TEXAS UTILITIES SERVICES INC.
2001 BRYAN TOWER · DALLAS, TEXAS 75201

Log # TXX-3384
File # 909.5

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

RWH
RWH/AND:tls
Attachment
cc: R. D. Calder
J. T. Merritt
J. C. Kuykendall
R. A. Jones
R. E. Ballard
A. T. Parker

B030
S 1/1

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 assocated 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 assocated 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 monorail 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 Spray HX Hoist (CP1&2-MEMHCH-47,59) — Figure 5

N. Main Steam Safety Valve Hoist (CP1&2-MEMHCH-48,49,50,51) — Figure 12

O. Service Water Intake Stop Gate Hoist (CPX-MEMHCH-61) — Figure 4

P. Reactor Coolant Pump Hoist (CP1&20MEMHC-42) — Figure 3 (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 CPSES 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

	Crane/Hoist Name	Crane/Hoist I. D. No.	Location	Elevation	Capacity (Tons)	Equipment and/or Piping Along The Load Path
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)

	Crane/Hoist Name	Crane/Hoist I. D. No.	Location	Elevation	Capacity (Tons)	Equipment and/or Piping Along The Load Path
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 feedwater pumps, piping and valves
12.	Auxiliary feedwater pump hoist. (turbine driven pump)	CP1-MEMHCH-12 CP2-MEMHCH-12	Safeguard building	790'-6"	3	Tubine driven auxiliary feedwater 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 polar crane. See Note 1.

TABLE 1(continued)

	Crane/Hoist Name	Crane/Hoist I. D. No.	Location	Elevation	Capacity (Tons)	Equipment and/or Piping Along The Load Path
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)

	Crane/Hoist Name	Crane/Hoist I. D. No.	Location	Elevation	Capacity (Tons)	Equipment and/or Piping Along The Load Path
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

	Crane/Hoist Name (*)	Crane/Hoist I.D.No.	Location	Elevation	Capacity (Tons)
1.	Drumming storage area crane.	CPX-MESCDS-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)

	Crane/Hoist Name*	Crane/Hoist I.D. No.	Location	Elevation	Capacity (Tons)
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	.eater 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)

	Crane/Hoist Name	Crane/Hoist I.D. No.	Location	Elevation	Capacity (Tons)
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 mis . 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-ME HCH-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)

	Crane/Hoist Name	Crane/Hoist I.D. No.	Location	Elevation	Capacity (Tons)
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

	Crane/Hoist Name	Crane/Hoist I. D. No.	Location	Elevation	Capacity (Tons)	Code and Standard
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 Manufactures Association of America.

TABLE 3 (continued)

	Crane/hoist Name	Crane/Hoist I.D. No.	Location	Elevation	Capacity (Tons)	Code and Standard
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)

	Crane/Hoist Name	Crane/Hoist I.D. No.	Location	Elevation	Capacity (Tons)	Code and Standard
16.	Spent fuel pool HX. hoist.*	CPX-MEMHCH-43, 44	Fuel building	83[illegible]-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 Containment 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)

	Crane/Hoist Name	Crane/Hoist I.D. No.	Location	Elevation	Capacity (Tons)	Code and Standard
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. No. 70

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

TABLE 4

OVERHEAD LOAD HANDLING SYSTEM
PROJECTED LOADS AND WEIGHTS

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

TABLE 4 (CONT.)

	Crane/Hoist Equipment	I.D. Number	Location	Elevation	Projected Loads	Approx. Load Wts.	*Anticipated Lifting Device
4.	Moderating Heat Exchanger Hoist	CP1-MEMHCH-16 CP2-MEMHCH-16	Safeguards	831'	A. Moderating HX Channel Head	268 lbs.	S
					B. Moderating HX Tube Bundle	1,515 lbs.	S
					C. Moderating HX Shell	2,558 lbs.	S
5.	Component Cool Water Pump Hoist	CPX-MEMHCH-01	Auxiliary Bldg.	810'	A. Component Cooling Water Pump	6,500 lbs.	S
					B. Component Cooling Water Pump Base	3,300 lbs.	S
					C. Component Cooling Water Pump Motor	7,500 lbs.	SB
					D. Valves - 24 In.	1,040 lbs.	S
					E. Emergency Fan/Coil Unit Motor	200 lbs.	S
6.	Safety Related Chiller Hoist	CP1-MEMHCH-04 CP2-MEMHCH-04	Auxiliary Bldg.	778'	A. Processing Tank	2,900 lbs.	SB
					B. Acid Tank & Pump	1,000 lbs.	S
					C. Chiller	2,300 lbs.	S
					D. Electrical Cabinet	1,500 lbs.	S
					E. Motor & Compressor	300 lbs.	S
					F. Precooler Heat Exchanger	2,465 lbs.	S
7.	Centrifugal Charging Pump Hoist	CP1-MEMHCH-01, 02 CP2-MEMHCH-01, 02	Auxiliary Bldg.	810'	A. Centrifugal Charging Pump (CCP) (Total)	7,500 lbs.	S
					B. CCP Gear Assembly	2,700 lbs.	S
					C. CCP Motor (Total)	5,830 lbs.	SB
					D. CCP Motor Rotor	1,760 lbs.	S
					E. Lube Oil Cooler (Shell)	260 lbs.	S
					F. Emergency Fan/Coil Unit Motor	140 lbs.	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	6,000 lbs.	S
					B. S.I. Pump Motor	4,800 lbs.	SB
10.	RHR Pump Hoist	CP1-MEMHCH-08, 09 CP2-MEMHCH-08, 09	Safeguard Bldg.	773'	A. RHR Pump	4,400 lbs.	SB
					B. RHR Pump Motor	5,100 lbs.	SB
					C. RHR Pump Casing	1,815 lbs.	S
					D. RHR Pump Rotor	2,585 lbs.	S
					E. RHR Pump Motor Assembly	9,500 lbs.	SB
11.	Auxiliary Feedwater Pump Hoist (Motor Driven)	CP1-MEMHCH-13, 14 CP2-MEMHCH-14, 14	Safeguard Bldg.	790'	A. Aux. Fdwtr. Pump	4,000 lbs.	S
					B. Aux. Fdwtr. Pump Motor	7,100 lbs.	SB
					C. Aux. Fdwtr. Pump Rotor	1,224 lbs.	S
					D. Aux. Fdwtr. Pump Upper Casing	1,200 lbs.	S
12.	Auxiliary Feedwater Pump Hoist (Turbine Driven)	CP1-MEMHCH-12 CP2-MEMHCH-12	Safeguard Bldg.	790'	A. Aux. Fdwtr. Pump	4,000 lbs.	S
					B. Turbine Driver	2,800 lbs.	SB
					C. Aux. Fdwtr. Pump Rotor	1,150 lbs.	S
					D. Aux. Fdwtr. Pump Casing	1,300 lbs.	S
13.	Auxiliary Building Filter Area Hoist	CPX-MEMHWR-04	Auxiliary Bldg.	852'	A. Filter Element Transfer Cask	6,800 lbs.	S
					B. Filter Compartment Concrete Floor Plugs (MAX)	16,000 lbs.	S
14.	Reactor Coolant Pump Hoist	CP1-MEMHCH-42 CP2-MEMHCH-42	Containment	905'	A. Reactor Coolant Pump Internals	55,200 lbs.	S
					1. Pump Stator	47,600 lbs.	S
					2. Pump Rotating Ele.	7,600 lbs.	S
					B. Reactor Coolant Pump Motor and Lifting Rig	87,487 lbs.	SB
					1. Stator	48,003 lbs.	S
					2. Rotor	31,484 lbs.	S
					3. Fly Wheel	16,125 lbs.	S
					4. Motor Air Coolers	1,100 lbs.	S
					C. Reactor Coolant Pump Motor Stand	11,000 lbs.	S

TABLE 4 (CONT.)

