Enclosure 1 to TXX-96022
(651 total pages)

Individual Plant Examination of External Events

Seismic

Comanche Peak Steam Electric Station

ER-EA-001

Revision 0

August 1994

Prepared By: Date: 8/5/94

8/5/94

8/5/94

8/5/94

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Independent Review By: Date: 8/5/94

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EXECUTIVE SUMMARY

This report documents the Seismic Margin Evaluation of Comanche Peak Steam Electric Station to provide the information requested by the Nuclear Regulatory Commission (NRC) in Generic Letter No. 88-20, Supplement 4, 'Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities'.

The NRC has provided guidance for performing this work in NUREG-1407, 'Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities.' In that document, CPSES is identified as being located in a region of low seismicity and is classified as a reduced-scope plant. The document also describes methodologies that are acceptable to the NRC for performing seismic analysis, including special considerations for reduced-scope plants.

Of these methods, TU Electric chose the Seismic Margin Methodology that is based on the EPRI methodology described in EPRI NP-6041, 'A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1)'. This methodology consists of defining the equipment required to safely shutdown the plant following a review level seismic event and then evaluating the equipment through walkdown and margin analysis to show that the equipment will in fact survive at the review level seismic accelerations. The Individual Plant Examination for Internal Events (IPE) for CPSES has been completed and is the basis for much of the work of developing the safe shutdown equipment list (SSEL). The event trees that were developed in the IPE for the (Loss of Offsite Power (LOOP) and Very Small Break Loss of Coolant Accident (VSBLOCA) were used in this analysis. The event trees describe the plant functions that constitute success for these events. The system analysis that formed the basis for the systems portion of the IPE was used to identify the systems required to support the functions. The systems models and basic events were used to identify the major components of these systems. These major components constitute the SSEL.

For a reduced scope plant, the NRC has specified that the review level earthquake should be the SSE ground response spectra and in-structure response spectra. The scope of the seismic margin evaluation includes the following important considerations.

> Since the review level earthquake (RLE) is the SSE, all components that are designed to SSE levels are assumed to be acceptable at the RLE, and
>
> No seismic margin evaluations above the SSE are required.

Thus, the seismic margin evaluation for the reduced scope plant consists of two principle tasks: first, to demonstrate the seismic design of SSEL equipment at the SSE level and second, to perform field review/walkdowns of the equipment.

To accomplish the first task, the Seismic Review Team (SRT) conducted a detailed review of the design documentation and verified the seismic design bases and seismic pedigree of SSEL equipment. The second task involved a detailed field review in which the SRT reviewed the important attributes of the seismic equipment, as described in Appendix A of EPRI NP-6041, with particular emphasis being put on anchorage of equipment and systems interaction. A similar review was done of containment systems.

In completing this evaluation the SRT used the extensive design and construction documentation and noted that CPSES is among the most heavily documented plants, in particular as regards inspections and walkdowns to demonstrate the conformance of construction to the design basis.

The systems, structures and components that are required to remain functional for the SSE level earthquake, that is, those that are designated seismic category I, were included in historical program CAP (Corrective Action Program), that was implemented to demonstrate the adequacy of design and construction of CPSES. This program consisting of several individual programs addressing different disciplines, was completed in 1989 as part of the design, construction and licensing activity. These disciplines include equipment qualification, systems interaction, civil/structural, large and small bore piping and supports, conduit and conduit supports, cable trays and cable tray hangers and HVAC ducting and supports. For each of these disciplines, design basis documents, field verification modules, test reports and evaluations and numerous reports dealing with the disposition of specific design, analysis and inspection issues were available to the SRT. In addition the SRT observed that these programs were reviewed and the results approved by the NRC. The SRT concluded that for certain of the walkdowns recommended in NP-6041, these historical programs meet the requirements. The discussion of these programs found in section 2 of the report supports the SRT conclusion that these historical programs provide ample evidence of the seismic adequacy of CPSES.

With specific regard to the walkdown of the SSEL equipment and containment systems, the SRT was aided greatly by the availability of extensive design documentation and computerized mechanical and electrical equipment lists. Prior to undertaking the actual walkdowns, the SRT reviewed a number of design documents related to the various equipment on the SSEL, and prepared CPSES specific walkdown screening and evaluation sheets.

Walkdowns were conducted in all Category I buildings. Among the group of components that were similar and similarly supported, one or two representative components were selected for detailed walkdown inspection. Other SSEL items were reviewed on the basis of a walkby. Special attention was provided to seismic spatial interaction relationship, field conditions and housekeeping and maintenance.

The seismic capability walkdowns further emphasized the fact that SSEL components are well designed and constructed and in general do not have any adverse field conditions. The walkdowns however did result in a few observations. Most observations were minor and involved maintenance type issues. The only two significant observations pertained to a control room proximity issue (the presence of an unanchored non-plant equipment close to safety related equipment) and an instance of insufficient clearance between an MCC and adjacent cable tray supports. To address both of these issues, the SRT took appropriate follow-up actions ensuring their satisfactory resolution. All observations and their resolutions are listed in Table 5.1, Appendix B of this report.

The SRT has concluded that the equipment required to function in order to safely shutdown the plant following a seismic event meets the design requirements for seismic category I equipment and is adequately installed with regard to anchorage and systems interaction considerations.

This report was done primarily for CPSES Unit 1. Since Units 1 and 2 are almost identical in design, the results and insights obtained from the Unit 1 study are expected to be applicable to Unit 2. In addition, a comparison study will be performed to identify any potential differences between the two units. If there are any differences they will be reviewed to determine whether any unique seismic vulnerabilities exist at Unit 2. As part of this study, a plant walkdown of Unit 2 will be performed.

1. GENERAL PLANT DESCRIPTION

1.1. Site Characteristics

Location

The Comanche Peak Steam Electric Station (CPSES) site is located in Somervell County in North Central Texas. The CPSES is in an area of low population having a rural farm-ranch community setting. The nearest communities are Glen Rose and Granbury which are approximately 5 and 10 miles from the site respectively. The nearest major population center, city of Fort Worth, is about 40 miles away from CPSES. The site is well suited for nuclear power generating installation because of

- the availability of a large exclusion area with a minimum boundary distance of 5,067 feet
- a population center distance greater than 20 miles
- a rock foundation for all seismic Category I buildings
- a lack of high surface water conditions
- an available cooling water supply
- favorable geologic,, hydrologic, seismic and meteorologic conditions

Geology & Seismology

CPSES site is located on the Comanche Plateau, a subdivision of the Central Texas section of the Great Plains physiographic province. Gently dipping Lower Cretaceous limestone and sandstone directly underlie the site. Two major fault systems, the Balcones and Luling-Mexia-Talco fault zones occur within 200 miles of the site. They are not regarded as active faults but were considered in establishing the Safe Shutdown Earthquake (SSE). There is no evidence of surface faulting within 5 miles of the site thus eliminating the need for considering this factor as a design basis. Seventeen seismic events have been reported with epicenters within 200 miles of the site. The closest large event was a modified Mercalli Intensity VII which occurred in 1882 near Bonham, Texas 155 miles from CPSES. For the purpose of establishing the Safe Shutdown Earthquake, it has been assumed that a Bonham type event could occur as close as 70 miles from the site. Based on these considerations, a conservative Safe Shutdown Earthquake of 0.12g has been selected for the site.

1.2 Nuclear Steam Supply System (NSSS)

CPSES is a two unit nuclear plant with generating power of 1156 MW per unit. The construction permit for the plant was issued on December 17, 1974 while operating license was obtained on April 17, 1990 for Unit 1 and on April 6, 1993 for Unit 2.

Westinghouse is the Nuclear Steam Supply System (NSSS) Vendor for CPSES. The NSSS consists of a pressurized water reactor (PWR) and supporting auxiliary systems. The reactor core is three-region cycled core composed of slightly enriched uranium dioxide pellets enclosed in pressurized sealed zircaloy tubes. The reactor core thermal rated power is 3411 MWt which results in a NSSS rated thermal power of approximately 3,425 MWt.

The Reactor Coolant System (RCS) consists of four parallel, similar heat transfer loops, each consisting of a reactor coolant pump and steam generator connected to the reactor vessel. In addition, the system includes the pressurizer, pressurizer relief tank, connecting piping, and instrumentation necessary for operational control and protection.

The Containment at CPSES is a steel-lined reinforced concrete structure, which is a vertical cylinder with a hemispherical dome supported on a foundation mat with a reactor cavity pit. The Containment Building completely encloses the reactor and RCS. An interior structure within the Containment Building supports and provides shielding for the reactor and other NSSS Components. The Containment is designed to withstand the pressures and temperatures resulting from a spectrum of LOCAs and secondary system breaks as well as to withstand tornado generated missile and pressure loads, and all normal and accident loads including the Safe Shutdown Earthquake (SSE).

2. PLANT SEISMIC DESIGN BASIS

As part of the design, construction and licensing process for Unit 1, TU Electric completed in 1989 extensive design validation and post construction hardware validation programs for eleven disciplines. These disciplines include equipment qualification, systems interaction, civil/structural, large and small bore piping and supports, conduit and conduit supports, cable tray and cable tray hangers, and HVAC ducting and duct supports. The purpose of the overall program, known as the Corrective Action Program (CAP), was to validate both the design and hardware at CPSES, including resolution of specific technical issues.

Design-related licensing commitments were identified during the design validation portion of CAP with Design Basis Documents (DBDs) developed. Design documentation (i.e. calculations, reports, drawings, etc.) were validated and in many cases new documentation were created. Where the existing design did not satisfy the design criteria, modifications were made to satisfy the design criteria. Installation specifications were also revised to reflect the validated design requirements containing the inspection requirements necessary to assure that the as-built hardware complied with the validated design.

