(f): Verification that crane design complies with the guidelines of CMAA Specification 70 and Chapter 2-1 of ANSI B30.2-1976, including the demonstration of equivalency of actual design requirements for instances where specific compliance with these standards is not provided.

Response 3(f): Table 3 lists the load handling systems identified in Table 1 and their applicable codes and standards as specified in the CPSES Equipment Purchase Specifications. In all cases the cranes design complies with the guidelines of CMAA Specification 70 and chapter 2-1 of ANSI B30.2-1976. Exception is taken for "Fuel Building Fuel Handling Bridge Crane", (TBX-FHSCFB-01) and "Containment Building Refueling Machine", (TBX-FHSCMC-01), because this equipment is designed for the handling of a fuel assembly and its associated handling tool. By definition in NUREG-0612, this load is not considered as a "heavy load".

Comment 3(g): Exceptions, if any, taken to ANSI B30.2-1976 with respect to operator training, qualification, and conduct.

Response 3(g): No exceptions to ANSI B30.2-1976 with respect to operator training, qualifications, and conduct are anticipated at this time, however, if it is later determined that exceptions are required, written notification will be made to the Nuclear Regulatory Commission.

TABLE 1

OVERHEAD LOAD HANDLING SYSTEMS WITH POTENTIAL FOR LOAD DROP ON SPENT FUEL OR SYSTEMS
REQUIRED FOR PLANT SHUTDOWN OR DECAY HEAT REMOVAL

<u>Crane/Hoist Name</u>	<u>Crane/Hoist I. D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>	<u>Equipment and/or Piping Along The Load Path</u>
1. Fuel building overhead crane.	CPX-MESCFC-01	Fuel building	Above 860'	130-17-5	Spent fuel pool cooling piping Spent fuel transfer area
2. Containment auxiliary upper cranes	CP1-MESCCA-01 CP2-MESCCA-01	Containment building	Above 905'-9"	5	Reactor vessel
3. Containment polar cranes	CP1-MESCCP-01 CP2-MESCCP-01	Containment building	950'-7"	175-20	Reactor vessel Steam generator Reactor coolants pumps Reactor coolant piping
4. Moderating HX. and letdown chiller HX hoist.*	CP1-MEMHCH-16 CP2-MEMHCH-16	Safeguards building	831'-6"	2	Train "A" electrical tray (cabling for AUX* Feedwater System, Component Cooling Water System Motor operated valves) located near the monorail
5. Component cooling water pump hoist	CPX-MEMHCH-01	Auxiliary building	810'-6"	4	Component cooling (CCW) water pump and associated piping
6. Safety related chiller hoist	CP1-MEMHCH-04 CP2-MEMHCH-04	Auxiliary building	778'	1 1/2	CCW piping connected to the chiller. Chiller.

*HX. = Heat Exchanger, AUX = Auxiliary

TABLE 1 (continued)

<u>Crane/Hoist Name</u>	<u>Crane/Hoist I. D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>	<u>Equipment and/or Piping Along The Load Path</u>
7. Centrifugal charging pumps hoist.	CP1-MEMHCH-01, 02 CP2-MEMHCH-01, 02	Auxiliary building	810'-6"	4	Centrifugal charging pump and associated piping and valves.
8. Containment fuel handling bridge crane	CP1-MESCCF-01 CP2-MESCCF-01	Containment building	Above 860'	1 1/2	Containment fuel transfer area and fuel rack.
9. Safety injection pumps hoist.	CP1-MEMHCH-06, 07 CP2-MEMHCH-06, 07	Safeguards building	773'	3	Service water piping.
10. Residual heat removal pumps hoist.	CP1-MEMHCH-08, 09 CP2-MEMHCH-08, 09	Safeguards building	773'	3	RHR pump and associated piping and valves.
11. Auxiliary feedwater pump hoist. (electric motor driven pump)	CP1-MEMHCH-13, 14 CP2-MEMHCH-13, 14	Safeguards building	790'-6"	4	Motor driven auxiliary feed-water pumps, piping and valves
12. Auxiliary feedwater pump hoist. (turbine driven pump)	CP1-MEMHCH-12 CP2-MEMHCH-12	Safeguard building	790'-6"	3	Turbine driven auxiliary feed-water pump, piping and valves.
13. Auxiliary building filters hoist.	CPX-MEMHWR-04	Auxiliary building	852'-6"	8	Various systems filters.
14. Reactor coolant pumps hoist.	CP1-MEMHCH-42 CP2-MEMHCH-42	Containment building	905'-9"	40	Same as previous crane. See Note 1.

TABLE 1(continued)

<u>Crane/Hoist Name</u>	<u>Crane/Hoist I. D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>	<u>Equipment and/or Piping Along The Load Path</u>
15. Diesel generator (piston) hoist.	CP1-MEMHCH-37, 38 CP2-MEMHCH-37, 38	Safeguards building	810'-6"	1	Diesel generator and its associated piping and instrumentation.
16. Spent fuel pool HX. hoist.*	CPX-MEMHCH-43, 44	Fuel building	838'-9"	4	Spent fuel pool heat exchangers, piping and valves.
17. Service water traveling screen hoist.	CPX-MEMHCH-12	Outside of service water structure.	838'	20	Traveling screen.
18. Residual heat removal (RHR) HX. and Containment Spray System (CSS) hoist.	CP1-MEMHCH-47, 59 CP2-MEMHCH-47, 59	Safeguards building	831'-6"	10	RHR & CSS heat exchanger and its associated piping and valves.
19. Main steam safety valves hoist.	CP1-MEMHCH-48, 49, 50, 51 CP2-MEMHCH-48, 49, 50, 51	Safeguard building	880'-6"	1	Main steam safety valves.
20. Service water intake structure crane.	CPX-MESCSW-01	Service water structure	Above 796'	7 1/2	Service water pumps and its associated piping and valves.
21. Containment dome access rotating platform hoist.	CP1-MESCRP-01 CP2-MESCRP-01	Containment building	1000'	1	Reactor vessel. Fuel storage rack. Steam generator. Reactor coolant pumps. Reactor coolant piping

TABLE 1 (continued)

<u>Crane/Hoist Name</u>	<u>Crane/Hoist I. D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>	<u>Equipment and/or Piping Along The Load Path</u>
22. Fuel building Fuel handling Bridge crane	TBX-FHSCFB-01	Fuel building	Above 860'	2	Spent fuel pool Refueling canal New fuel storage pit
23. Containment building Refueling machine	TBX-FHSCMC-01	Containment building	Above 860'	2	Reactor vessel Containment fuel transfer area.
24. Service water intake stop gate hoist.	CPX-MEMHCH-61	Service water Intake structure	789' - 9"	8	Service water pumps.

NOTE: 1. Reactor Coolant Pumps Hoist is attached to the Polar Crane Hooks during the maintenance operation of the Reactor Coolant Pump.

TABLE 2
OVERHEAD LOAD HANDLING SYSTEMS
CRANES AND HOISTS WHICH DO NOT REQUIRE ADDITIONAL REVIEW AND EVALUATION

<u>Crane/Hoist Name (*)</u>	<u>Crane/Hoist I.D.No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>
1. Drumming storage area crane.	CPX-MESCD5-01	Fuel building	831'	15
2. Maintenance building bridge crane.	CPX-MESCMB-01	Maintenance building	N/A	25
3. Turbine building gantry crane.	CP1-MESCTC-01 CP2-MESCTC-01	Turbine building	830'	Main hoist - 210 Aux. hoist - 50
4. Circulating water intake structure gantry crane.	CPX-MESCCW-01	Circulating water intake structure.	810'	Main hoist: Inside span - 25 Outside span - 12 Auxiliary hoist: 5
5. Equipment hatch door hoist.	CP1-MEMHCH-41	Containment building	832'-6" @ 223°	10
6. Waste gas compressor hoist.	CPX-MEMHCH-05	Auxiliary building	831'-6"	1
7. Positive displacement charging pump hoist.	CP1-MEMHCH-03 CP2-MEMHCH-03	Auxiliary building	810'-6"	6

*Equipment in or near the load path is not required for safe shutdown or decay heat removal.
Also the load does not travel in or near spent fuel storage area.