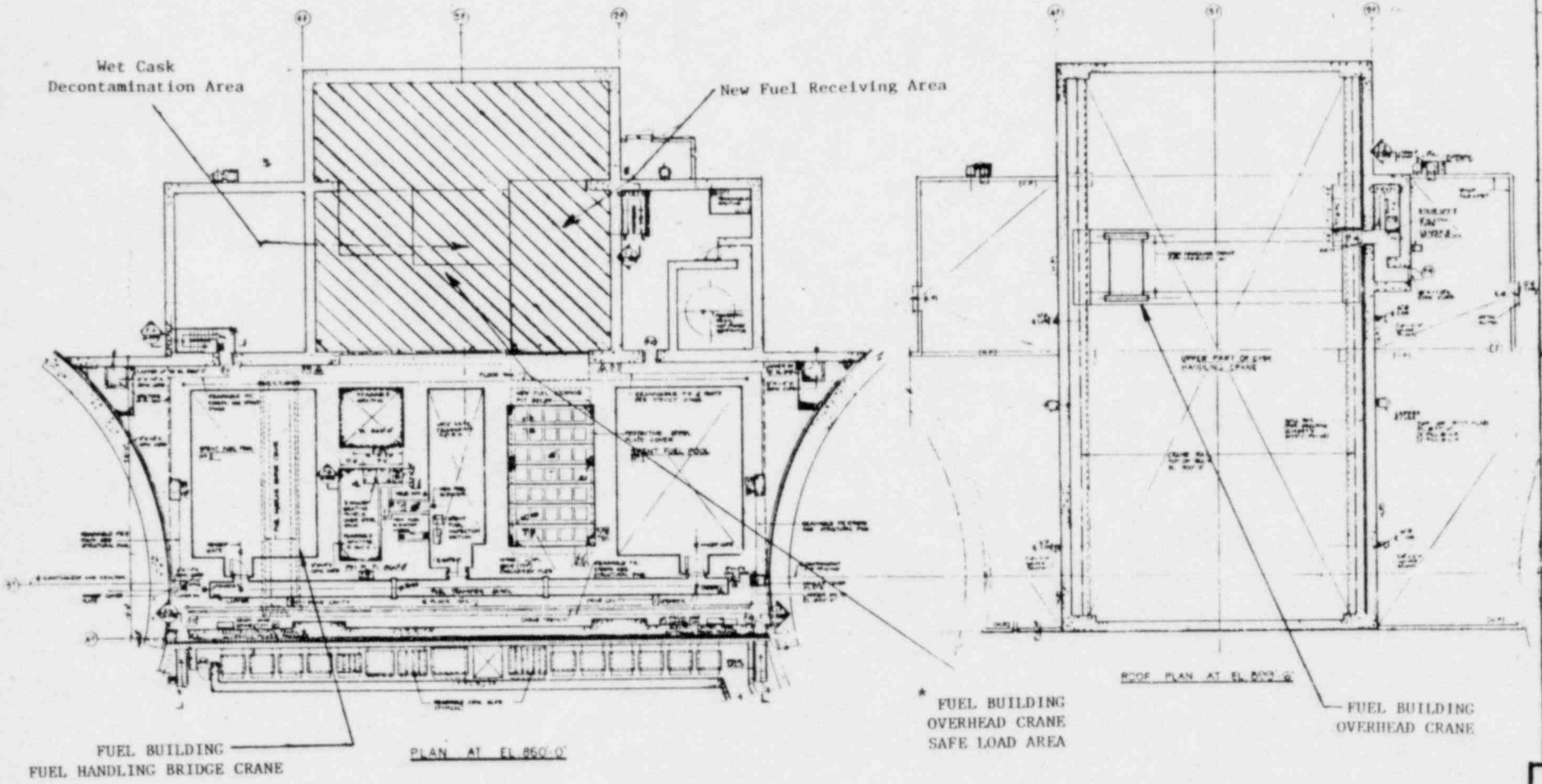
	Crane/Hoist Equipment	I.D. Number	Location	Elevation	Projected Loads	Approx. Load Wts.	*Anticipated Lifting Device
15.	Diesel Generator Hoist (Piston)	CP1-MEMCH-37, 38 CP2-MEMCH-37, 38	Safeguard Bldg.	810'	A. Various Piping And Structural Components on or Near Diesel Generator Set	2,000 lbs.	S
16.	Spent Fuel Pool Heat Exchanger Hoist	CPX-MEMHCH-43, 44	Fuel Bldg.	838'	A. Spent Fuel Cooling Pump	2,500 lbs.	S
					B. Spent Fueld Cooling Motor	2,100 lbs.	S
					C. Spent Fuel Heat Exchanger		
					1. Shell	7,600 lbs.	SB
					2. Tube Bundle	7,400 lbs.	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	7,300 lbs.	SB
					2. Tube Bundle	17,000 lbs.	SB
					B. RHR Heat Exchanger		
					1. Shell Body	7,750 lbs.	SB
					2. Tube Bundle	16,600 lbs.	SB
					C. Compartment Concrete Floor Plugs (MAX)	20,000 lbs.	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	9,700 lbs.	S
					B. Fire Pump Jockey Pump	525 lbs.	S
					C. Fire Pump Jockey Pump Motor	235 lbs.	S
					D. Fire Pump Diesel Driven Pump	4,730 lbs.	S
					E. Fire Pump Diesel Driven Pump Driver	3,450 lbs.	SB
					F. Fire Pump Diesel Drive Pump Gear	1,450 lbs.	S
					G. Fire Pump Diesel Coupling	181 lbs.	S
					H. Fire Pump Elec. Driven Pump	4,730 lbs.	S
					I. Fire Pump Elec. Driven Pump Mtr.	4,800 lbs.	S

TABLE 4 (CONT.)

	Crane/Hoist Equipment	I.D. Number	Location	Elevation	Projected Loads	Approx. Load Wts.	*Anticipated Lifting Device
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 Assemly	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



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

Safe load area shown in cross-hatched area.

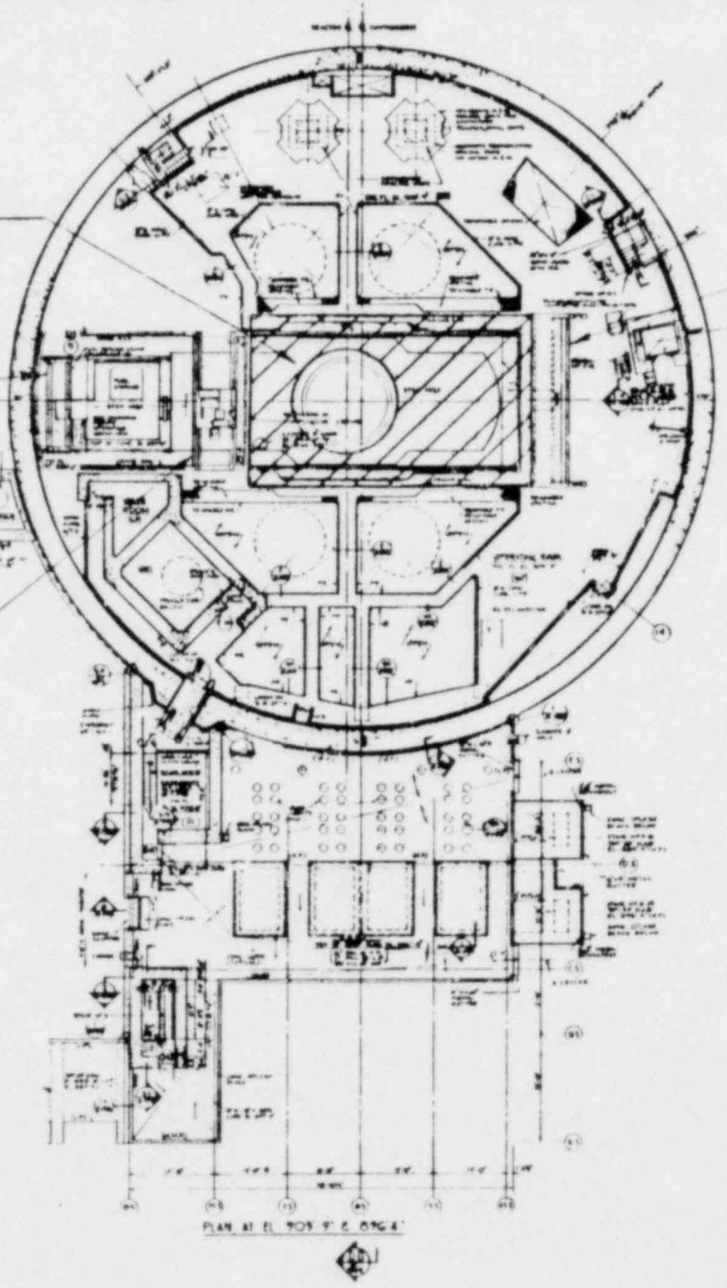
FIGURE 1

Fuel Building
Overhead Crane
and Safe Load Areas

Fuel Building
Fuel Handling Bridge Crane

COMANCHE PEAK SES

FUEL BUILDING



*NOTE: Safe load area is within cross-hatched region
Note that area above reactor vessel is excluded from safe load area.