The hardware validation portion of CAP was implemented by the Post Construction Hardware Program (PCHVP). The purpose of the PCHVP was to demonstrate that as-built systems, structures, and components were in compliance with the installation specifications and design drawings (validated design), or to identify modifications that were necessary to bring the hardware into compliance with the validated design.

As mentioned previously, the Unit 1 validated installation specifications included the hardware inspection requirements for new and modified installations. These requirements (inspection attributes) formed the basis for the PCHVP Attribute Matrix. This matrix was a complete set of final acceptance attributes for installed commodities. The final acceptance attributes were verified by either physical validations or engineering evaluations.

Extensive walkdowns were performed by Engineering or Quality Control for each attribute identified. These initial evaluations and the QC inspections or engineering evaluation of selected attributes were procedurally controlled. This process was structured to provide reasonable assurance that the final configuration for Unit 1 hardware met the validated design.

The Corrective Action Program was then a comprehensive program to validate the design and hardware for Comanche Peak, including the resolution of technical issues. Design documentation was validated, often by augmenting the existing design with new calculations and drawings. Walkdowns were conducted to gather data for the analyses and provided documented evidence that the design met the as-built condition. This program was considered and greatly influenced the scope of work required by Comanche Peak, a reduced scope plant, to address the seismic IPEEE.

2.1 SEISMIC INPUT TO STRUCTURES AND EQUIPMENT

Design Response Spectra

Design response spectra for both horizontal and vertical ground motion for the SSE are shown in Figures 2.1-1 and 2.1-2 respectively. Response spectra for 2, 5, 7, 10, and 15 percent of critical damping are provided for both the horizontal and vertical motions and are scaled to the maximum ground accelerations of 0.12g and 0.08g selected for the SSE. For the Operational Basis Earthquake (OBE), a scaling factor of 0.5 is applied to the SSE design spectra.

The response spectra are constructed on the basis of the recommendations of Newmark, Blume, and Kapur (Ref. 1) and conform to the requirements of NRC Regulatory Guide 1.60, Revision 1, with the exception of the 33 Hz to 50 Hz frequency range. In that range, the vertical response spectrum of NRC Regulatory Guide 1.60, Revision 1, (Ref. differs from the vertical response spectrum of Reference 1. The effects of this deviation on the results of the analyses of structures and systems are negligible because they only affect the modes which have low amplification. Similarly, the method recommended in Reference 1 for the construction of vertical response spectra leads to a slight deviation from NRC Regulatory Guide 1.60, Revision 1, (Ref. 39) recommendations for accelerations corresponding to 3.5 Hz. The magnitudes of these differences are negligible.

The response spectra indicate the estimated response of a structure subject to significant nearby earthquake ground motion. The spectra are presented over a range of frequencies corresponding to natural frequencies of structural elements, and they represent the maximum amplitude of motion in structural elements for typical degrees of structural sampling. Because the design response spectra have been developed from a large number of real records, following the procedures recommended by Newmark, the effect of strong motion duration and distance of focal depth are included.

There are, of course, general associations between duration of strong motion and the size of an event. Longer durations of strong motion are expected with greater-sized earthquakes. Higher frequency accelerations are attenuated with greater distance from the epicenter of the earthquake. These conditions are inherent in the strong motion records which are the source of Newmark's work. In no case are the amplification factors less than one.

Design Time History

One horizontal and one vertical SSE artificial time history were developed for the design response spectra requirements presented in this section and the previous section. As an alternative to a site-dependent analysis, these artificial time history records are suitable for use as base excitations for the dynamic structural analysis. The mathematical procedures used to generate these artificial time history records can be briefly summarized as follows:

- The spectral characteristics of the selected site SSE design response spectra are extracted to construct a frequency response function with proper phase factor modification.
- A fast Fourier transform of the frequency response function is performed to obtain a filter impulse response function.
- The filter impulse response function is then integrated with a set of pseudorandom numbers to obtain an artificial time history record.

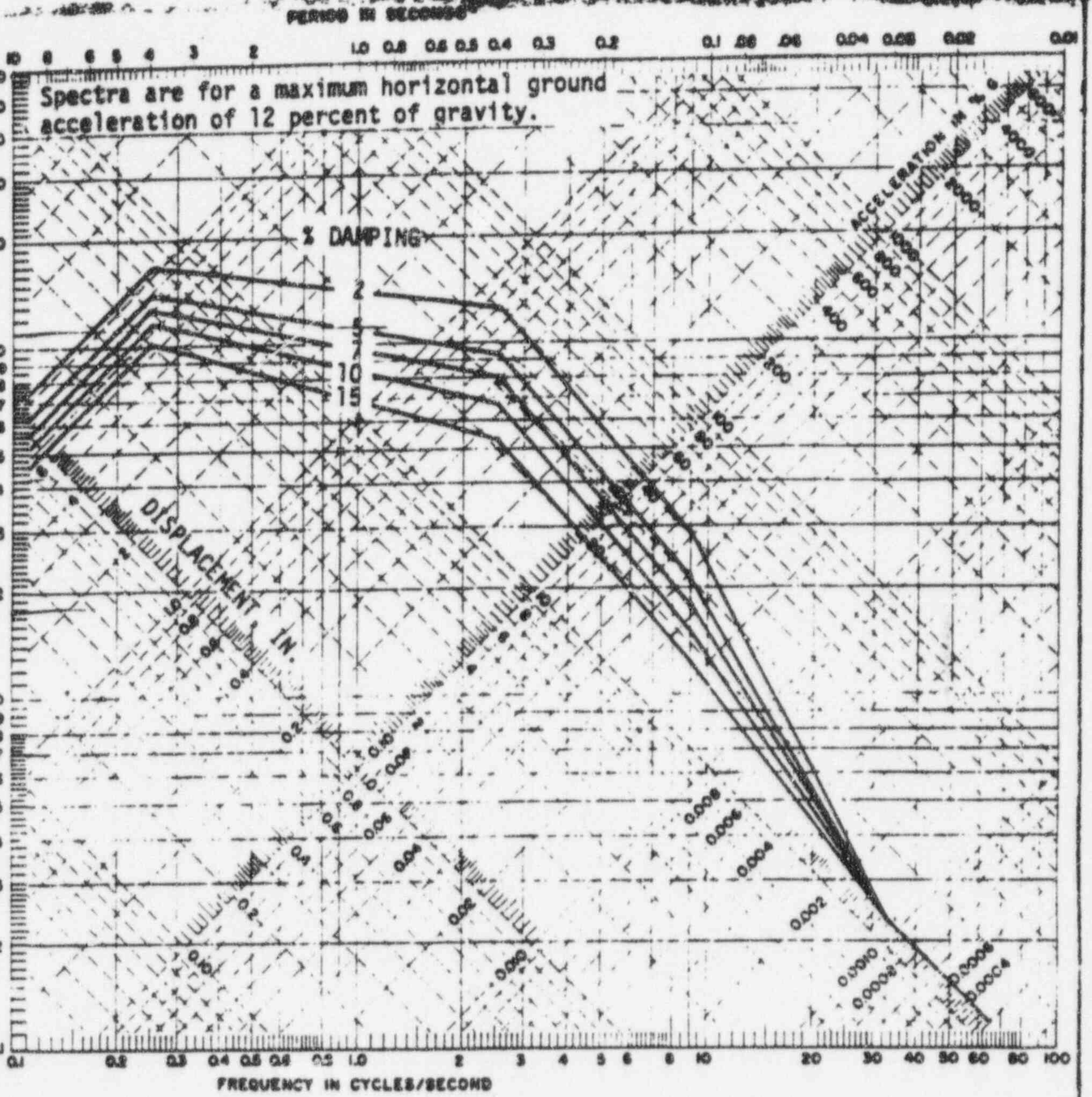
- A comparison is made between the response spectrum derived from the artificial time history and the site SSE design response spectrum. Any unacceptable deviations are corrected by adding a series of sinusoidal impulses with proper amplitude and phase angles until the desirable fit is achieved.

- The artificial time history records meet the minimum acceptance criteria given by Table 3.7.1-1 in Section 3.7.1 of the Standard Review Plan.

The response spectra derived from the horizontal artificial time history record and the selected site SSE design response spectra are presented in Figures 2.1-3 through 2.1-7 for five structural damping values. The corresponding artificial time history is presented in Figure 2.1-8. The response spectra from the vertical artificial time history record and the SSE design response spectra are presented on Figures 2.1-9 through 2.1-13 and the corresponding artificial time history is presented on Figure 2.1-14. Time history durations of approximately 10 seconds have been found necessary to allow the modifications of the time histories to match response spectra values at periods of three to four seconds. A 10 seconds record allows two to three cycles for modification by sinusoidal impulses. A record length of 10.24 seconds is obtained because the fast Fourier transform used for this purpose operates on sets of numbers which are as powers to time: i.e., 1024 is equal to two raised to the tenth power.

The artificial time history records are generated at 0.01 seconds equal time intervals with a time duration of 10.24 seconds. They are in the digitized form of 1024 acceleration values.

The response spectra curves used at CPSES are found in specification CPES-S-1032G (Ref. 4). These curves were validated during CAP as part of the Civil/Structural scope.