TABLE 2 (continued)

<u>Crane/Hoist Name*</u>	<u>Crane/Hoist I.D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>
8. H ₂ Recombiner hoist.	CPX-MEMHCH-07	Auxiliary building	831'-6"	1
9. Letdown chiller package hoist.	CP1-MEMHCH-05 CP2-MEMHCH-05	Auxiliary building	852'-6"	2
10. H&V chiller hoist (near H-A line).	CPX-MEMHCH-09	Auxiliary building	873'-6"	6
11. H&V chiller hoist (near J-A line).	CPX-MEMHCH-10	Auxiliary building	873'-6"	1
12. Let down HX. and** seal water HX. hoist.	CP1-MEMHCH-15 CP2-MEMHCH-15	Safeguard building	810'-6"	1 1/2
13. Condenser vacuum pumps hoist.	CP1-MEMHCH-25 CP2-MEMHCH-25	Turbine building	778'	4
14. Turbine plant cooling water pump hoist.	CPX-MEMHCH-11	Turbine building	778'	6
15. Water drain pump hoist.	CP1-MEMHCH-28 CP2-MEMHCH-28	Turbine building	778'	4
16. Control fluid tank pumps hoist.	CP1-MEMHCH-29 CP2-MEMHCH-29	Turbine building	778'	3
17. Personnel lock hoist	CP1-MEMHCH-30 CP2-MEMHCH-30	Safeguard building	831'-6" @ 317°	2

**HX - Heat Exchanger

TABLE 2 (continued)

<u>Crane/Hoist Name</u>	<u>Crane/Hoist I.D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>
18. Reactor vessel studs hoist.	CP1-MEMHJC-01 CP2-MEMHJC-01	Containment building See dwg. - A1-0505	905'-9"	1/2
19. Steam generator feed water pump and turbine drivers hoist.	CP1-MEMHOC-01 CP2-MEMHOC-01	Turbine building	803'	10
20. Equipment hatch @ 790'-6" for misc. equipment hoist	CP1-MEMHCH-45 CP2-MEMHCH-45	Safeguard building	790'-6"	4
21. Equipment hatch @ 810'-6" for misc. equipment hoist.	CP1-MEMHCH-46 CP2-MEMHCH-46	Safeguard building	810'-6"	4
22. Equipment hatch @ 87'-6" for misc. ventilation equipment hoist.	CPX-MEMHCH-52	Auxiliary building	873'-6"	1
23. Equipment hatch @ 886'-6" for misc. ventilation equipment hoist.	CPX-MEMHCH-53	Auxiliary building	886'-6"	1
24. Decontamination of misc. equipment hoist.	CPX-MEMHCH-54	Unit 2, turbine building	810' (see drawing A2-0403)	2
25. Decontamination of misc. equip. hoist.	CPX-MEMHCH-55	Unit 2, turbine building	8.0'-6"	1/4

TABLE 2 (continued)

<u>Crane/Hoist Name</u>	<u>Crane/Hoist I.D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>
26. Dry waste compactor hoist.	CPX-MEMHCH-56	Fuel building	810'-6"	2
27. Chlorine containers hoist.	CPX-MEMHCH-57	Service water chlorination building	823'-9"	2
28. Chlorine containers hoist.	CPX-MEMHCH-58	C c. water chlorination building	809'-6"	2
29. Auxiliary steam condensate cooler hoist.	CPX-MEMHCH-60	Auxiliary building	778'	1
30. Containment equip. hatch hoist.	CPX-MEMHCH-67 CPX-MEMHCH-68	Outside containment	-	40
31. Wall puller for let down seal water HX and let down chiller HX.	CP1-MEMHLH-01 CP2-MEMHLH-01	Safeguard building	831'-6"	3/4
32. Demineralizers hoist.	CPX-MEMHWR-05	Auxiliary building	852'-6"	8
33. Radial arm stud tensioner hoists.	TBX-FHHCAH-01	Containment building	Below 860'	2

TABLE 3
OVERHEAD LOAD HANDLING SYSTEMS
APPLICABLE CODE AND STANDARDS

<u>Crane/Hoist Name</u>	<u>Crane/Hoist I. D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (tons)</u>	<u>Code and Standard</u>
1. Fuel building overhead crane.	CPX-MESCFC-01	Fuel building	Above 860'	130-17-5	CMAA* Spec. No. 70 and ANSI B30.2-1976, Chapter 2-1.
2. Containment auxiliary upper cranes.	CP1-MESCCA-01 CP2-MESCCA-01	Containment building	Above 905'-9"	5	CMAA Spec. No. 70 and ANSI B30.2-1976, Chapter 2-1.
3. Containment polar cranes.	CP1-MESCCP-01 CP2-MESCCP-01	Containment building	950'-7"	175-20	CMAA Spec. No. 70 and ANSI B30.2-1976, Chapter 2-1.
4. Moderating HX. and letdown chiller HX hoist.*	CP1-MEMHCH-16 CP2-MEMHCH-16	Safeguards building	831'-6"	2	CMAA Spec. No. 70.
5. Component cooling water pump hoist.	CPX-MEMHCH-01	Auxiliary building	810'-6"	4	CMAA Spec. No. 70.
6. Safety related chiller hoist.	CP1-MEMHCH-04 CP2-MEMHCH-04	Auxiliary building	778'	1 1/2	CMAA Spec. No. 70.
7. Centrifugal charging pumps hoist.	CP1-MEMHCH-01, 02 CP2-MEMHCH-01, 02	Auxiliary building	810'-6"	4	CMAA Spec. No. 70.

*HX. = Heat Exchanger, AUX = Auxiliary, CMAA = Crane Manufacturers Association of America.

TABLE 3 (continued)

<u>Crane/hoist Name</u>	<u>Crane/Hoist I.D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>	<u>Code and Standard</u>
8. Containment fuel handling bridge crane.	CP1-MESCCF-01 CP2-MESCCF-01	Containment building	Above 860'	1 1/2	CMAA Spec. No. 70 ANSI B30.2-1976, Chapter 2-1.
9. Safety injection pumps hoist.	CP1-MEMHCH-06, 07 CP2-MEMHCH-06, 07	Safeguards building	773'	3	CMAA Spec. No. 70.
10. Residual heat removal pumps hoist.	CP1-MEMHCH-08, 09 CP2-MEMHCH-08, 09	Safeguards building	773'	3	CMAA Spec. No. 70.
11. Auxiliary feedwater pump hoist. (Electric motor driven pump).	CP1-MEMHCH-13, 14 CP2-MEMHCH-13, 14	Safeguards building	790'-6"	4	CMAA Spec. No. 70.
12. Auxiliary feedwater pump hoist. (Turbine driven pump).	CP1-MEMHCH-12 CP2-MEMHCH-12	Safeguards building	790'-6"	3	CMAA Spec. No. 70.
13. Auxiliary building filters hoist.	CPX-MEMHWR-04	Auxiliary building	852'-6"	8	CMAA Spec. No. 70
14. Reactor coolant pumps hoist.	CP1-MEMHCH-42 CP2-MEMHCH-42	Containment building	905'-9"	40	CMAA Spec. No. 70.
15. Diesel generator (piston) hoist.	CP1-MEMHCH-37, 38 CP2-MEMHCH-37, 38	Safeguards building	810'-6"	1	CMAA Spec. No. 70.

TABLE 3 (continued)

<u>Crane/Hoist Name</u>	<u>Crane/Hoist I.D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>	<u>Code and Standard</u>
16. Spent fuel pool HX. hoist.*	CPX-MEMHCH-43, 44	Fuel building	833'-9"	4	CMAA Spec. No. 70.
17. Service water traveling screen hoist.	CPX-MEMHCH-12	Outside of service water structure.	838'	20	CMAA Spec. No. 70.
18. Residual heat removal (RHR) HX. and Contain- ment Spray System (CSS) hoist.	CP1-MEMHCH-47, 59 CP2-MEMHCH-47, 59	Safeguards building	831'-6"	10	CMAA Spec. No. 70.
19. Main steam safety valves hoist.	CP1-MEMHCH-48, 49, 50, 51 CP2-MEMHCH-48, 49, 50, 51	Safeguard building	880'-6"	1	CMAA Spec. No. 70.
20. Service water intake structure crane.	CPX-MESCSW-01	Service water structure	Above 796'	7 1/2	CMAA Spec. No. 70 and ANSI B30.2-1976, Chapter 2-1.
21. Containment dome access rotating platform hoist.	CP1-MESCRP-01 CP2-MESCRP-01	Containment building	1000'	1	CMAA Spec. No. 70.
22. Fuel building (**) fuel handling bridge crane.	TBX-FHSCFB-01	Fuel building	Above 860'	2	CMAA Spec. No. 70.

**This equipment is designed for handling a fuel assembly and its associated handling tool.

TABLE 3 (continued)

<u>Crane/Hoist Name</u>	<u>Crane/Hoist I.D. No.</u>	<u>Location</u>	<u>Elevation</u>	<u>Capacity (Tons)</u>	<u>Code and Standard</u>
23. Containment building(**) refueling machine.	TBX-FHSCMC-01	Containment building	Above 860'	2	CMAA Spec. No. 70
24. Service water intake stop gate hoist.	CPX-MEMHCH-61	Service water intake structure	789'-9"	8	CMAA Spec. <u>No.</u> 70

NOTE: 1. Reactor Coolant Pumps Hoist is attached at the Polar Crane Hooks during the maintenance operation of the Reactor Coolant Pump.