FIGURE 2

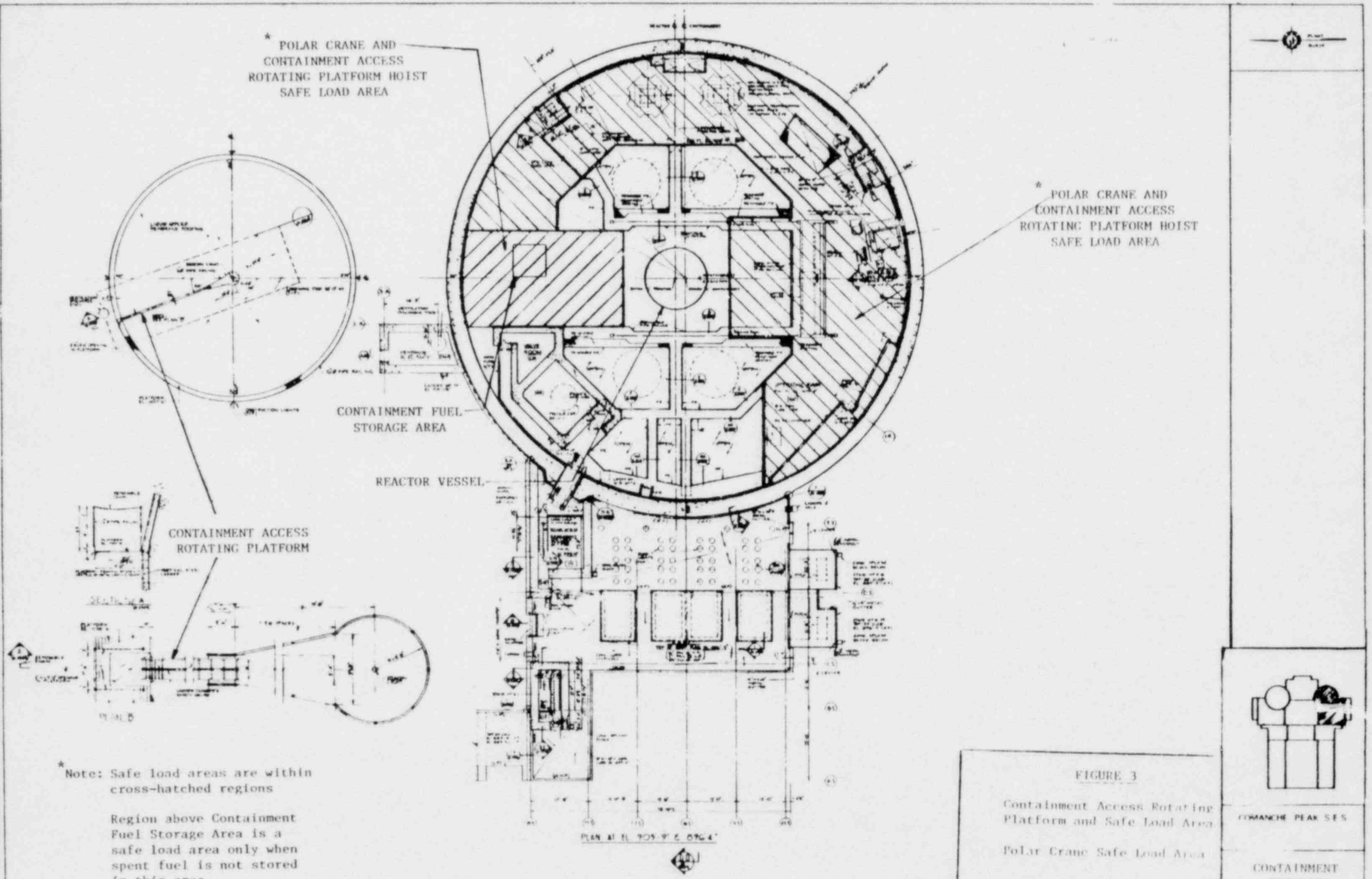
Auxiliary Upper Crane and Safe Load Area

Containment Fuel Handling Bridge Crane

Containment Refueling Machine

COMANCHE PEAK

CONTAINMENT BUILDING



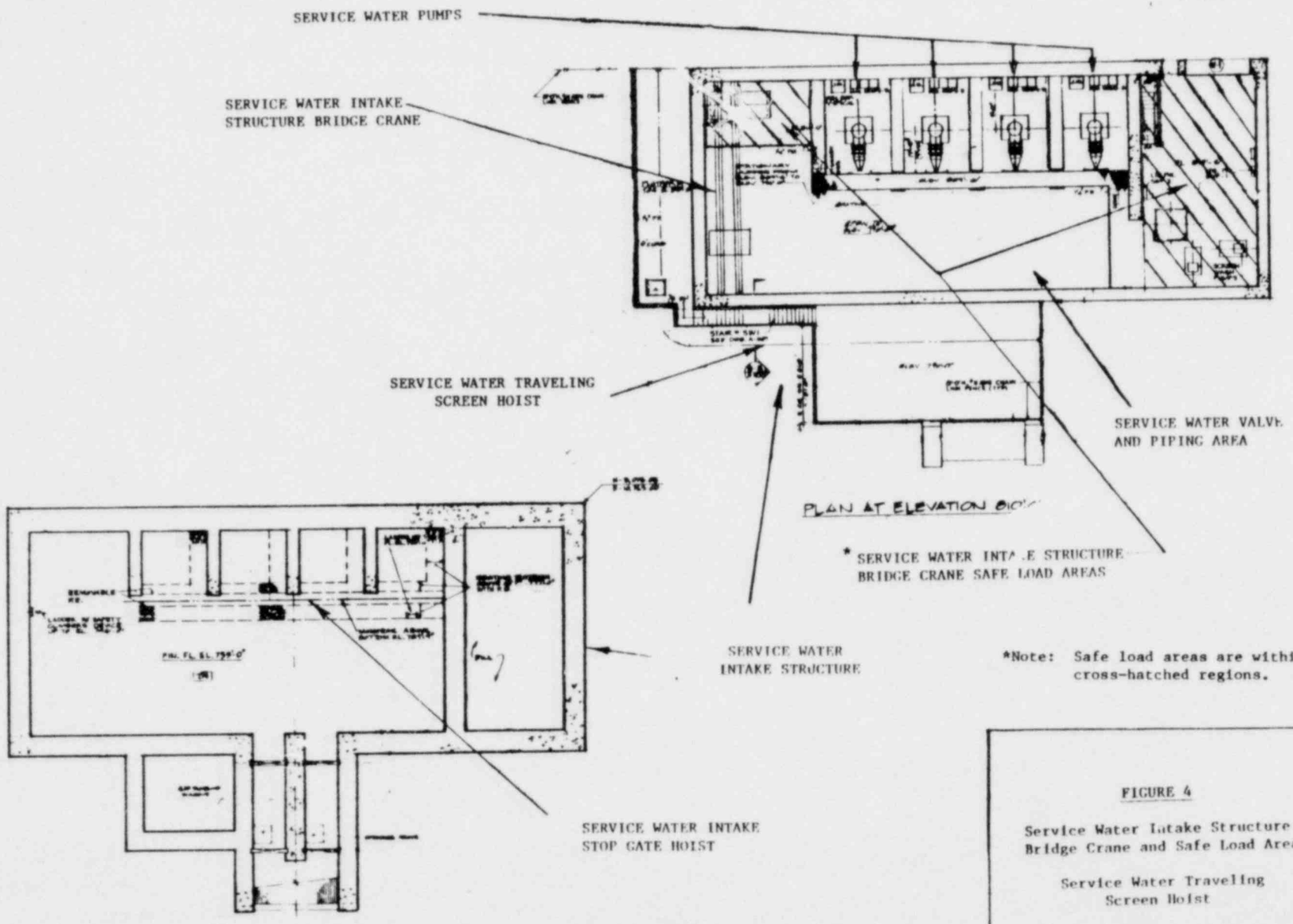
*Note: Safe load areas are within cross-hatched regions