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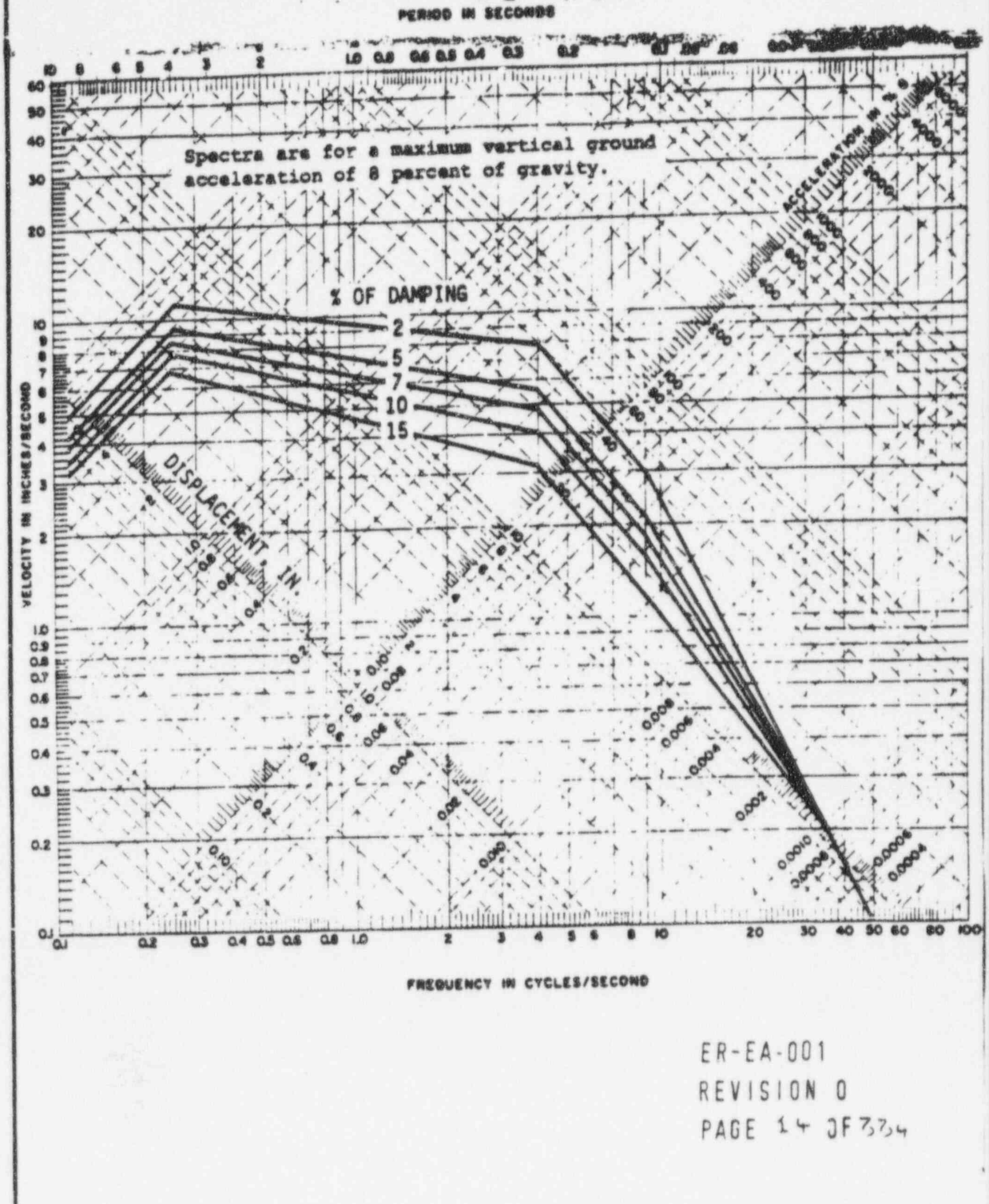
DESIGN RESPONSE SPECTRA FOR HORIZONTAL SAFE SHUTDOWN EARTHQUAKE

FIGURE 2.1-1



Spectra are for a maximum vertical ground acceleration of 8 percent of gravity.

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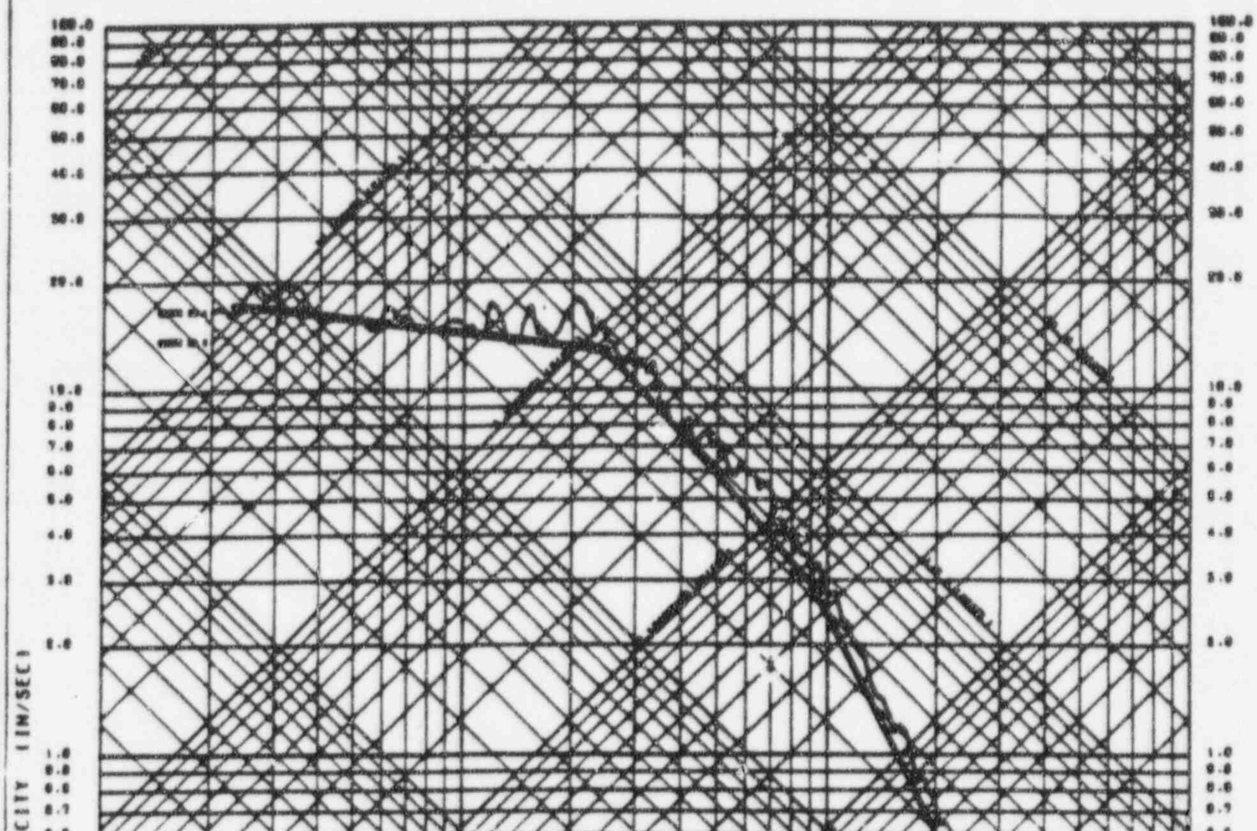
DESIGN RESPONSE SPECTRA
FOR VERTICAL SAFE
SHUTDOWN EARTHQUAKE

FIGURE 2.1-2



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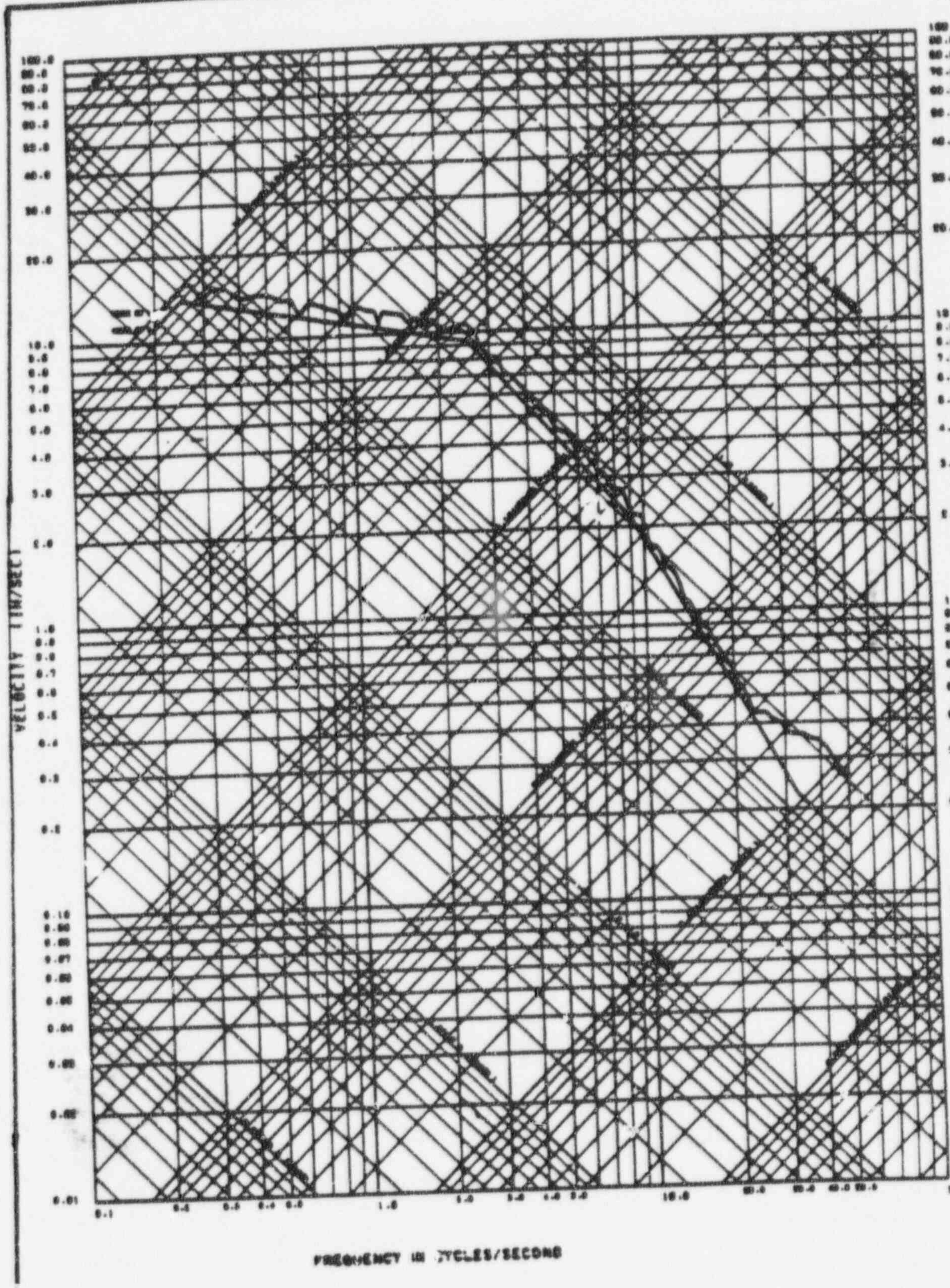
HORIZONTAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
2 PERCENT DAMPING