TABLE 4
OVERHEAD LOAD HANDLING SYSTEM
PROJECTED LOADS AND WEIGHTS

	<u>Crane/Hoist Equipment</u>	<u>I.D. Number</u>	<u>Location</u>	<u>Elevation</u>	<u>Projected Loads</u>	<u>Approx. Load Wts.</u>	<u>* Anticipated Lifting Devices</u>
1.	Fuel Building Overhead Crane	CPX-MESCCF-01	Fuel Building	860'	A. Spent Fuel Cask B. New Fuel Assembly and Handling Tool C. New Fuel Shipment Cask D. Fuel Transfer Canal Stop Gates.	250,000 lbs. 1,700 lbs. 6,700 lbs. 12,000 lbs. 12,000 lbs.	SLD NR S S S
2.	Containment Auxiliary Upper Crane	CP1-MESCCA-01 CP2-MESCCA-01	Containment	905'	A. Reactor Vessel Stud Tensioning Device B. Reactor Vessel Stud Transport Baskets C. Reactor Vessel Studs	4,000 lbs. 4,440 lbs. 740 lbs.	S S S
3.	Containment Polar Crane	CP1-MESCCP-01 CP2-MESCCP-01	Containment	950'	A. Reactor Vessel Head and Lifting Rig B. Internals Lifting Rig C. Reactor Vessel Upper Internals D. Reactor Vessel Lower Internals E. Reactor Coolant Pump Internals 1. Pump Stator 2. Rotating Element F. Reactor Coolant Pump Motor and Lifting Rig 1. Stator 2. Rotor 3. Fly Wheel 4. Air Coolers G. Reactor Coolant Pump Motor Stand H. Fuel Storage Area Stop Gate	260,000 lbs. 150,000 lbs. 132,000 lbs. 280,000 lbs. 55,200 lbs. 47,600 lbs. 7,600 lbs. 87,500 lbs. 48,000 lbs. 31,500 lbs. 16,125 lbs. 1,000 lbs. 11,000 lbs. 12,000 lbs.	NR NR SLD SLD S S S SB S S S S S S

TABLE 4 (CONT.)

	<u>Crane/Hoist Equipment</u>	<u>I.D. Number</u>	<u>Location</u>	<u>Elevation</u>	<u>Projected Loads</u>	<u>Approx. load Wts.</u>	<u>*Anticipated Lifting Device</u>
4.	Moderating Heat Exchanger Hoist	CP1-MEMHCH-16 CP2-MEMHCH-16	Safeguards	831'	A. Moderating HX Channel Head B. Moderating HX Tube Bundle C. Moderating HX Shell	268 lbs. 1,515 lbs. 2,558 lbs.	S S S
5.	Component Cool- Water Pump Hoist	CPX-MEMHCH-01	Auxiliary Bldg.	810'	A. Component Cooling Water Pump B. Component Cooling Water Pump Base C. Component Cooling Water Pump Motor D. Valves - 24 In. E. Emergency Fan/Coil Unit Motor	6,500 lbs. 3,300 lbs. 7,500 lbs. 1,040 lbs. 200 lbs.	S S SB S S
6.	Safety Related Chiller Hoist	CP1-MEMHCH-04 CP2-MEMHCH-04	Auxiliary Bldg.	778'	A. Processing Tank B. Acid Tank & Pump C. Chiller D. Electrical Cabinet E. Motor & Compressor F. Precooler Heat Exchanger	2,900 lbs. 1,000 lbs. 2,300 lbs. 1,500 lbs. 300 lbs. 2,465 lbs.	SB S S S S S
7.	Centrifugal Charging Pump Hoist	CP1-MEMHCH-01, 02 CP2-MEMHCH-01, 02	Auxiliary Bldg.	810'	A. Centrifugal Charging Pump (CCF) (Total) B. CCP Gear Assembly C. CCP Motor (Total) D. CCP Motor Rotor E. Lube Oil Cooler (Shell) F. Emergency Fan/Coil Unit Motor	7,500 lbs. 2,700 lbs. 5,830 lbs. 1,760 lbs. 260 lbs. 140 lbs.	S S SB S S S
8.	Containment Fuel Handling Bridge Crane	CP1-MESCCF-01 CP2-MESCCF-01	Containment	860'	A. Fuel Assembly and Lifting Tool	1,700 lbs.	NR

TABLE 4 (CONT.)

	Crane/Hoist Equipment	I.D. Number	Location	Elevation	Projected Loads	Approx. Load Wts.	*Anticipated Lifting Device
9.	Safety Injection Pump Hoist	CP1-MEMHCH-06, 07	Safeguard Bldg.	773'	A. S.I. Pump B. S.I. Pump Motor	6,000 lbs. 4,800 lbs.	S SB
10.	RHR Pump Hoist	CP1-MEMHCH-08, 09 CP2-MEMHCH-08, 09	Safeguard Bldg.	773'	A. RHR Pump B. RHR Pump Motor C. RHR Pump Casing D. RHR Pump Rotor E. RHR Pump Motor Assembly	4,400 lbs. 5,100 lbs. 1,815 lbs. 2,585 lbs. 9,500 lbs.	SB SB S S SB
11.	Auxiliary Feedwater Pump Hoist (Motor Driven)	CP1-MEMHCH-13, 14 CP2-MEMHCH-14, 14	Safeguard Bldg.	790'	A. Aux. Fdwtr. Pump B. Aux. Fdwtr. Pump Motor C. Aux. Fdwtr. Pump Rotor D. Aux. Fdwtr. Pump Upper Casing	4,000 lbs. 7,100 lbs. 1,224 lbs. 1,200 lbs.	S SB S S
12.	Auxiliary Feedwater Pump Hoist (Turbine Driven)	CP1-MEMHCH-12 CP2-MEMHCH-12	Safeguard Bldg.	790'	A. Aux. Fdwtr. Pump B. Turbine Driver C. Aux. Fdwtr. Pump Rotor D. Aux. Fdwtr. Pump Casing	4,000 lbs. 2,800 lbs. 1,150 lbs. 1,300 lbs.	S SB S S
13.	Auxiliary Building Filter Area Hoist	CPX-MEMHWR-04	Auxiliary Bldg.	852'	A. Filter Element Transfer Cask B. Filter Compartment Concrete Floor Plugs (MAX)	6,800 lbs. 16,000 lbs.	S S
14.	Reactor Coolant Pump Hoist	CP1-MEMHCH-42 CP2-MEMHCH-42	Containment	905'	A. Reactor Coolant Pump Internals 1. Pump Stator 2. Pump Rotating Ele. B. Reactor Coolant Pump Motor and Lifting Rig 1. Stator 2. Rotor 3. Fly Wheel 4. Motor Air Coolers C. Reactor Coolant Pump Motor Stand	55,200 lbs. 47,600 lbs. 7,600 lbs. 87,487 lbs. 48,003 lbs. 31,484 lbs. 16,125 lbs. 1,100 lbs. 11,000 lbs.	S S S SB S S S S S

TABLE 4 (CONT.)

	<u>Crane/Hoist Equipment</u>	<u>I.D. Number</u>	<u>Location</u>	<u>Elevation</u>	<u>Projected Loads</u>	<u>Approx. Load Wts.</u>	<u>*Anticipated Lifting Device</u>
15.	Diesel Generator Hoist (Piston)	CP1-MEMCH-37, 38 CP2-MEMCH-37, 38	Safeguard Bldg.	810'	A. Various Piping And Struc- tural Components on or Near Diesel Generator Set	2,000 lbs.	S
16.	Spent Fuel Pool Heat Exchanger Hoist	CPX-MEMHCH-43, 44	Fuel Bldg.	838'	A. Spent Fuel Cooling Pump B. Spent Fuel Cooling Motor C. Spent Fuel Heat Exchanger	2,500 lbs. 2,100 lbs.	S S
					1. Shell 2. Tube Bundle	7,600 lbs. 7,400 lbs.	SB SB
					D. Concrete Floor Plugs (MAX)	8,000 lbs.	S
17.	Service Water Traveling Screen Hoist	PX-MEMHCH-12	Service Water Intake	-	A. Miscellaneous Parts, Trays, Chains, Housing, Chain Guides (Max.)	3,500 lbs.	SB
18.	RHR and CSS Heat Exchanger Hoist	CP1-MEMHCH-47, 59 CP2-MEMHCH-47, 59	Safeguard Bldg.	831'	A. Containment Spray Heat Exchanger 1. Shell Body 2. Tube Bundle B. RHR Heat Exchanger 1. Shell Body 2. Tube Bundle C. Compartment Concrete Floor Plugs (MAX)	7,300 lbs. 17,000 lbs. 7,750 lbs. 16,600 lbs. 20,000 lbs.	SB SB SB SB S
19.	Main Steam Safety Valves Hoist	CP1-MEMHCH-48 thru 51 CP2-MEMHCH-48 thru 51	Safeguard Bldg.	880'	A. Main Steam Safety Valves	1,550 lbs.	S
20.	Service Water Intake Structure Bridge Crane	CPX-MESCSW-01	Service Water Intake	-	A. Service Water Pump Motor B. Fire Pump Jockey Pump C. Fire Pump Jockey Pump Motor D. Fire Pump Diesel Driven Pump E. Fire Pump Diesel Driven Pump Driver F. Fire Pump Diesel Drive Pump Gear G. Fire Pump Diesel Coupling H. Fire Pump Elec. Driven Pump I. Fire Pump Elec. Driven Pump Mtr.	9,700 lbs. 525 lbs. 235 lbs. 4,730 lbs. 3,450 lbs. lbs. 1,450 lbs. 181 lbs. 4,730 lbs. 4,800 lbs.	S S S S SB S S S S

TABLE 4 (CONT.)