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

FIGURE 3

Containment Access Rotating Platform and Safe Load Area

Polar Crane Safe Load Area



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

FIGURE 4

Service Water Intake Structure Bridge Crane and Safe Load Area

Service Water Traveling Screen Hoist

Service Water Intake Stop Gate Hoist

COMANCHE PEAK S.E.S.

SERVICE WATER INTAKE

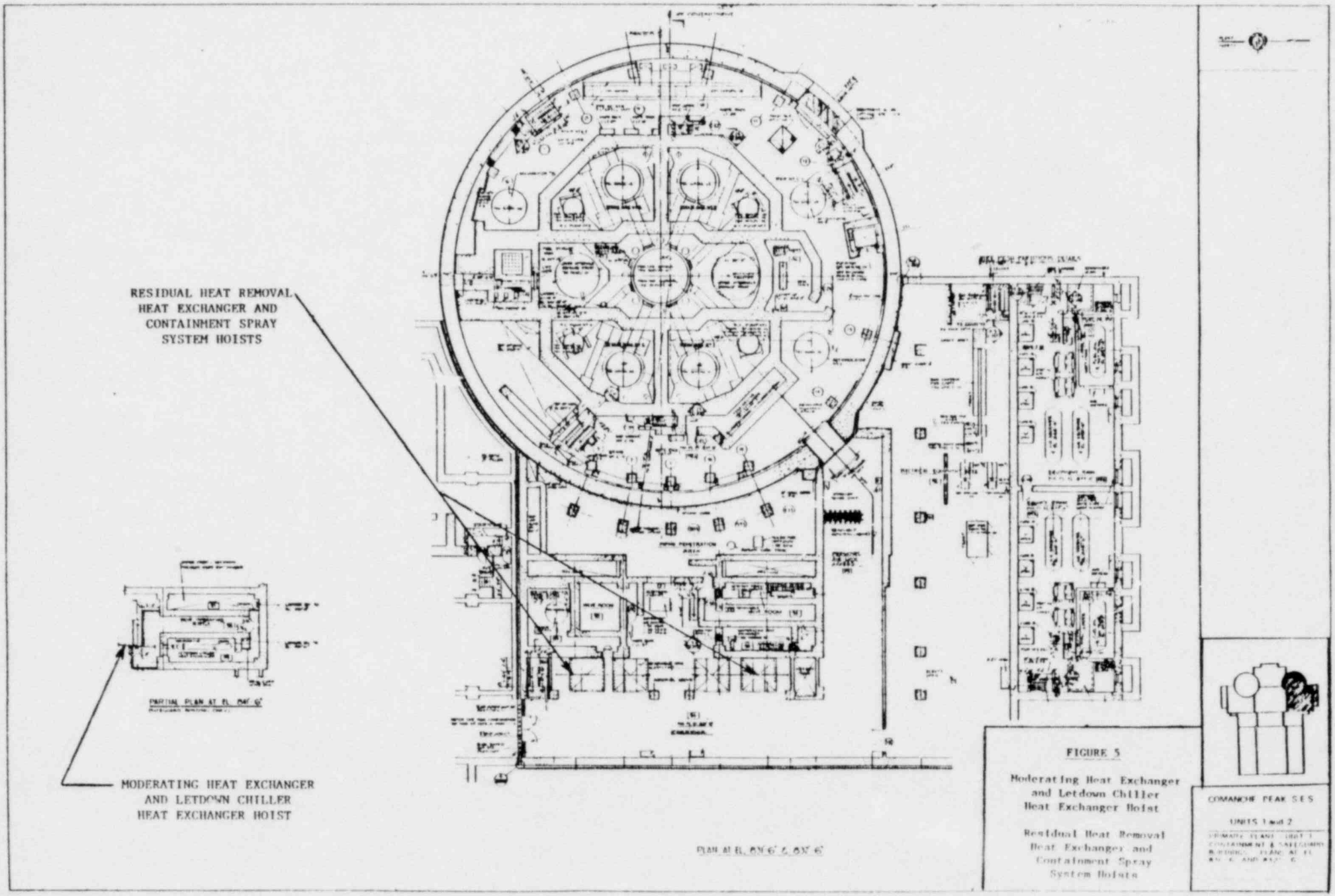


FIGURE 5

Moderating Heat Exchanger and Letdown Chiller Heat Exchanger Hoist

Residual Heat Removal Heat Exchanger and Containment Spray System Hoists

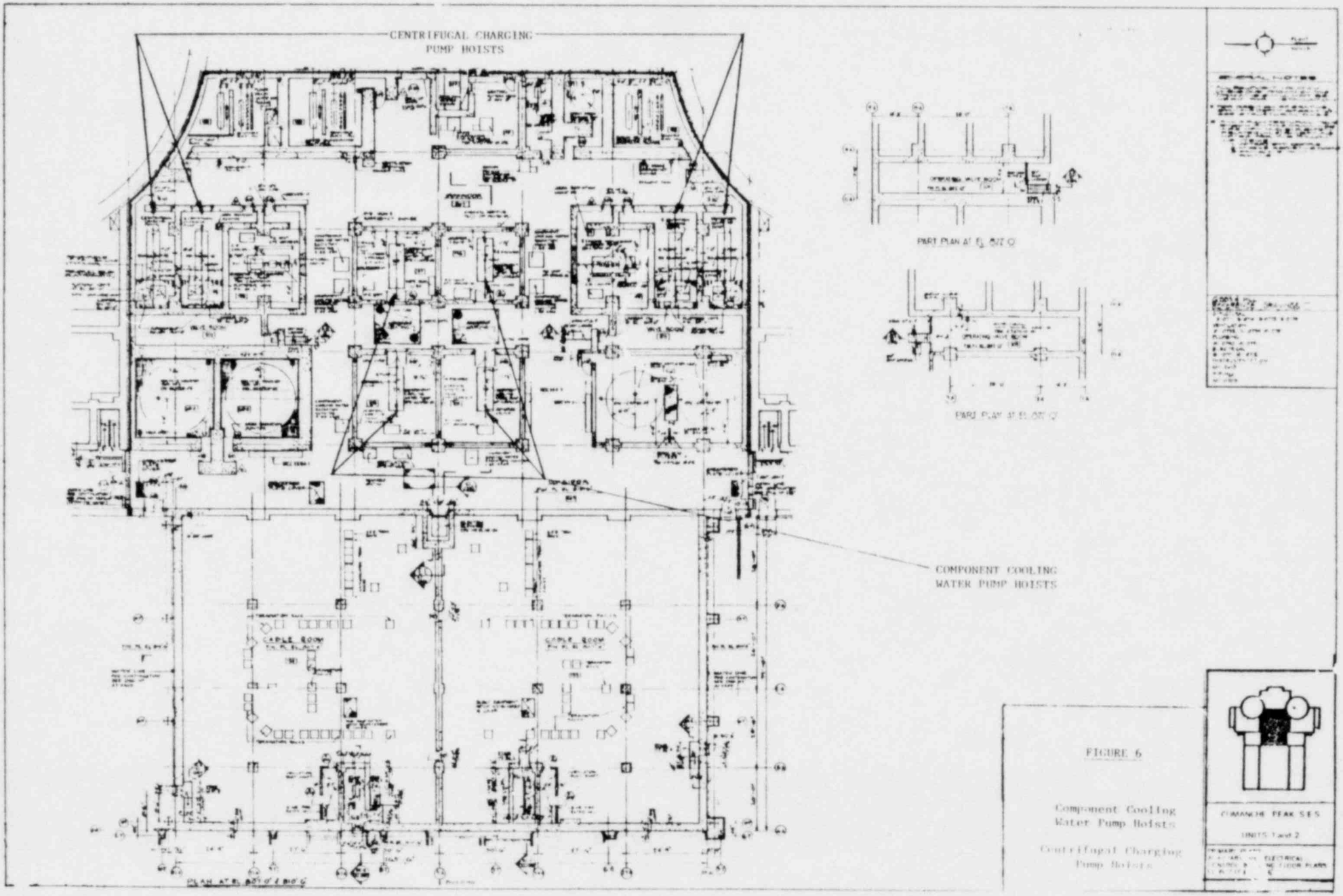


FIGURE 6

Component Cooling
Water Pump Hoists

Centrifugal Charging
Pump Hoists

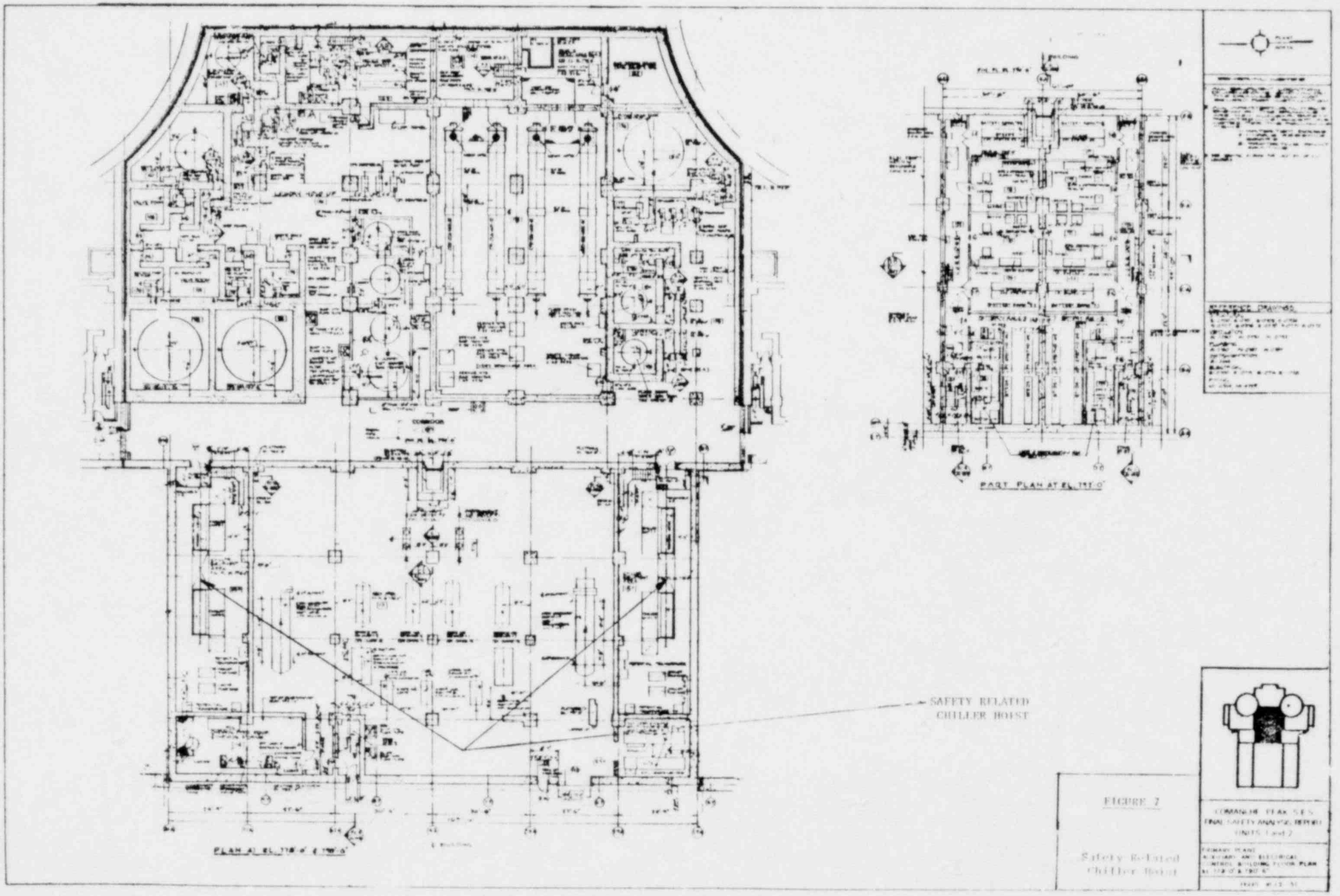
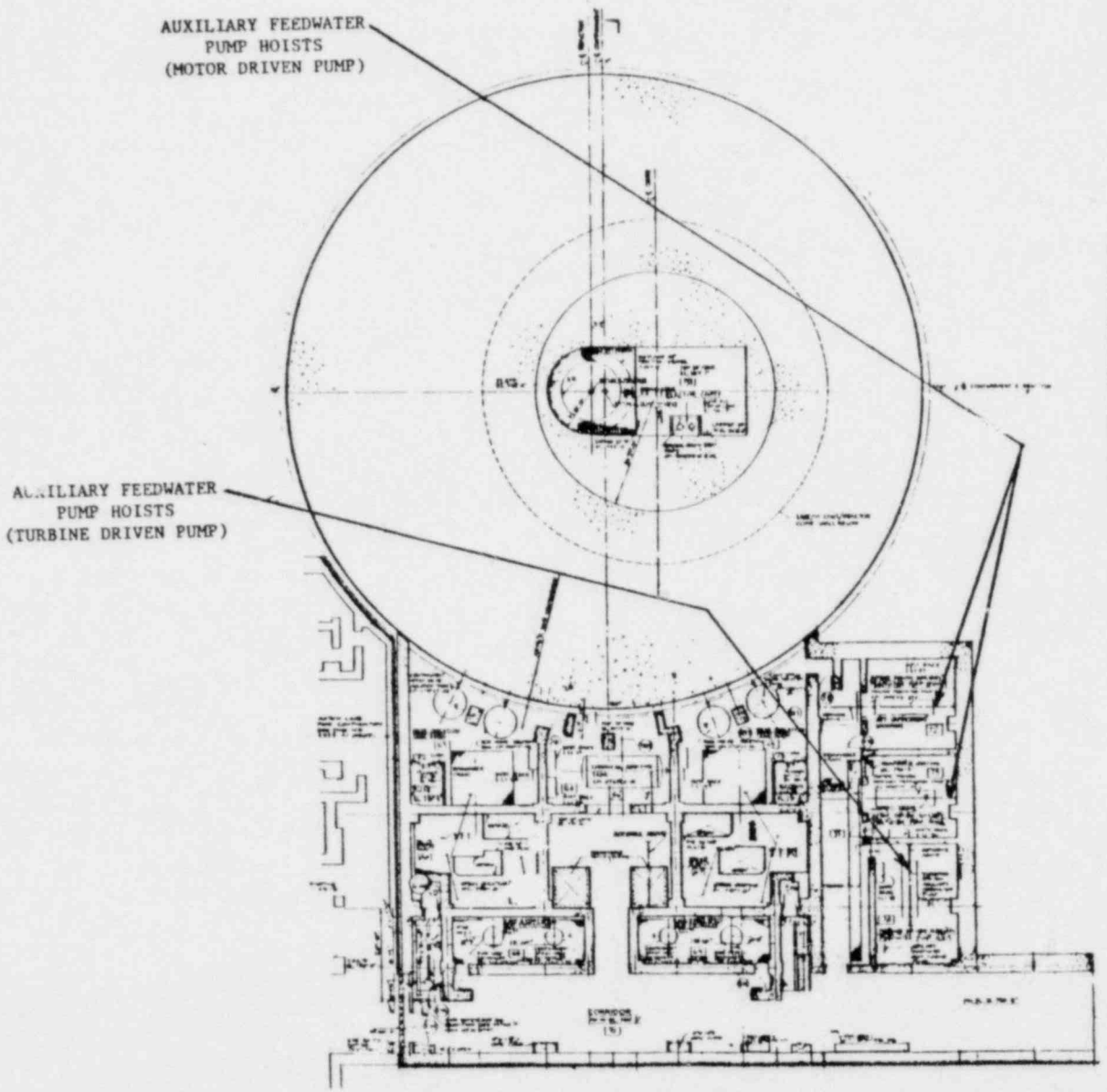