FIGURE 2.1-3



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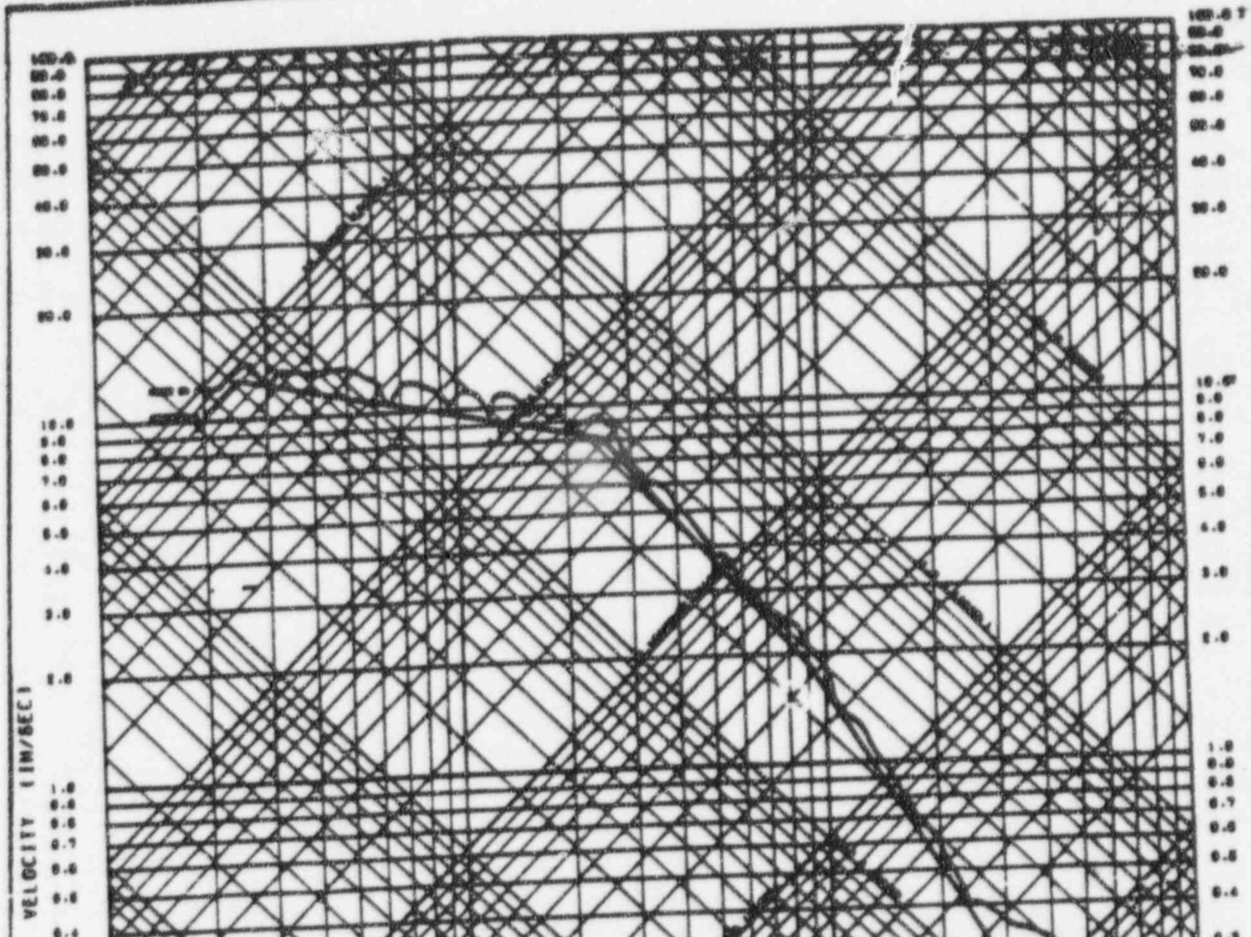
HORIZONTAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
5 PERCENT DAMPING

FIGURE 2.1-4



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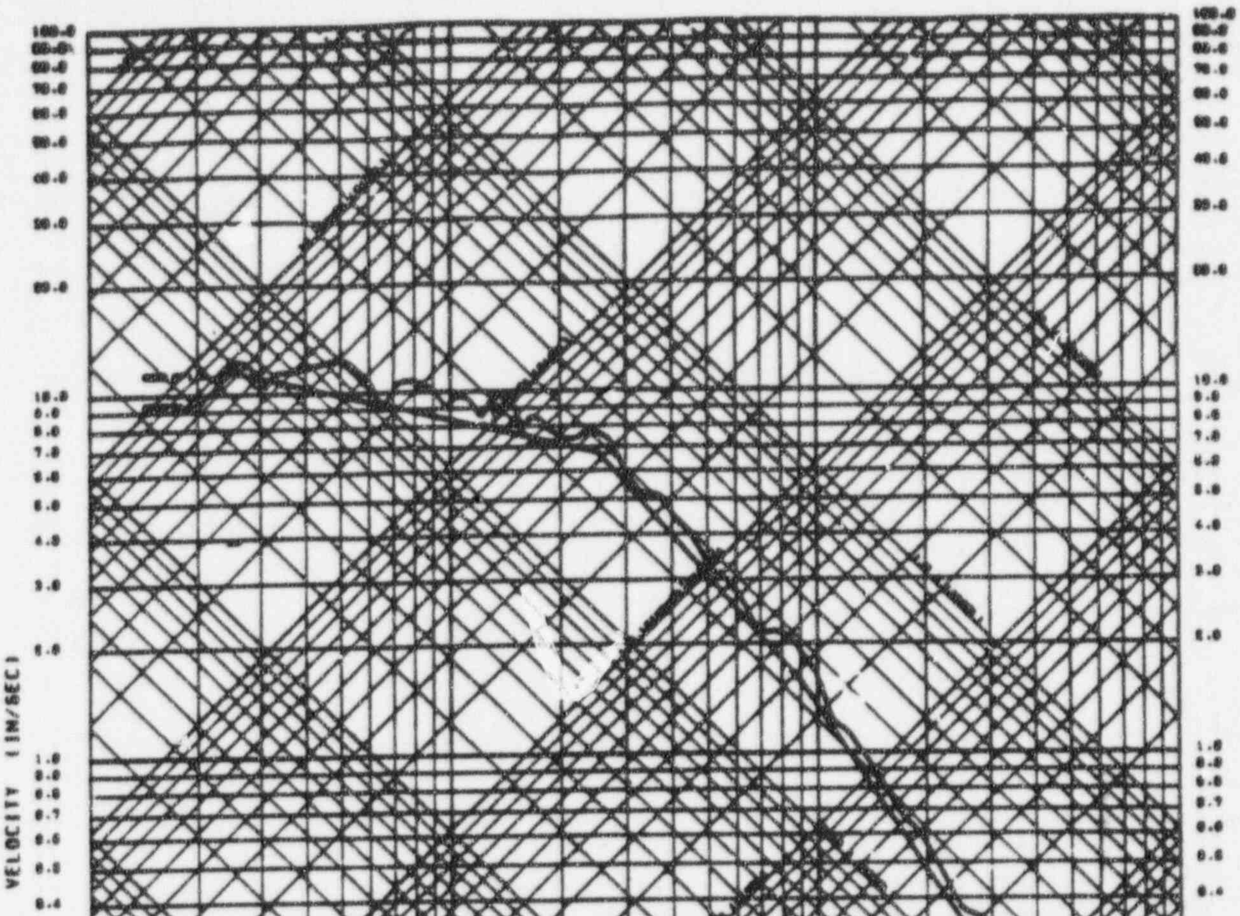
HORIZONTAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
7 PERCENT DAMPING