	<u>Crane/Hoist Equipment</u>	<u>I.D. Number</u>	<u>Location</u>	<u>Elevation</u>	<u>Projected Loads</u>	<u>Approx. Load Wts.</u>	<u>*Anticipated Lifting Device</u>
21.	Containment Dome Access Rotating Platform Hoist	CP1-MESCRP-01 CP2-MESCRP-01	Containment	1000'	A. Misc. Tools B. Welding Equipment	200 lbs. 300 lbs.	S S
22.	Fuel Building Fuel Handling Bridge Crane	TBX-FHSCFB-01	Fuel Building	860'	A. Failed Fuel Assembly and Lifting Tool B. Fuel Assembly and Tool	3,000 lbs. 2,000 lbs.	NR NR
23.	Containment Building Refueling Machine	TBX-FHSCMC-01	Containment	860'	A. Fuel Assembly	1,500 lbs.	NR
24.	Service Water Intake Stop Gate Hoist	CPX-MEMHCH-61	Service Water Intake Structure	-	A. Service Water Pump Compartment Stop Gates.	16,000 lbs.	S

*Lifting Device Symbols

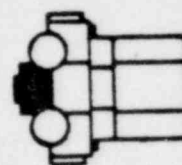
S - Sling or Cable Arrangement
 SB - Sling and Spreader Bar Arrangement
 SLD - Special Lifting Device
 NR - None Required



FIGURE 1

Fuel Building
Overhead Crane
and Safe Load Areas

Fuel Building
Fuel Handling Bridge Crane



COMBUSTION PEAKS

FUEL-BURNING



*NOTE: Safe load areas are required only when spent fuel is being shipped out.

Safe load area shown in cross-hatched area.

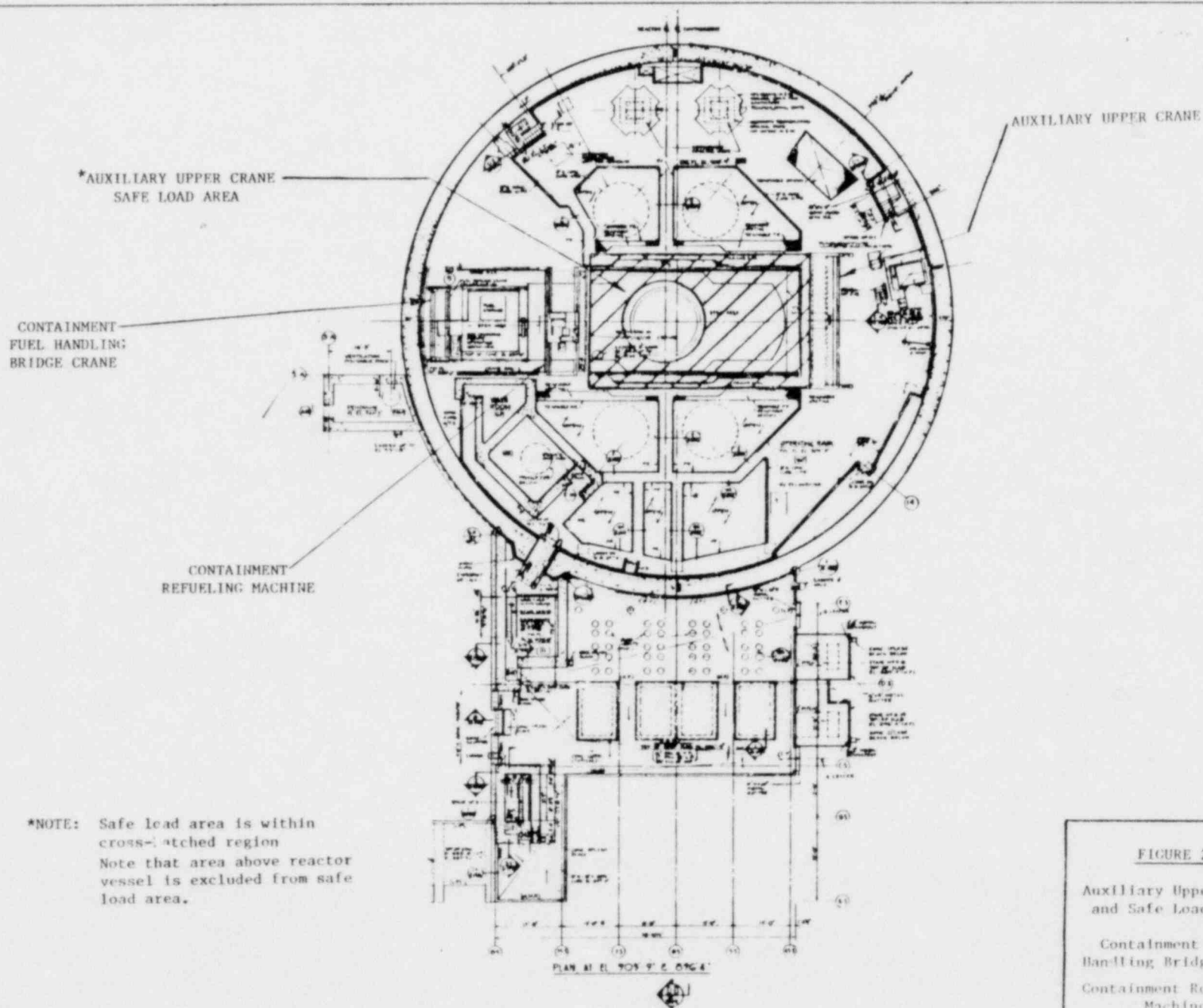
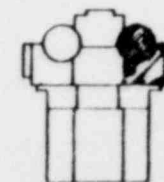


FIGURE 2

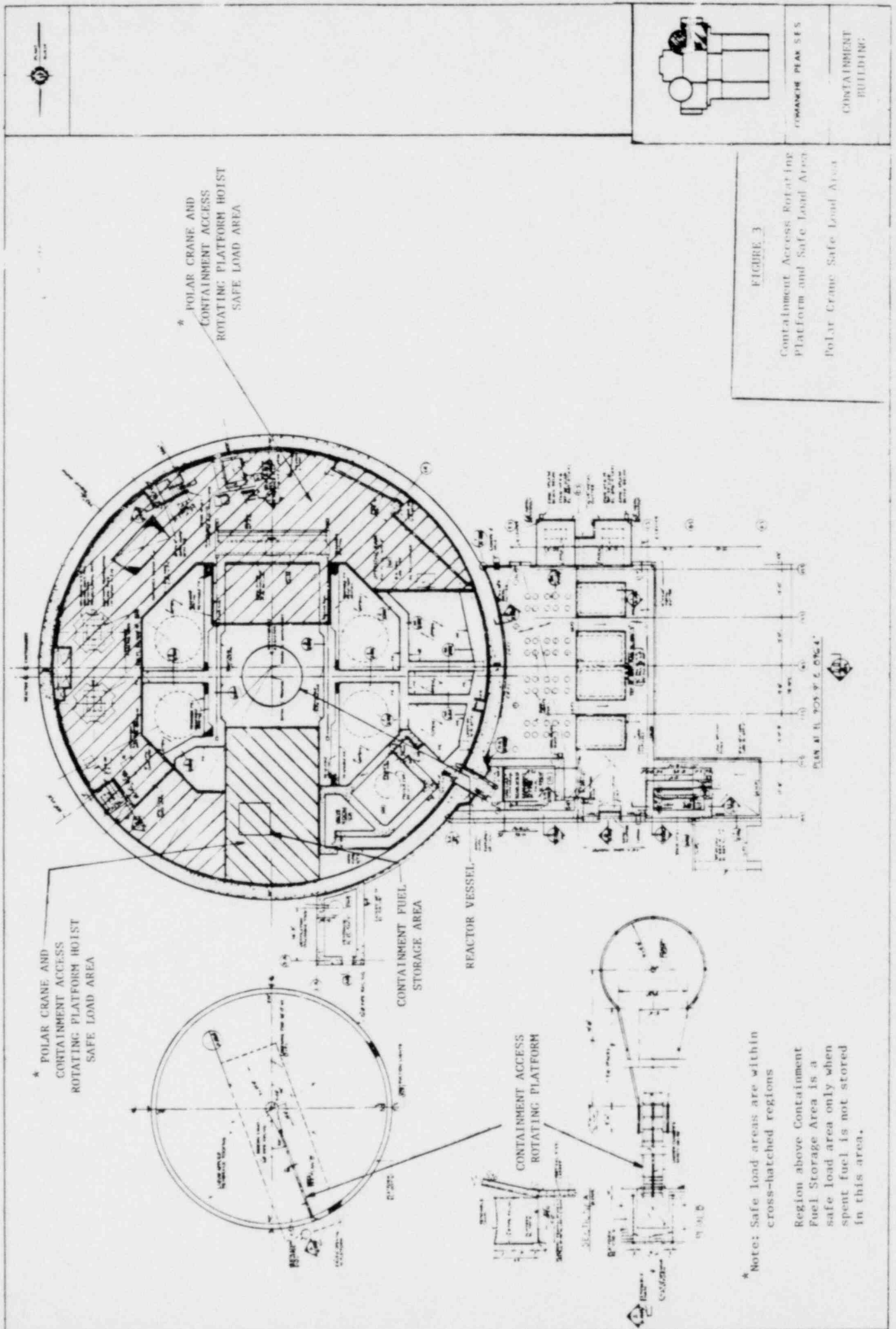
Auxiliary Upper Crane
and Safe Load Area