FIGURE 7

Safety Related Chiller Hoist



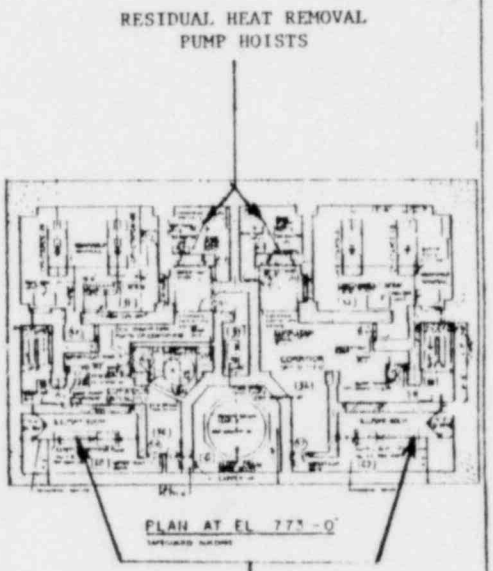


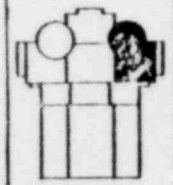
FIGURE 8

Safety Injection
Pump Hoists

Residual Heat Removal
Pump Hoists

Auxiliary Feedwater
Pump Hoists
(Motor Driven Pump)

Auxiliary Feedwater
Pump Hoists
(Turbine Driven Pump)



CHEMICHE PEAK [illegible]