FIGURE 2.1-5



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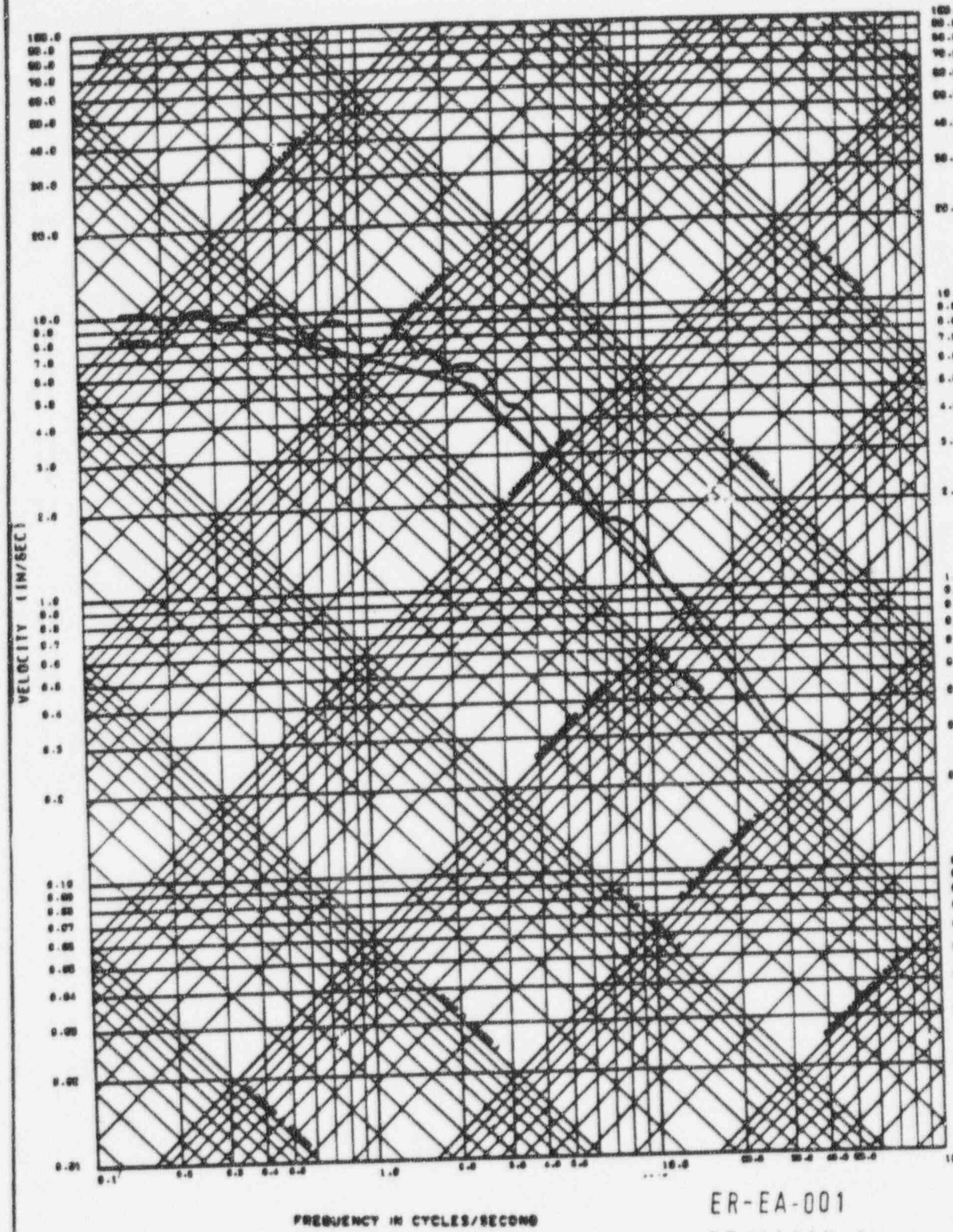
HORIZONTAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
10 PERCENT DAMPING

FIGURE 2.1-6



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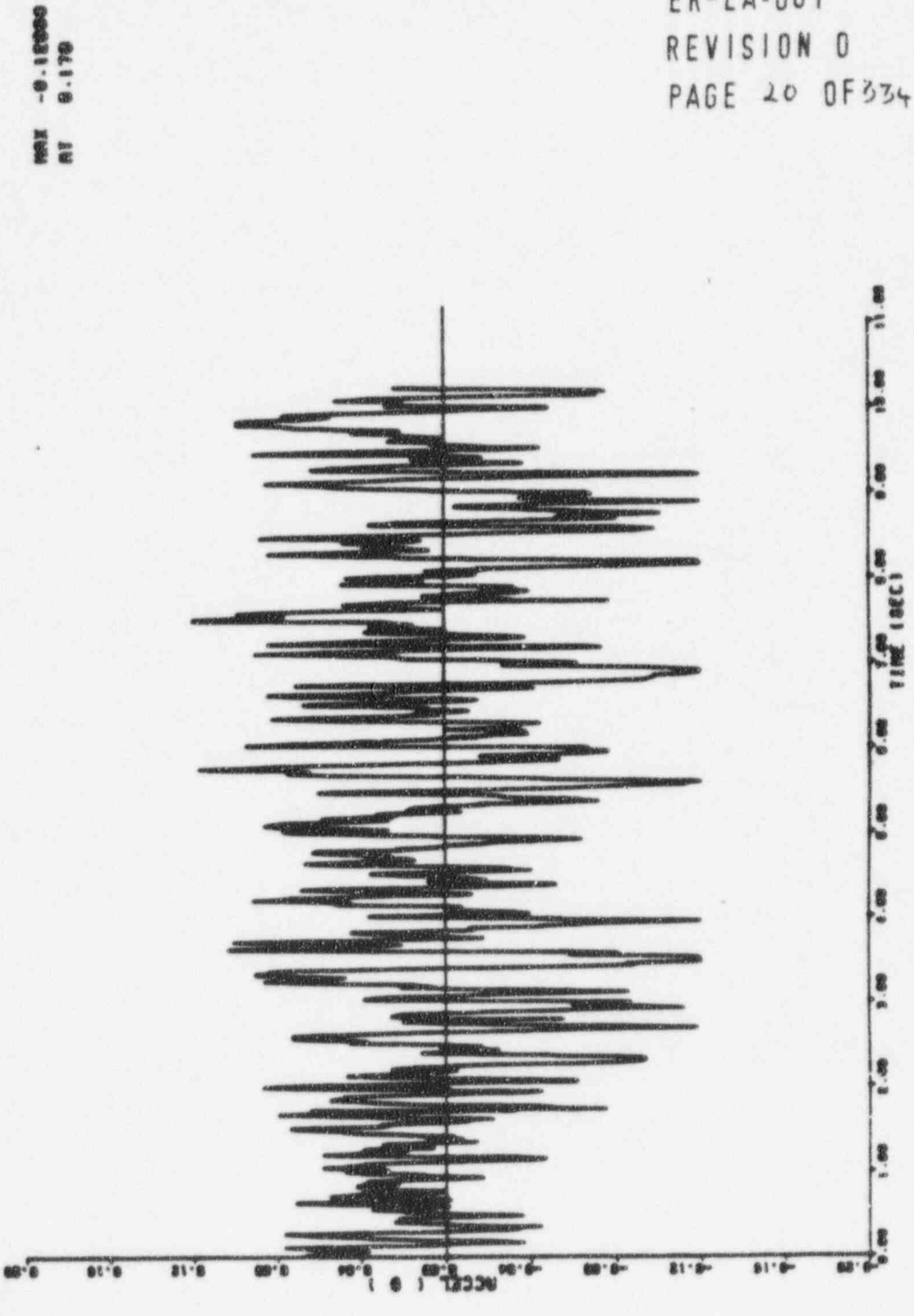
HORIZONTAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
15 PERCENT DAMPING

FIGURE 2.1-7



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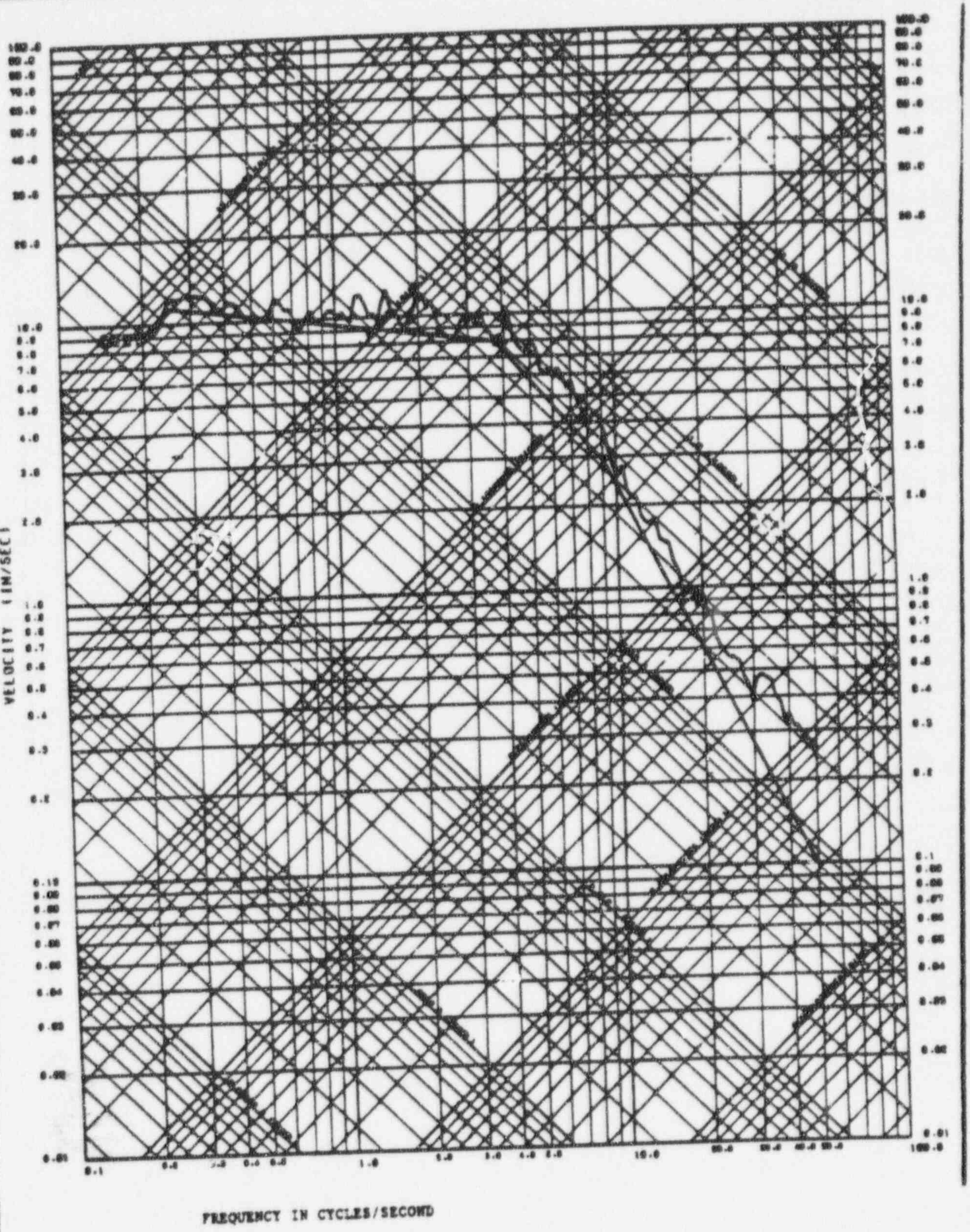
HORIZONTAL ARTIFICIAL ACCELERATION TIME HISTORY