Containment Fuel
Handling Bridge Crane
Containment Refueling
Machine



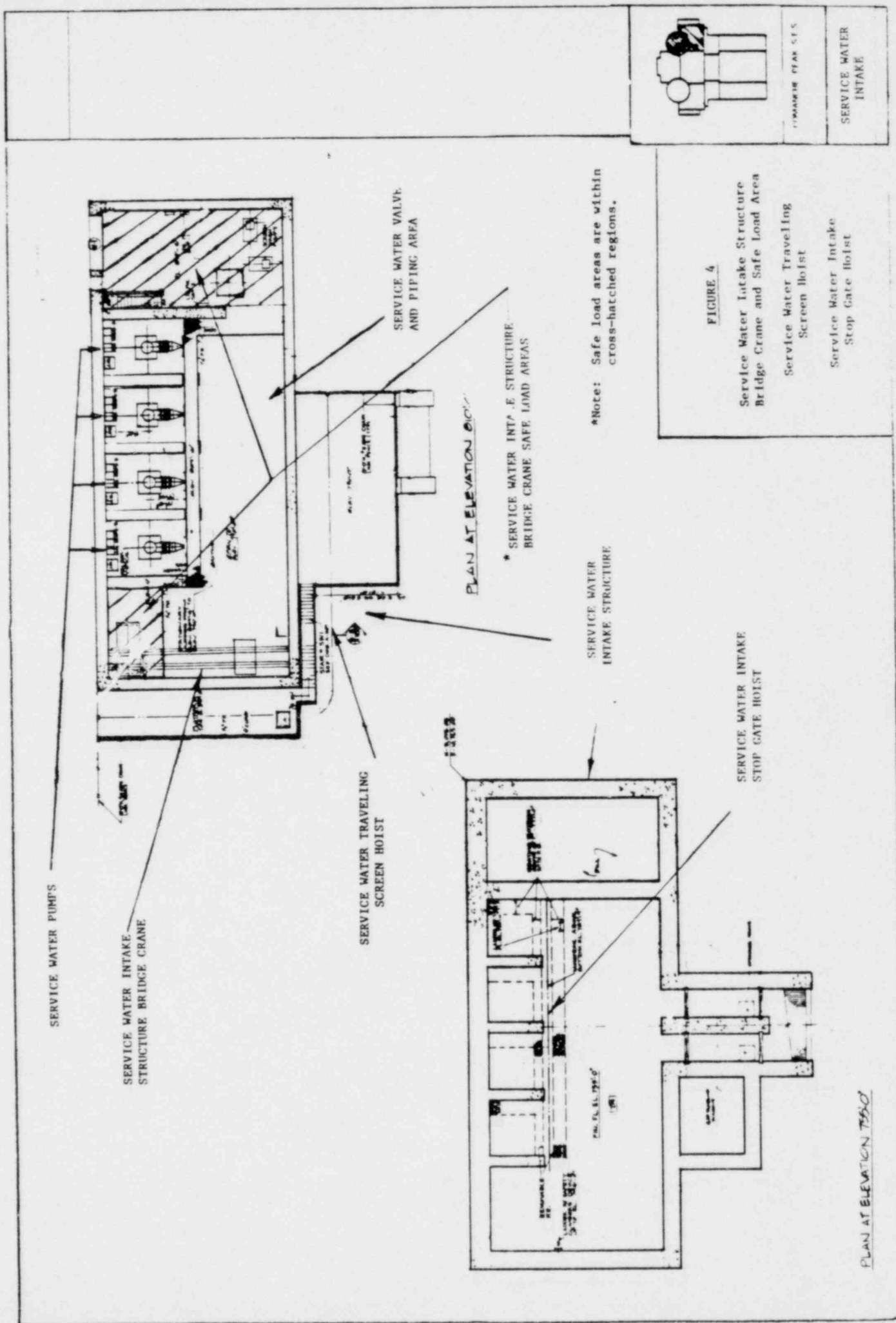
COMANCHE PEAK U.S.