UNITS 1 and 2

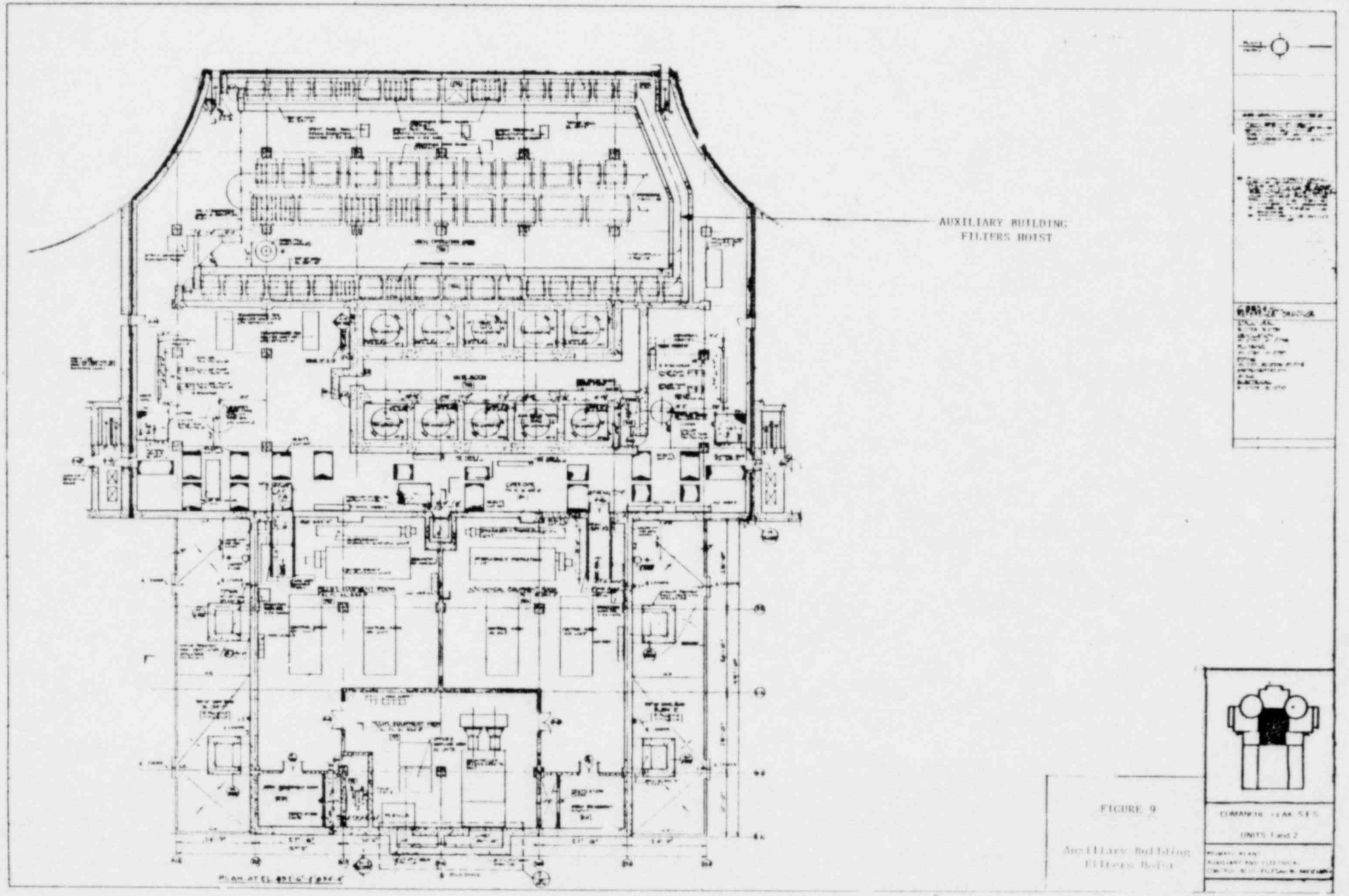


FIGURE 9

Auxiliary Building
Filters Hoist

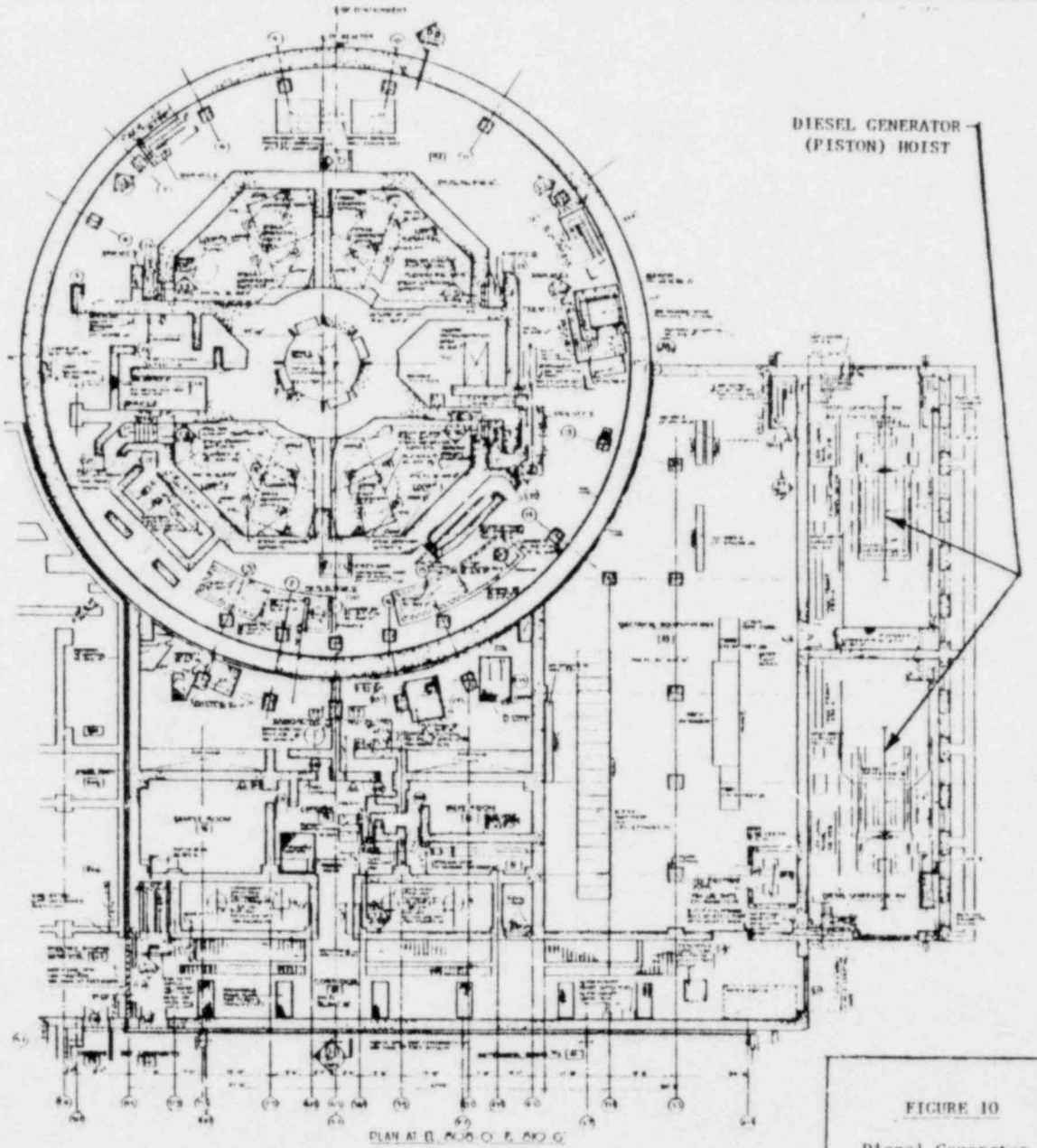


FIGURE 10

Diesel Generator
(Piston) Hoist

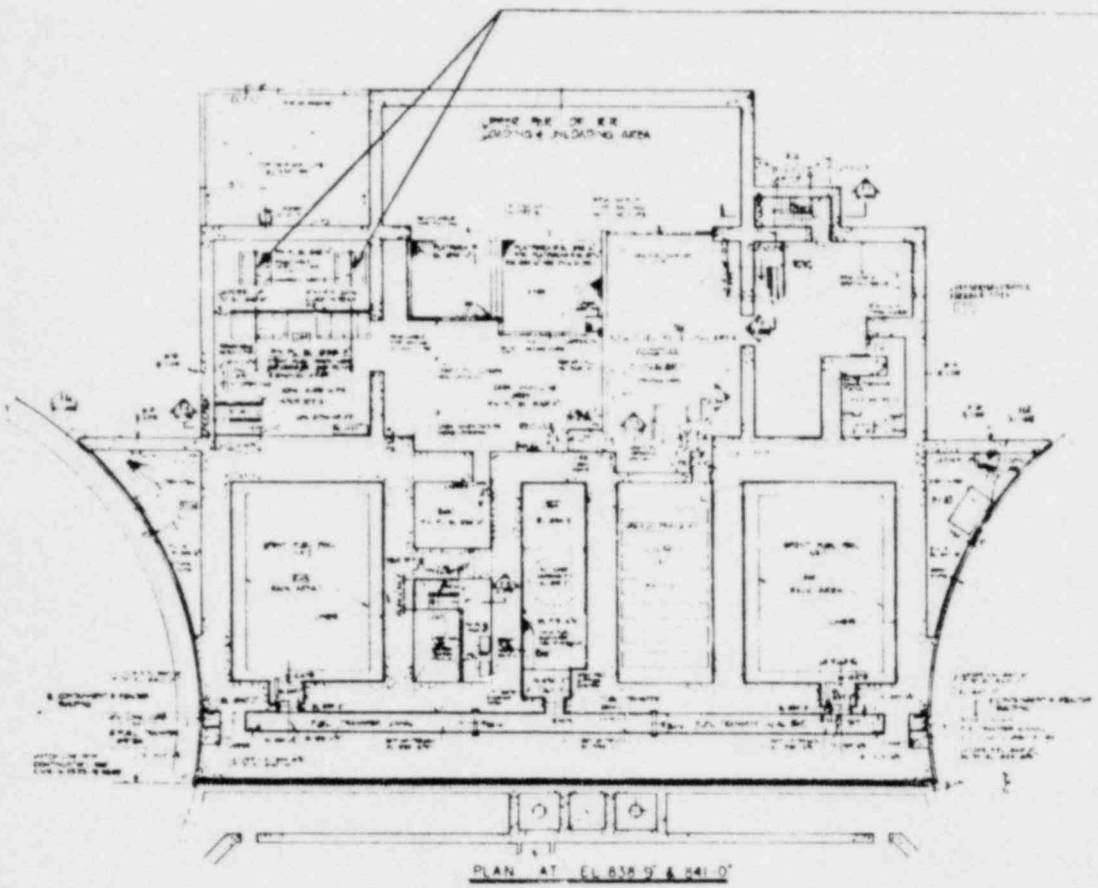


FIGURE 11

Spent Fuel Pool
Heat Exchanger Hoists

COMANCHE PEAK S.E.S.

UNITS 1 and 2

PRIMARY PLANT
FUEL HOISTING FLOOR PLAN
AT EL 838'9" & 841'0"