FIGURE 2.1-8



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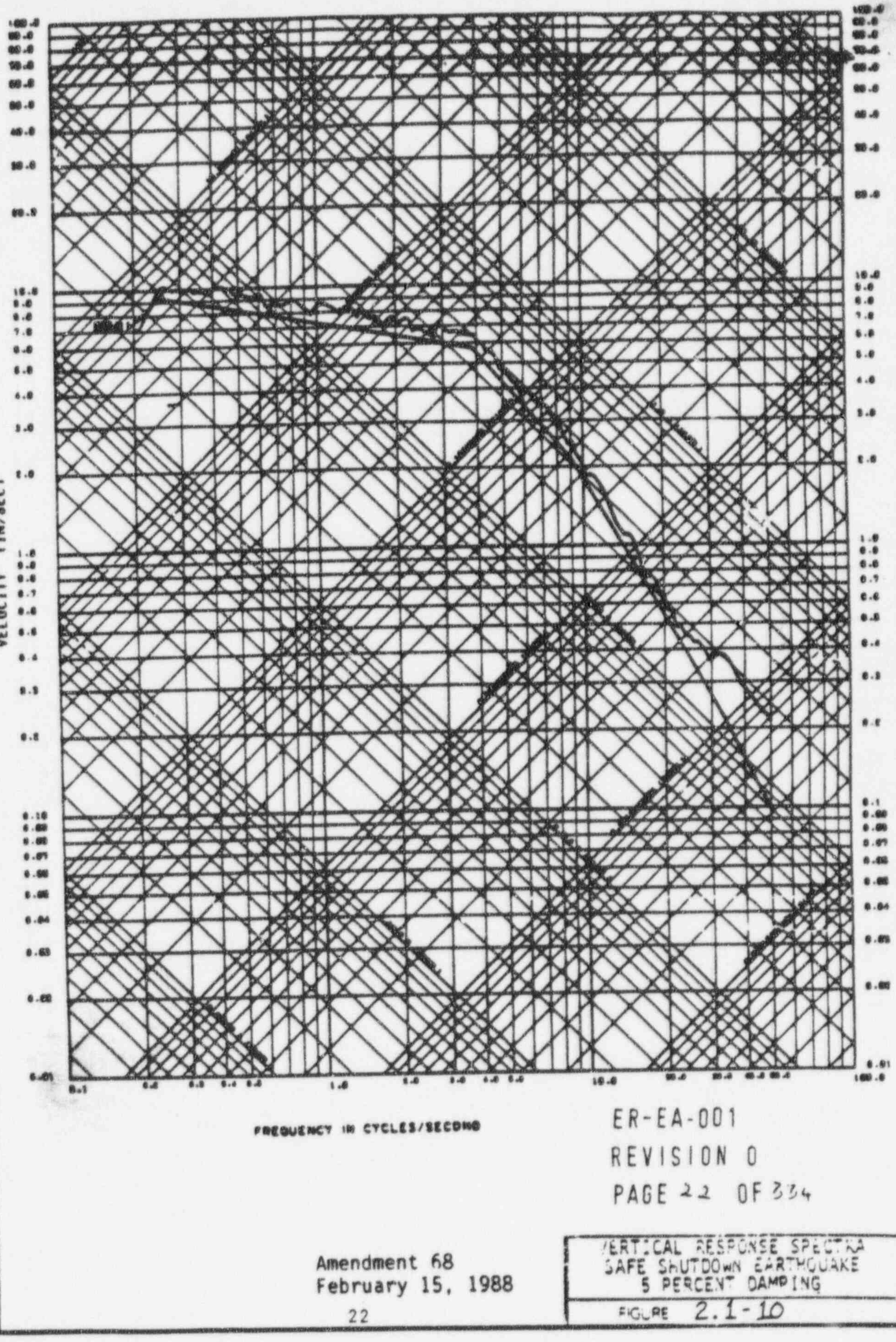
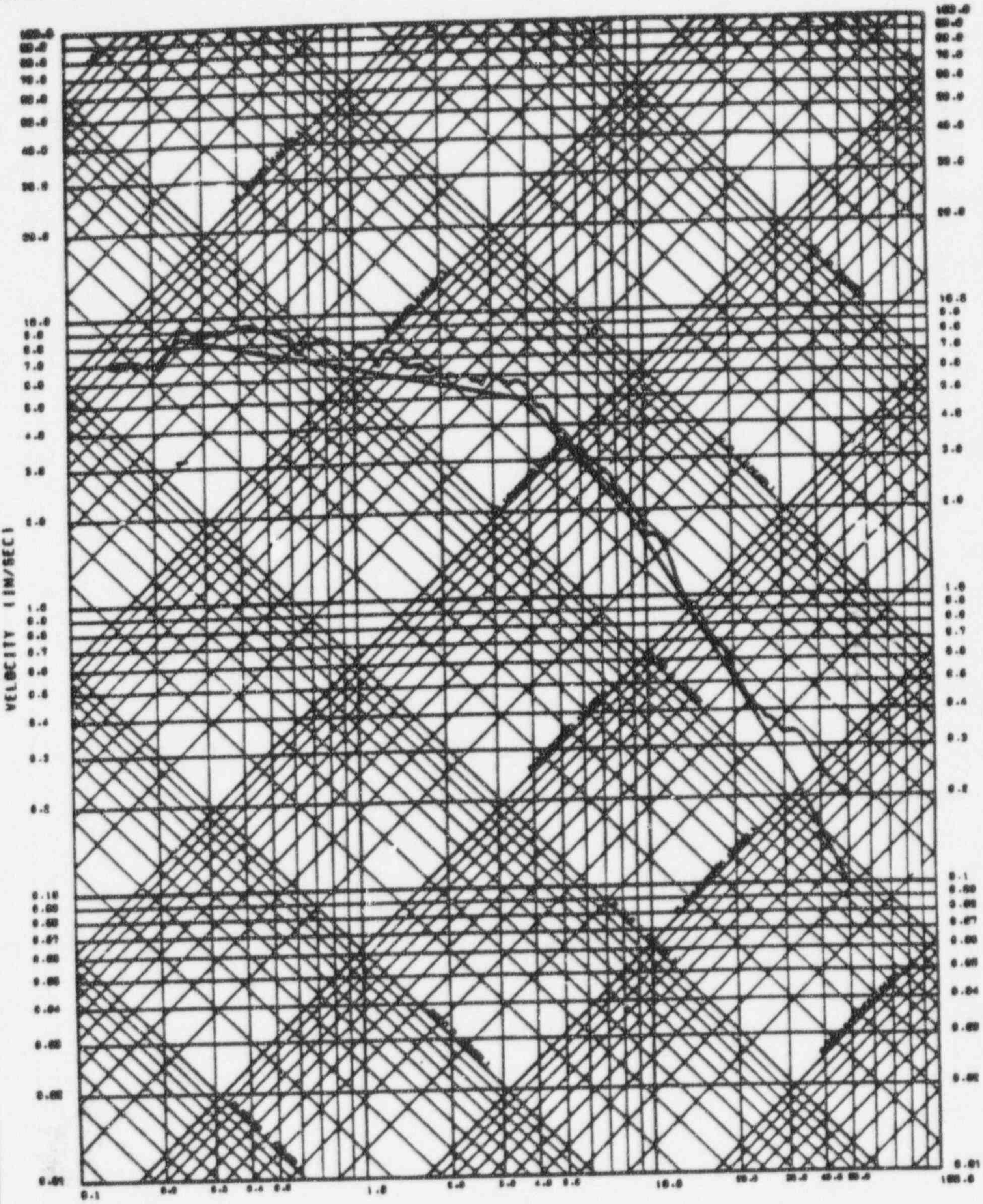
VERTICAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
2 PERCENT DAMPING