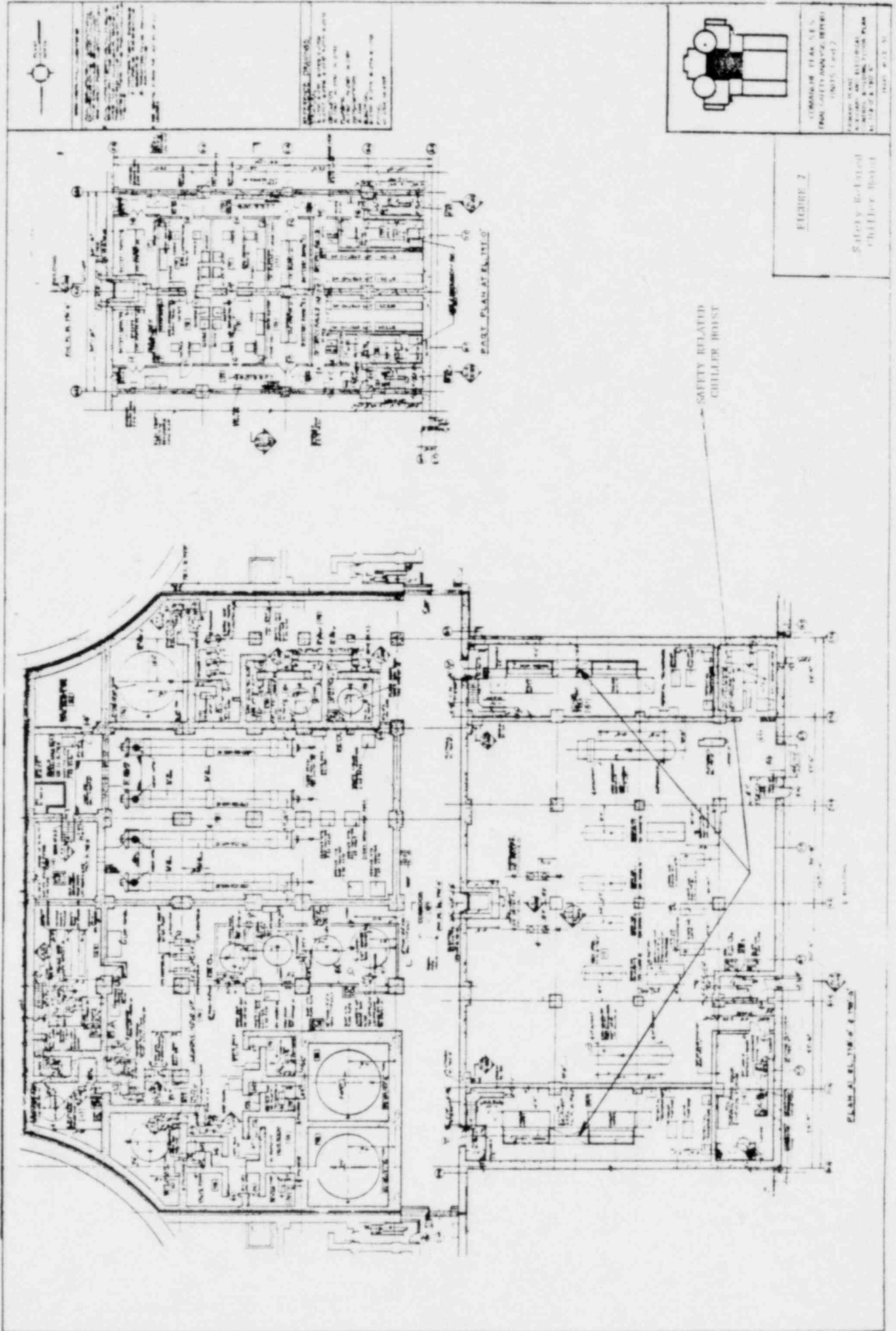
CONTAINMENT
BUILDING

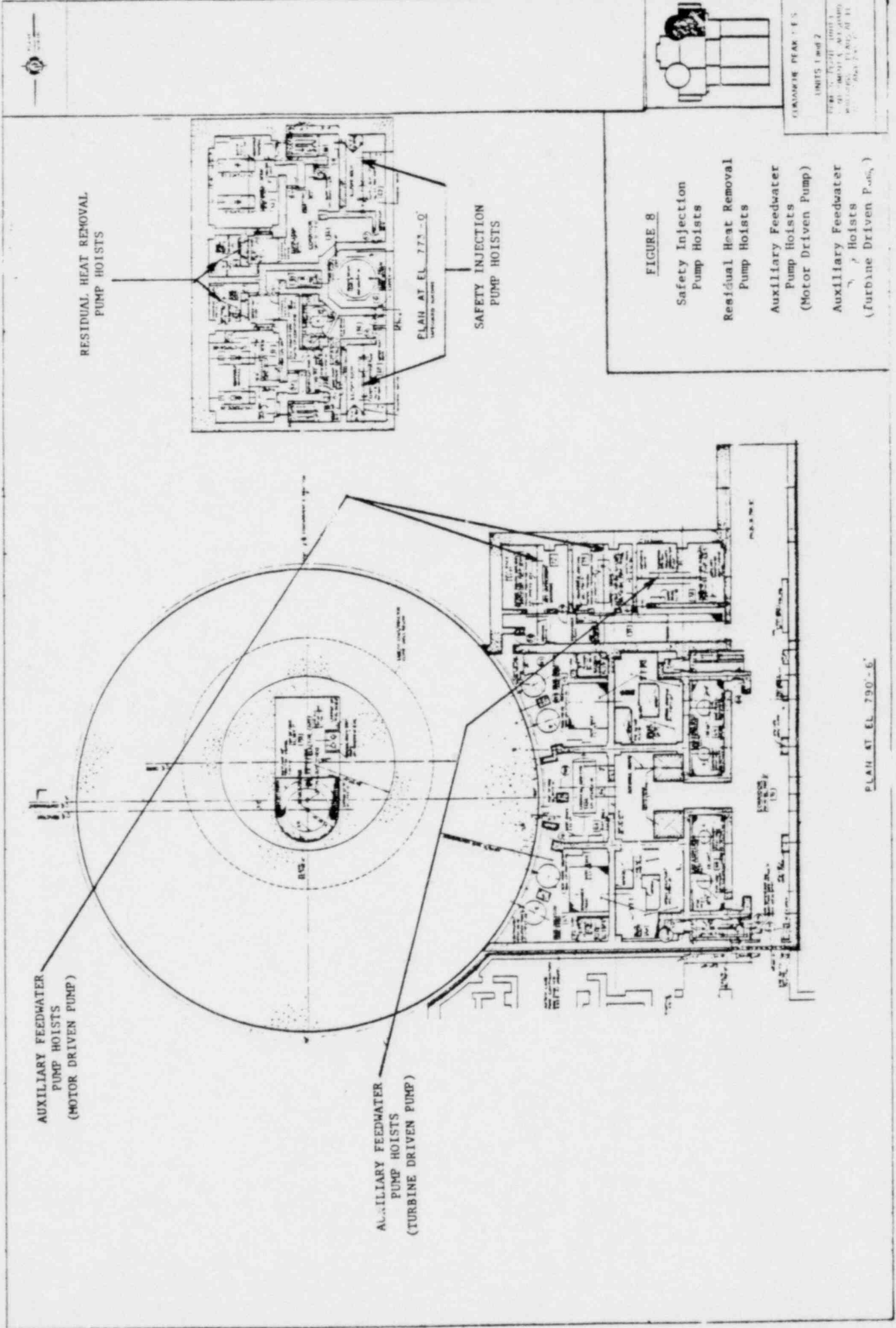


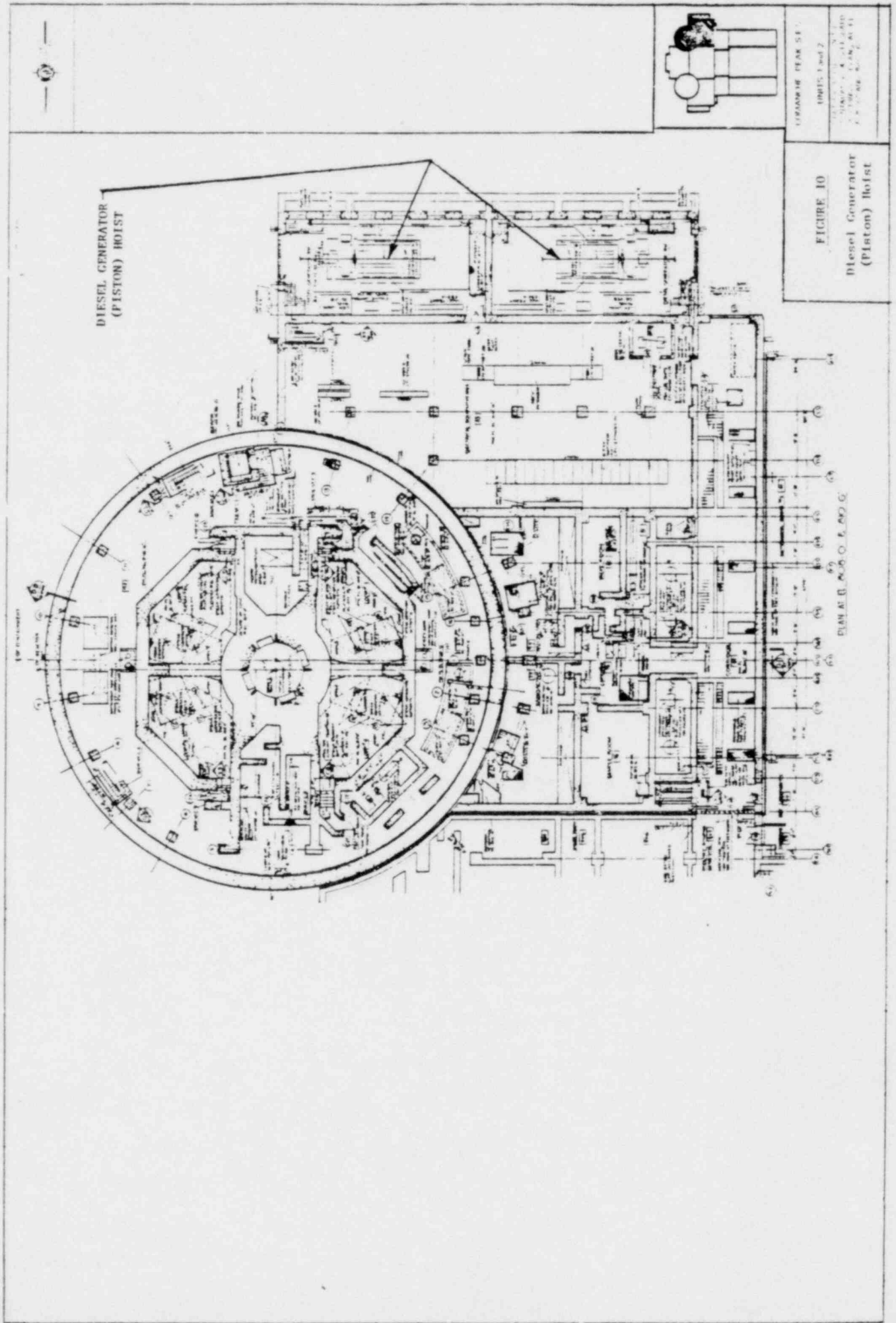
* Note: Safe load areas are within cross-hatched regions

Region above Containment Fuel Storage Area is a safe load area only when spent fuel is not stored in this area.

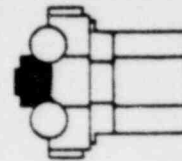
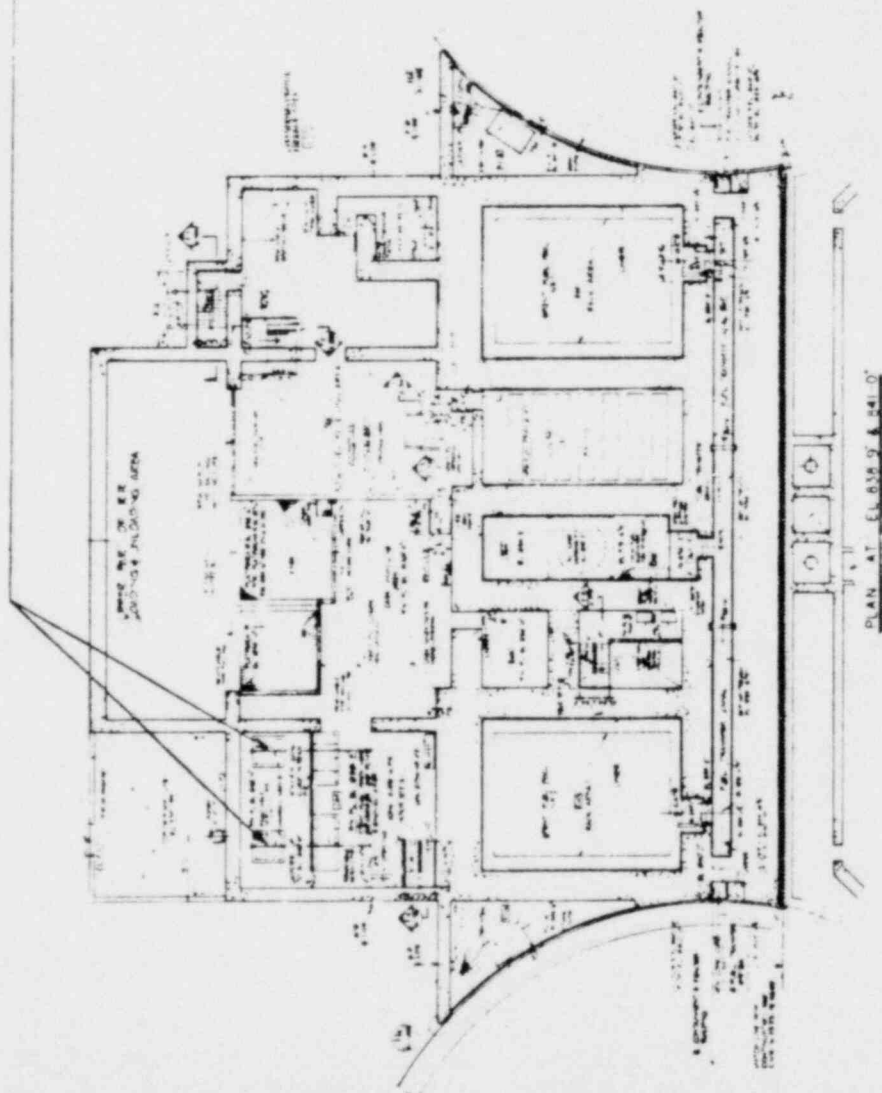