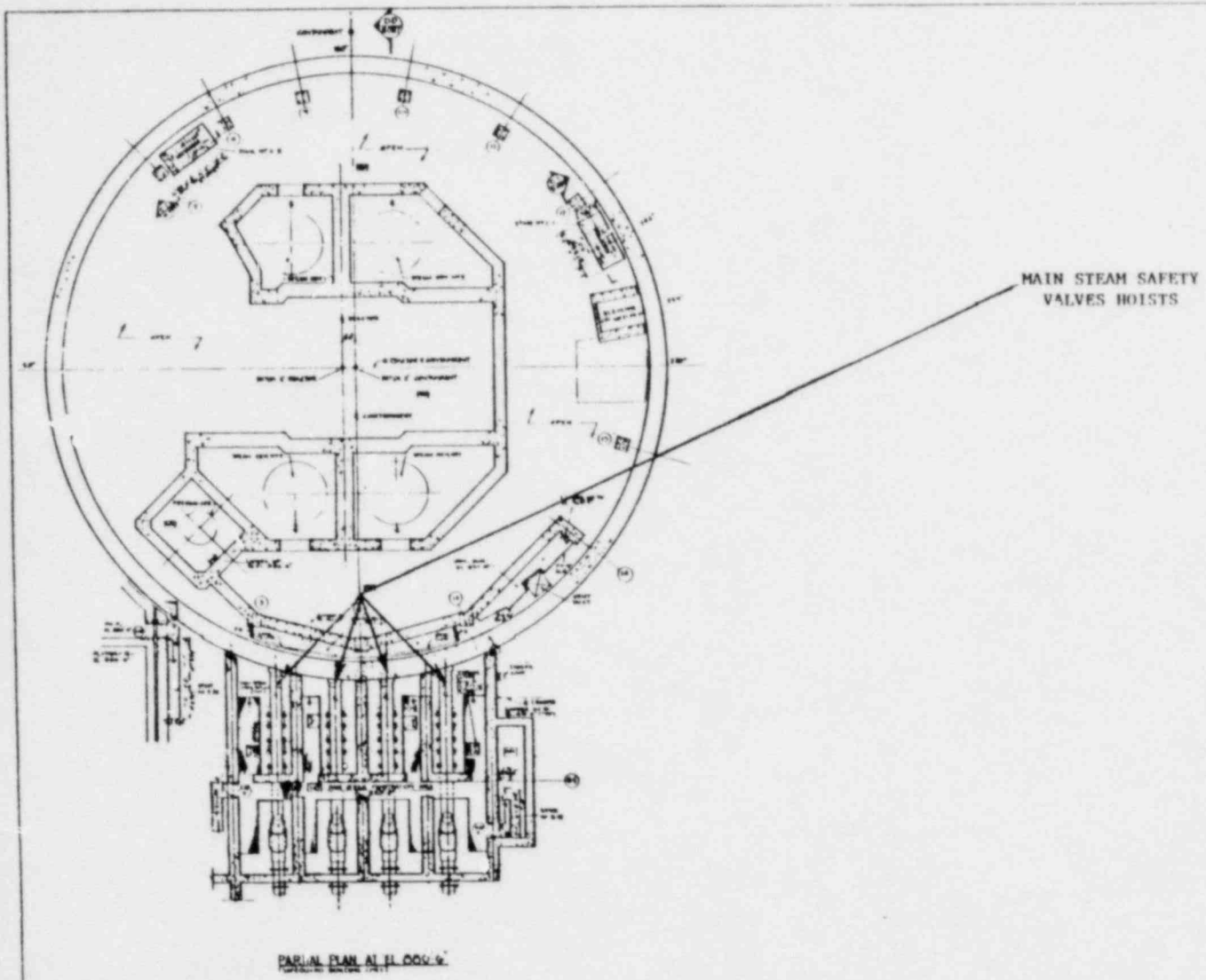


FIGURE 12

Main Steam Safety
Valves Hoists

TEXAS UTILITIES SERVICES INC.

Log # TUS-3193
File # 903.11

OFFICE MEMORANDUM

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 Br ch 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 as 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 - 4:20pm

PLACE 31 / Betbeder Hearing Operations

NAME	ORGANIZATION
John McGarry	31
Donald R. Woodlan	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	(W) NTD - STRUCTURAL MECHANICS DEPARTMENT
John McInerney	W NTD / 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 EXCECUTE 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 QUALFICATION:

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

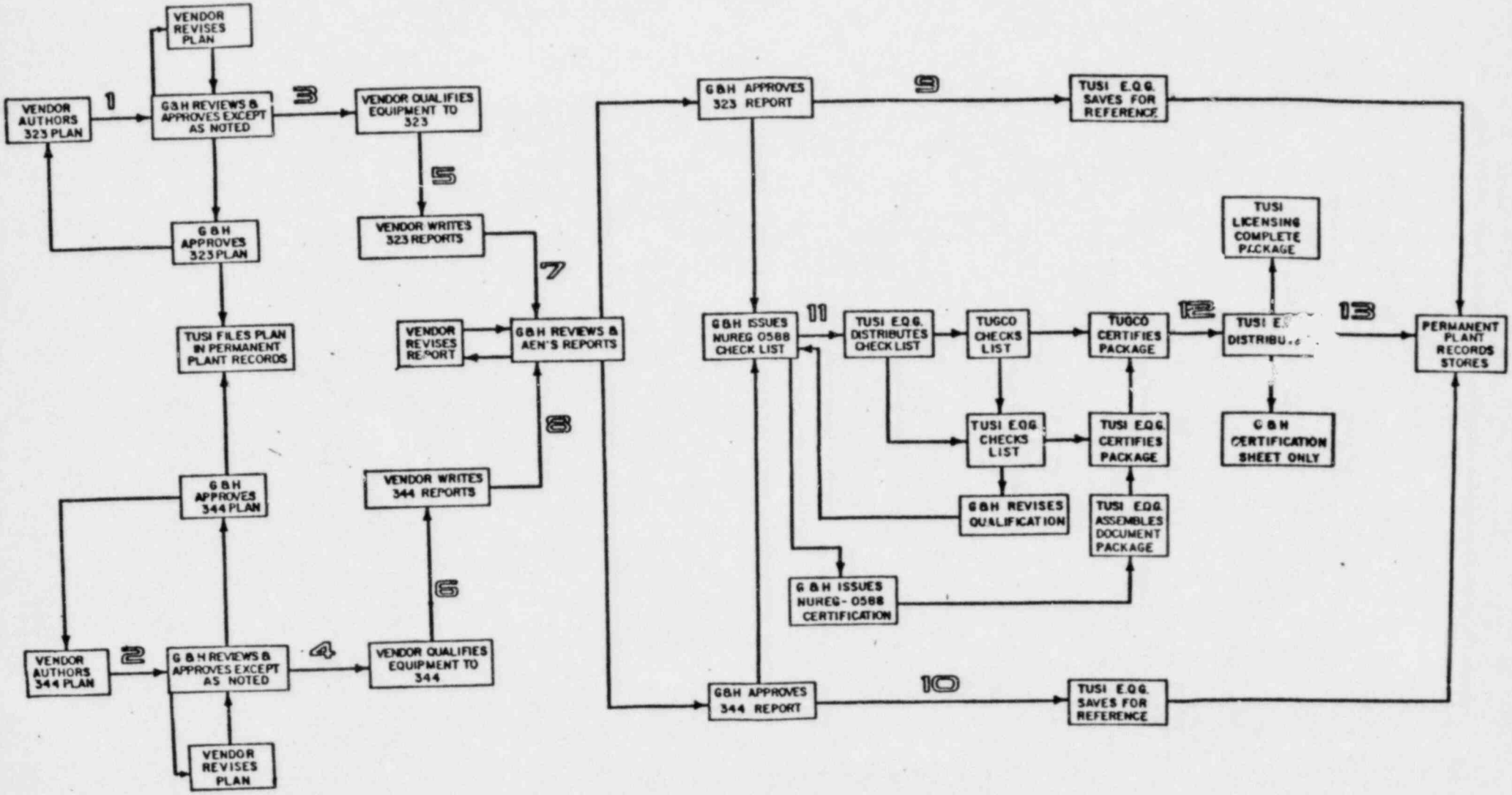
TEXAS UTILITIES GENERATION COMPANY
COMANCHE PEAK STEAM ELECTRIC STATION
SPECIAL ANALYSIS
SEISMIC CATEGORY I EQUIPMENT QUALIFICATION
(CLASS 1E AND NON-CLASS 1E)

A. IEEE 344 (CLASS 1E)

	PLANS	REPORTS
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)

	PLANS	REPORTS
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



BOP EQUIPMENT QUALIFICATION FLOW DIAGRAM

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:

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

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

NUCLEAR SAFETY RELATED:
[X] Yes [ ] No

EQUIPMENT	CLASS 1E	QUALIFICATION PLAN		QUALIFICATION METHODOLOGY				QUALIFICATION REPORT		REMARKS
COMPONENTS/ STATUS		PLAN IDENTIFICATION	PLAN STATUS	DYN ANAL	STAT ANAL	TEST	PAST HIST	REPORT IDENTIFICATION	REPORT STATUS	
Service Water Pump Motors (900 H.P.) Plan - APP Report - APP	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 2-5-79	

LEGEND: APP - APPROVED
AEN - APPROVED PT AS NOTED, MAY PROCEED WITH FABRICATION
FIO - FOR INFO
RFC - RETURNED TION, MAY NOT PROCEED WITH FABRICATION

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

Q150.6 QUALIFICATION SUMMARY OF EQUPMENT

	SPEC. NO.	DESCRIPTION OF EQUIPMENT
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