FIGURE 2.1-9



VERTICAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
5 PERCENT DAMPING

FIGURE 2.1-10



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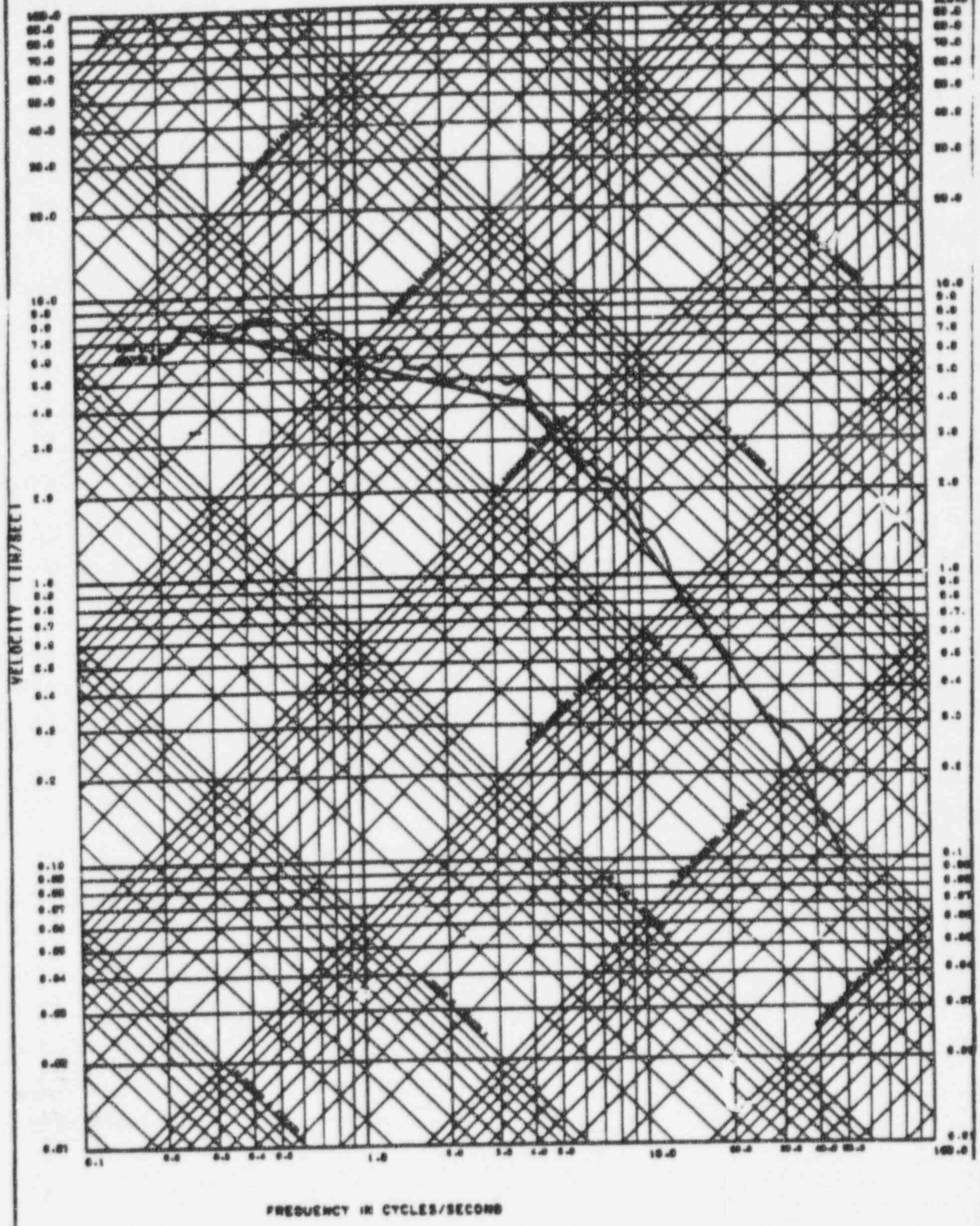
VERTICAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
7 PERCENT DAMPING

FIGURE 2.1-11



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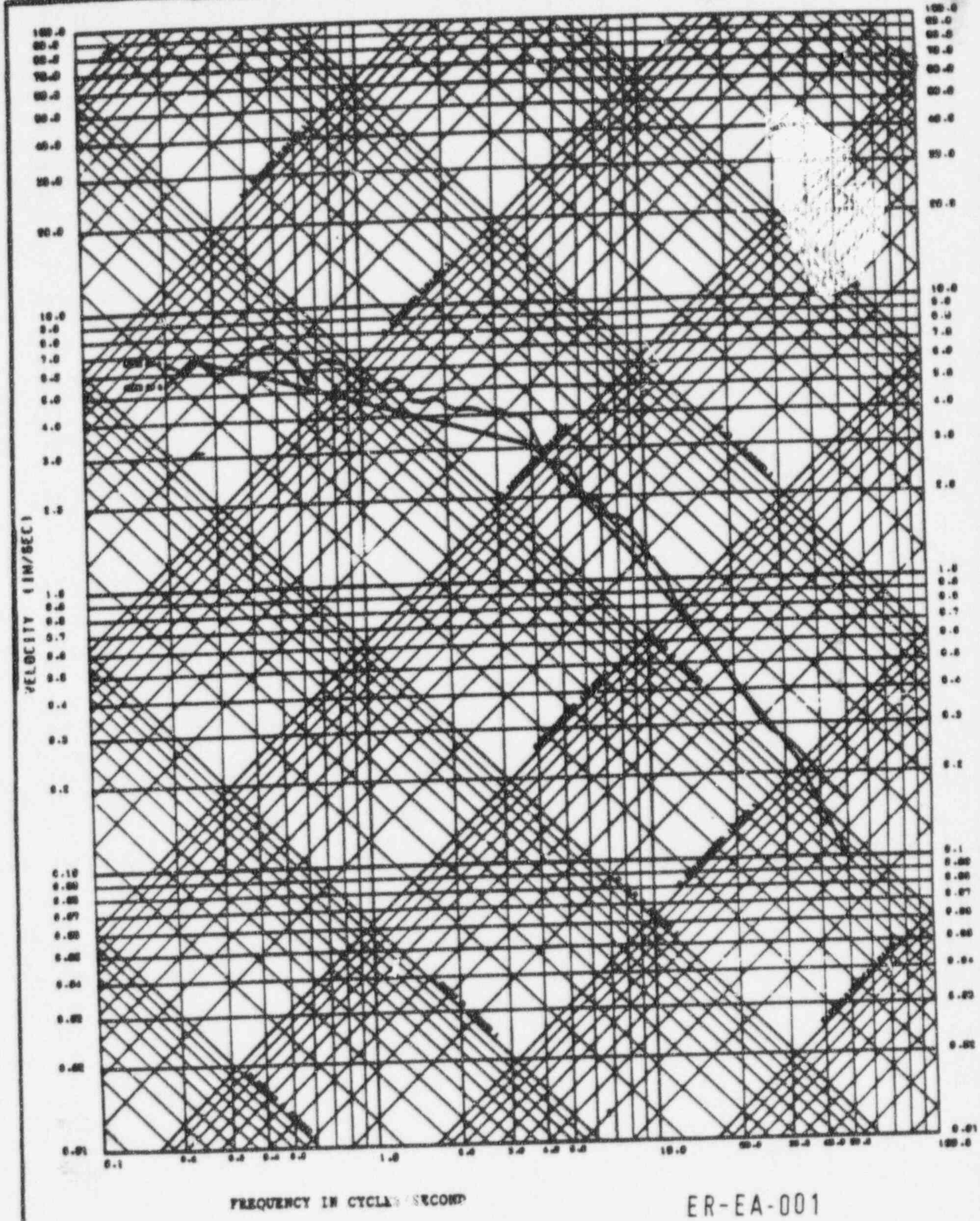
VERTICAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
10 PERCENT DAMPING

FIGURE 2.1-12



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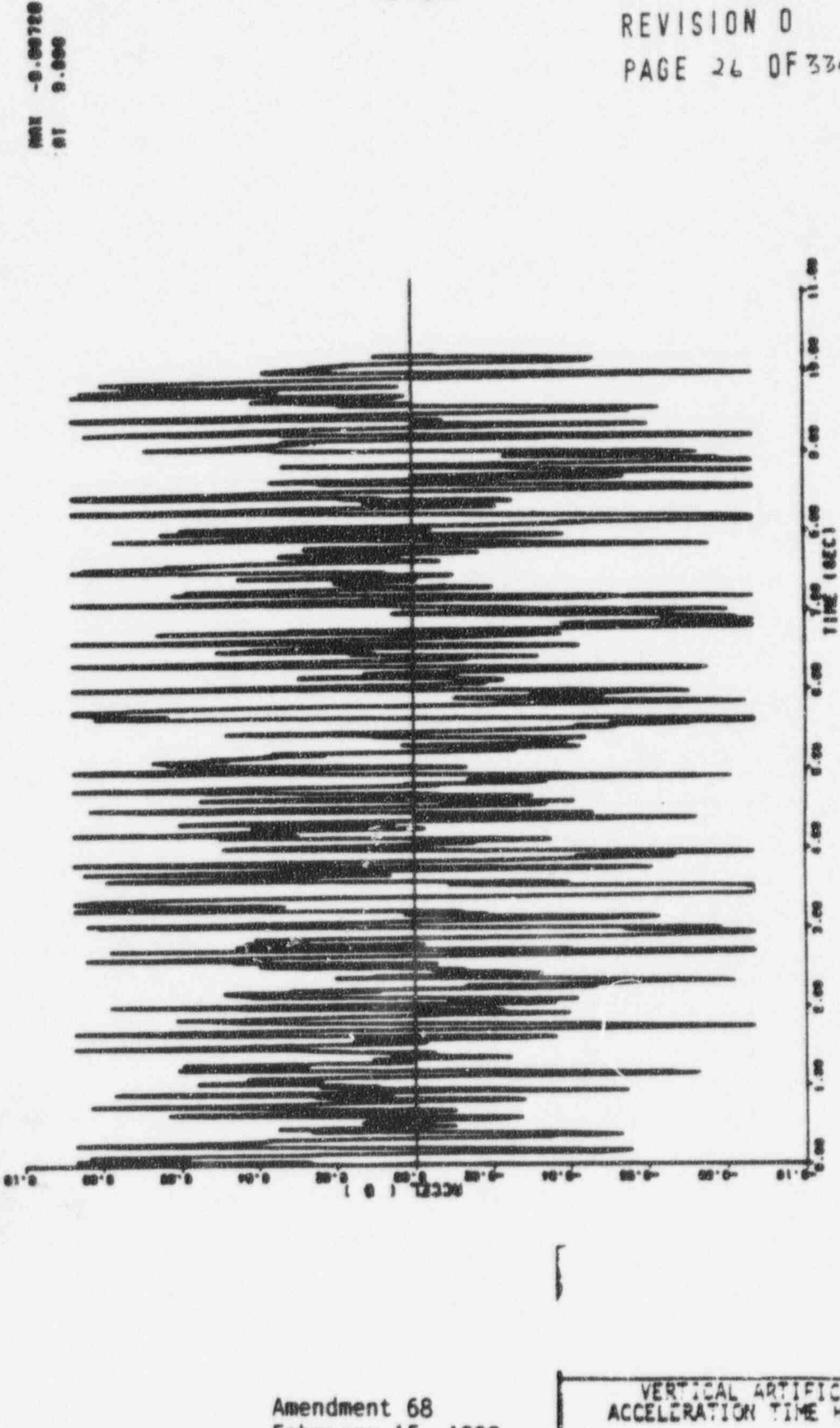
VERTICAL RESPONSE SPECTRA
SAFE SHUTDOWN EARTHQUAKE
15 PERCENT DAMPING