SPENT FUEL POOL
HEAT EXCHANGER HOISTS



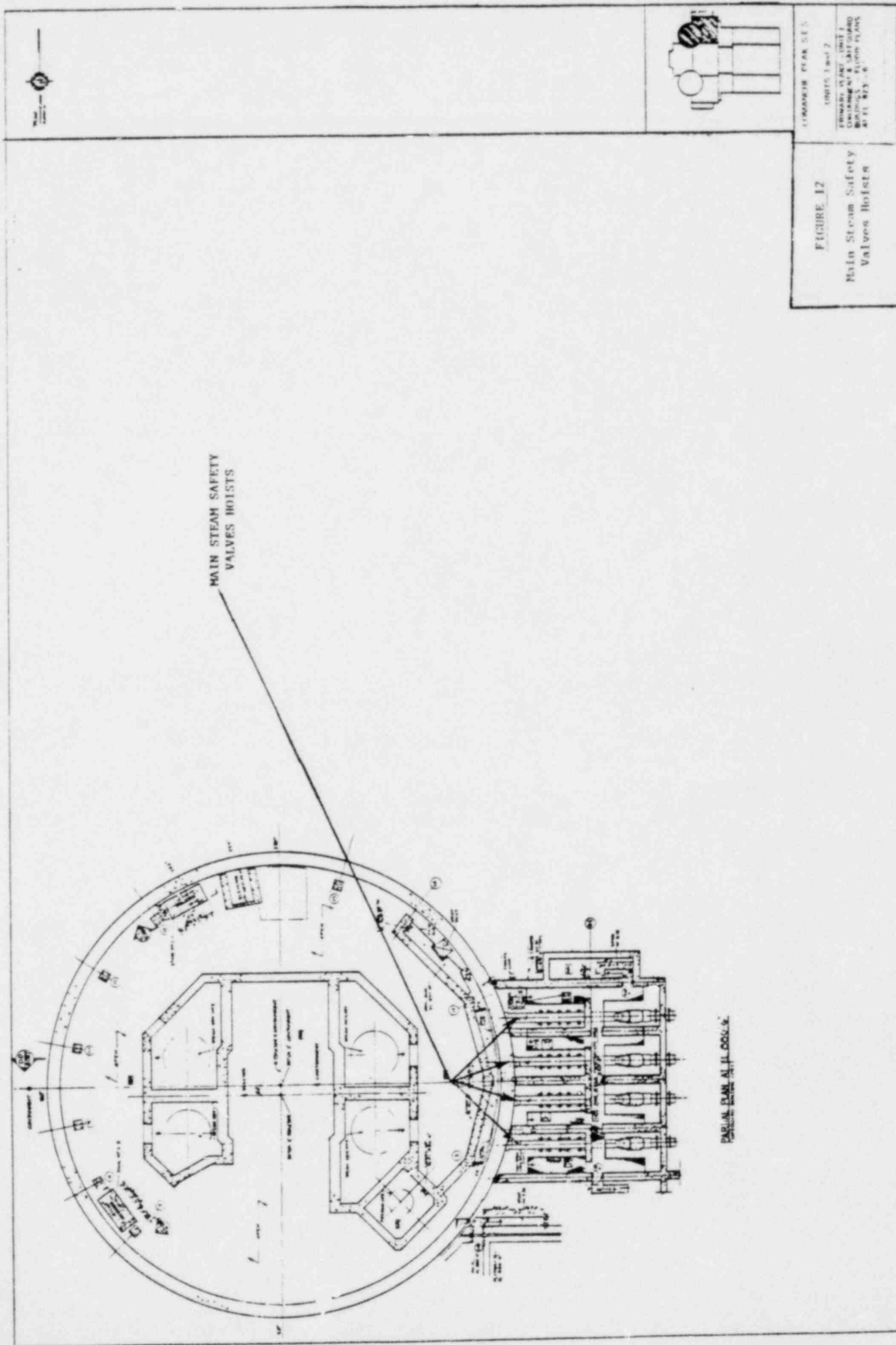
CONCRETE PEAK SFS

UNITS 1 and 2

PRIMARY PLANT
FUEL HOISTING EQUIPMENT PLAN
A. 1, 8' x 9' x 8' 0"

FIGURE 11

Spent Fuel Pool
Heat Exchanger Hoists



TEXAS UTILITIES SERVICES INC.

OFFICE MEMORANDUM

Log # TUS-3193

File # 903.11

To J. S. Marshall

Dallas, Texas August 6, 1981

Subject COMANCHE PEAK STEAM ELECTRIC STATION
WORKING MEETING WITH SEISMIC AND DYNAMIC
LOADS SECTION

On August 4, 1981, a working meeting was held on the CPSES dockets with the Seismic and Dynamic Loads Section of the Equipment Qualification Branch of the NRC Staff. The meeting was held in the Westinghouse conference room in Bethesda, Md., and a list of those that attended the meeting is attached.

Ed Bond of Gibbs and Hill gave an overview presentation on BOP seismic qualification and copies of his slides are attached. John McInerny and Vic Miselis of Westinghouse gave an overview of the NSSS seismic qualification. The SQRT Review Forms and the seismic qualification documentation for 6 BOP pieces of equipment (see attached slides) and 3 NSSS pieces of equipment (Charging Pumps, PAMS Recorders, and Accumulators) were examined by the NRC staff. The SQRT Review Forms are enclosed.

Although the depth of review was by necessity rather shallow, many aspects of the seismic qualification for CPSES were discussed. No outstanding areas of disagreement were identified between the staff's requirements and the way the seismic qualification program for CPSES was being implemented and documented. In the staff's opinion, if significant problems existed they should have been discovered during this meeting. On this basis, the CPSES seismic qualification program can be considered acceptable pending a final confirmatory audit. A summary of this working meeting shall be written by the staff in about one month to be followed by an input for the SER Supplement on 9-15-81.

During the meeting, the staff had the following specific comments:

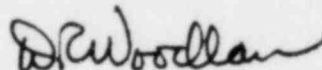
1. The table of qualification data should be submitted about 2 months prior to the confirmatory audit. The G&H Status Report would be adequate if it were changed to include (a) locations (buildings and elevation), (b) natural frequencies, (c) status of installation, and (d) test data such as multiple versus single frequency and multiple versus single axis.
2. For equipment selected for the audit, documentation should be available that shows:
 - (a) That the seismic qualification documentation is applicable to the CPSES equipment,
 - (b) That the seismic qualification documentation has been accepted (i.e., is not preliminary and has no outstanding comments), and
 - (c) That any deficiencies identified during testing were resolved and modifications, if required, were made to the CPSES equipment.

3. The SQRT Review Forms should include:

- (a) Specific mounting configurations and important test results which are clearly stated to avoid confusion or misunderstandings,
- (b) Multiple sheets (2 thru 4) when multiple reports are referenced, and
- (c) Completed sheets (2 thru 4) for each device or component when a piece of equipment includes multiple devices or components.

In general the staff said that they were pleased with what they saw. I highly recommend that Gibbs and Hill continue updating their Status Report and expand this report to include the information requested by the staff. This report will be extremely valuable for the audit with respect to both time and man-hours by having an updated status rather than trying to go back and remove data from previously reviewed reports. It shall also be valuable if (as the staff projected may be required by rulemaking), TUSI is required to establish a separate seismic file similar to the environmental qualification file.

CPSES should be ready for the final confirmatory audit in the first or second quarter of next year. The staff will perform the audit when about 90% of the equipment is qualified and installed. The staff does not include piping or structures in this 90% number but does include all other Category I equipment such as valves, pumps, instrumentation, panels, etc. Please call me if you have any questions.



D. R. Woodlan

DRW/grr
Attachment
Enclosure

cc: File (w/encl)
A. T. Parker
R. E. Ballard
S. B. Burwell
R. A. Jones
J. C. Kuykendall
J. T. Merritt
L. M. Popplewell
J. L. Montgomery (w/encl)
R. D. Calder

ATTENDANCE

MEETING

Comanche Peak

DATE

Tuesday, August 4, 1981

TIME

9:00am - 4:00pm

PLACE

31 Bethesda Learning Operations

NAME

ORGANIZATION

John McFerrry
Donald R. Woodson31
Texas Utilities Services Inc.

Kamal K. Bandyopadhyay

Gibbs & Hill, Inc.
- Special Analysis

Jagtar S. Khinda

Gibbs & Hill, Inc.

Edmond J. Bond

G & H

Vic Miselis

① NTD - STRUCTURAL
MECHANICS
DEPARTMENT

John McInerney

W HTP / NS

ARNOLD LEE

NRC / Equip. Qualification Branch

T. Y. Chang

NRC / Equip. Qualification Branch

Bob Riggs

NRC / EQB

G. BAGCHI

NRC / EQB

SPOTTSWOOD BURWELL

NRC - PROJECT
MANAGER

COMANCHE PEAK STEAM ELECTRIC STATION
SQRT/TUSI/W/G&H MEETING AUG. 4, 1981
NRC OFFICES, BATHESDA, MD.
BOP SEISMIC CATEGORY I EQUIPMENT QUALIFICATION
OUTLINE

1. CLASSIFICATION OF EQUIPMENT
2. SEISMIC QUALIFICATION CRITERIA
3. EQUIPMENT QUALIFICATION STATUS
4. EQUIPMENT QUALIFICATION DOCUMENT FLOW
5. STATUS FORM
6. RESPONSE TO NRC QUESTIONS Q150.1 THROUGH Q150.6 - GENERAL DISCUSSION
7. PRESENTATION/REVIEW OF SQRT QUALIFICATION FORM (Q150.6)
8. GENERAL QUESTION/ANSWER - THROUGHOUT MEETING

CLASSIFICATION OF EQUIPMENT

SEISMIC CATEGORY I (CLASS 1E AND NON-CLASS 1E)

EQUIPMENT, COMPONENTS AND PARTS THEREOF REQUIRED TO REMAIN FUNCTIONAL TO ENSURE:

1. THE INTEGRITY OF THE REACTOR COOLANT PRESSURE BOUNDARY;
2. THE CAPABILITY TO SHUTDOWN THE REACTOR AND MAINTAIN IT IN A SAFE SHUTDOWN CONDITION; OR
3. THE CAPABILITY TO PREVENT OR MITIGATE THE CONSEQUENCES OF ACCIDENTS THAT COULD RESULT IN POTENTIAL OFFSITE EXPOSURES COMPARABLE TO THE GUIDELINES OF 10 CFR, PART 100.

FUNCTIONAL

1. STRUCTURAL INTEGRITY

ABILITY OF EQUIPMENT TO FUNCTION BY RETAINING ITS STRUCTURAL STRENGTH BY MAINTAINING STRESSES DEFLECTIONS, CLEARANCES, WITHIN SPECIFIC LIMITS

2. OPERABILITY

ABILITY OF EQUIPMENT TO EXECUTE AND RETAIN A DESIGN FUNCTION.

3. COMBINATION OF 1 & 2

NOTE:

NON-SEISMIC CATEGORY I EQUIPMENT WHOSE FAILURE COULD ADVERSELY AFFECT THE FUNCTION OF CATEGORY I EQUIPMENT IS QUALIFIED AS SEISMIC CATEGORY I EQUIPMENT.

EQUIPMENT SEISMIC QUALIFICATION CRITERIA

OVERALL GENERAL GUIDE FOR SEISMIC QUALIFICATION:

IEEE STD. 344 - 1975: IEEE RECOMMENDED PRACTICES FOR SEISMIC
QUALIFICATION OF CLASS IE EQUIPMENT
FOR NUCLEAR POWER GENERATING STATIONS

NRC REGULATORY GUIDES

- 1.29 SEISMIC DESIGN CLASSIFICATION
- 1.48 DESIGN LIMITS AND LOADING COMBINATIONS FOR SEISMIC
CATEGORY I FLUID SYSTEM COMPONENTS
- 1.60 DESIGN RESPONSE SPECTRA FOR SEISMIC DESIGN OF NUCLEAR
POWER PLANTS
- 1.61 DAMPING VALUES FOR SEISMIC DESIGN OF NUCLEAR POWER
PLANTS
- 1.89 QUALIFICATION OF CLASS IE EQUIPMENT FOR NUCLEAR
POWER PLANTS
- 1.92 COMBINING MODAL RESPONSES AND SPATIAL COMPONENTS IN
SEISMIC RESPONSE ANALYSIS
- 1.100 SEISMIC QUALIFICATION OF ELECTRICAL EQUIPMENT FOR
NUCLEAR POWER PLANTS
- 1.122 DEVELOPMENT OF FLOOR DESIGN RESPONSE SPECTRA FOR
SEISMIC DESIGN OF FLOOR - SUPPORTED EQUIPMENT OR
COMPONENTS

NRC BRANCH TECHNICAL POSITION PAPERS

CODES AND STANDARDS

ASME B&PV CODE, SECTION III

AISC SPECIFICATION

ANSI STANDARDS

G&H EQUIPMENT SPECIFICATIONS

ELECTRICAL

MECHANICAL

HVAC

INSTRUMENTATION AND CONTROLS

STRUCTURAL

ARCHITECTURAL

G&H SEISMIC SPECIFICATION

2323-SS-20: SEISMIC CRITERIA FOR EQUIPMENT DESIGN

METHODS OF QUALIFICATION

1. ANALYSIS
2. TESTING
3. COMBINATION OF TESTING AND ANALYSIS

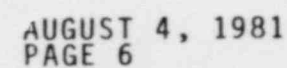
TEXAS UTILITIES GENERATION COMPANY
 COMANCHE PEAK STEAM ELECTRIC STATION
 SPECIAL ANALYSIS
 SEISMIC CATEGORY I EQUIPMENT QUALIFICATION
 (CLASS 1E AND NON-CLASS 1E)

A. IEEE 344 (CLASS 1E)

	<u>PLANS</u>	<u>REPORTS</u>
TOTAL ESTIMATED	111	196
TOTAL RECEIVED	100	164
TOTAL APPROVED	66	116
TOTAL UNDER REVIEW	1	1
TOTAL AEN	33	47
NOT RECEIVED	11	32

B. SEISMIC CATEGORY I (NON-CLASS 1E)

	<u>PLANS</u>	<u>REPORTS</u>
TOTAL ESTIMATED	66	229
TOTAL RECEIVED	53	210
TOTAL APPROVED	45	147
TOTAL UNDER REVIEW	0	0
TOTAL AEN	8	63
NOT RECEIVED	13	19



SPEC.: ES-1D.1
P.O.: CP-0411A
TITLE: SERVICE WATER PUMP MOTORS

TEXAS UTILITIES GENERATING COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION
G&H PROJECT NO. 2323

SHEET 2

DATE:

VENDOR: SIEMENS-ALLIS, INC.
(S-A)

SEISMIC CATEGORY I EQUIPMENT QUALIFICATION STATUS REPORT
INCLUDING CLASS 1E EQUIPMENT IEEE STD 344-1975 QUALIFICATION

NUCLEAR SAFETY RELATED:

☒ Yes ☐ No

EQUIPMENT	CLASSIFICATION	QUALIFICATION PLAN		QUALIFICATION METHODOLOGY				QUALIFICATION REPORT		REMARKS
		PLAN IDENTIFICATION	PLAN STATUS	DYN ANAL	STAT ANAL	TEST	PAST HIST	REPORT IDENTIFICATION	REPORT STATUS	
Service Water Pump Motors (900 H.P.)	Yes	Report includes plan			X			S-A Report "Eqpt. Qual. Form-Wound Motors," S-A Order No. 8-5017-90244 Issue 2, 9-25-78, S-A Cover Letter 12-8-78	APP GTN-33847 12-5-79	
Plan - APP										
Report - APP										

LEGEND: APP - APP. /VED
AEN - APPROV. /S
FIO - FOR INFO
RFC - RETURN

VT AS NOTED, MAY PROCEED WITH FABRICATION
X
TION, MAY NOT PROCEED WITH FABRICATION

NRC - SUBMITTED TO NRC (LETTER NO. AND DATE AS NOTED)
N/A - NOT APPLICABLE
* - REVISED SINCE LAST ISSUE

AUGUST 4, 1981
PAGE 7

Q150.6 QUALIFICATION SUMMARY OF EQUIPMENT

<u>SPEC. NO.</u>	<u>DESCRIPTION OF EQUIPMENT</u>
1. 2323-ES-1D.1	SERVICE WATER PUMP MOTORS (900 HP)
2. 2323-ES-6	480 V LOAD CENTER UNIT SUBSTATIONS - TRANSFORMERS
3. 2323-ES-24	SOLID STATE ISOLATION EQUIPMENT CABINETS
4. 2323-MS-13	SPENT FUEL POOL COOLING WATER PUMP MOTORS (250 HP)
5. 2323-MS-80B	COMBINATION STARTERS
6. 2323-MS-605	MAIN CONTROL BOARDS - UNIT CB-09

AUGUST 4, 1981
PAGE 8