FIGURE 2.1-13



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VERTICAL ARTIFICIAL
ACCELERATION TIME HISTORY

FIGURE— 2.1 - 14

2.2 Structures

This section provides a general description of the essential structures at CPSES including the applicable codes and standards (Ref. 10).

2.2.1 Concrete Containment Structure

The concrete containment structure is a fully steel-lined, reinforced concrete structure designed to the requirements of DBD-CS-073 (Ref. 5). The structure consists of a vertical cylinder supporting a hemispherical dome and is supported on a circular foundation mat with a reactor cavity pit projection. The containment superstructure above the mat is independent of the adjacent interior and exterior structures. Sufficient space is provided between the containment and the adjacent structures to prevent contact between structures under all combinations of loadings.
The principle dimensions of the containment are given below:

- Inside diameter (ID): 135 ft.-0 in.
- Height of cylinder (top of foundation mat to dome spring line): 195 ft.-0 in.
- Inside radius of hemispherical dome: 67 ft.-6 in.
- Thickness of cylindrical walls: 4 ft.-6 in.
- Thickness of dome: 2 ft.-6 in.
- Foundation mat thickness: 12 ft.-0 in.
- Top of foundation mat: 4 ft.-6 in. below grade

The top of the containment mat is at elevation 805.5 ft. except at the reactor cavity pit. The reactor cavity pit is a circular pit with its centerline located 11 ft.-6 in. from the containment centerline. The pit is 24 ft.-4 in. deep by 54 ft.-0 in. in diameter. The wall and base of the reactor cavity pit are 12 ft.-0 in. thick and are designed and detailed to provide structural continuity with the containment mat at elevation 805.5 ft.

The principle reinforcing steel used in the mat, cylinder wall, and dome are No. 18 bars. Continuity of the bars at splices is provided by the use of cadweld mechanical connectors produced by the Erico Corporation.

The reinforcing steel pattern in the cylinder walls consists of vertical bars at each face, horizontal hoop bars at each face, and diagonal bars (oriented at 45 degrees from the horizontal), in each direction, near the outside face.

The foundation mat reinforcement consists of top and bottom layers of bars. The dome reinforcing consists of top and bottom meridional layers of rebars extending from the vertical bars of the cylindrical wall and top and bottom layers of circumferential hoop bars. The meridional reinforcement terminated at the apex of the dome is anchored by cadwelding the end of the rebar to a fabricated steel ring assembly satisfying the requirements of Section CC-3531.1.2 of the ASME ACI 359 document.

At penetration openings, reinforcing steel is generally bent around the openings; supplementary bars are provided around the opening when required by design. At the major penetrations (i.e., the Personnel Lock and the Equipment Hatch) some of the wall reinforcement is terminated at the opening by cadwelding steel plates on the end of the bar. Additional reinforcing is provided around these openings to carry stress concentrations and make redistributions at these openings.

The functional requirements of the containment structure are to:

- Isolate the Reactor Coolant System from postulated environmental conditions including normal wind, tornadoes, and external tornado generated missiles.
- Support the containment liner and penetrations.
- Contain the effects of the full range of postulated accidents, including LOCAs, HELBs, etc.
- Provide biological shielding.

The applicable codes or standards and their titles governing the design are:

ASME Boiler and Pressure Vessel Section III, Division 2 ACI 359 Draft-(ASME-ACI 359) April 1973	Proposed Standard Code for Concrete Reactor Vessels and Containments
ACI 349-76	Code Requirements for Nuclear Safety Related Concrete Structures (only Appendix A)
ACI 318-71	Building Code Requirements for Reinforced Concrete (only Section 11.10.3).
ACI 349-January 1972	Criteria for Reinforced Concrete Nuclear Power Containment Structures, ACI Journal, January 1972, (Section 2.2.1 and Appendix C only).

2.2.2 Reactor Containment Liner and Penetrations

The Reactor Containment Liner consists of a concrete backed steel vertical cylinder capped by a hemispherical steel dome designed to the requirements of DBD-CS-074 (ref. 6). This assemblage stands upon a circular, steel lined concrete mat which forms the bottom closure. The nominal dimensions and thicknesses of the steel liner are as follows:

- Inside cylinder diameter (ID): 135 ft.-0 in.
- Cylinder height: 195 ft.-0 in.
- Cylinder liner thickness: 3/8 in.
- Inside radius of hemispherical dome: 67 ft.-6 in.
- Dome liner thickness: 1/2 in.
- Mat liner diameter: 135 ft.-0 in.
- Mat liner thickness: 1/4 in.

The liners for the cylindrical walls and the dome are anchored to the concrete with 5/8 in. by 6-3/8 in. long, headed, welded studs, Type H4, that are produced by the Nelson Stud Welding Company, or an engineer-approved equal. Studs are spaced to satisfy the design criteria. The spacing of the anchor studs in the cylindrical wall and dome is either a nominal 12 in. each way, or a nominal 12 in. diamond pattern. The wall and dome liner serves as the inside formwork for placing of concrete. The liner on top of the mat is 1/4 in. thick. This bottom liner is installed, after foundation mat construction, by welding at seams to structural members that are embedded in the top of the mat. These embedded structural anchors are 8 to 10 ft. apart. The liner on top of the mat is covered with 30 in. of concrete. The cylindrical wall liner is anchored at the foundation mat; this end anchorage is designed to resist the maximum compression and tension loads to which the liner plate is subjected.

Leak-chase channels are provided at liner seams which, after construction, are inaccessible for other means of leak tightness examination.

The Polar Crane and Containment Access Rotating Platform girder support brackets and major pipe and duct supports attachments are welded to a thickened section of the liner plate. The thickened section of the liner is anchored into the reinforced concrete containment wall. Minor pipe and duct supports, electrical cable trays, conduits, and miscellaneous equipment are attached to the liner with the use of overlay plates and/or structural shapes.

Access to the Containment is provided by a Personnel Airlock, an Emergency Airlock, and an Equipment Hatch. The Personnel Airlock is a 9 ft. diameter double-door assembly. Each door is hinged and double-gasketed, with leakage test taps between the gaskets. The doors are interlocked so that if one door is open, the other cannot be activated. The doors are also furnished with a pressure-equalizing connection with equalizing valves which are hydraulically operated. The Personnel Airlock has provisions to pressure test at pressure Pa the space between the door seal gaskets for each of the airlock doors and the volume between the airlock doors. The doors are designed to maintain their functional capability during testing using only the normal locking procedure. The Emergency Airlock is a 5 ft.-9 in. diameter double-door assembly, with 2 ft.-6 in. diameter doors. Other testing and operating features are similar to those of the Personnel Airlock described previously. The Equipment Hatch is a 16 ft.-0 in. inside diameter single closure penetration. The bolted hatch cover is mounted on the inside of the containment, and double-gasketed with a leakage test tap between the gaskets. The hatch cover is provided with a hoist for handling.

Other smaller penetrations through the containment include the main steam and feedwater lines, hot and cold process piping, instrumentation, the fuel transfer tube, and electrical conductors. All penetration sleeves are welded to the liner and anchored into the reinforced concrete containment wall.

A fuel transfer tube penetration is provided for fuel transfer between the refueling canal in the containment structure and the spent fuel pools in the fuel building. The penetration consists of a 20 in. stainless steel pipe inside a carbon steel sleeve. The inner pipe acts as the transfer tube; the outer tube is welded to the containment liner. Bellows expansion joints are provided between the containment and fuel building that permit differential movements between the buildings.

Header plate type penetrations between the buildings are used for electrical conductors passing through the containment. The penetration header plate is bolted to a weld neck flange which is welded to a steel penetration sleeve. The steel penetration sleeves are welded to the containment liner. The penetration header plate is provided with double O-ring gaskets with leakage test taps between the gaskets. The header plate test taps are used for testing the volume between the gaskets.

The <u>functional requirements</u> of the containment liner and penetrations are:

- The containment liner is designed to provide a vapor barrier that will limit leakage from the containment following a LOCA within the containment.

- Containment Isolation is only required when there is an event inside containment, which if it were not for containment isolation, could result in an uncontrolled release of radiation from the containment. Therefore, postulated pipe breaks outside containment and non-LOCA breaks inside containment, are not required for containment isolation evaluation.

- The containment liner and penetrations are designed, fabricated, erected, and tested to quality standards commensurate with their Nuclear Safety Related functions. The containment liner and penetrations are classified as ANSI Safety

Class 2. The liner is designed in accordance with ASME Section III, Division 2/ACI 359 Draft Code. The penetrations are classified as ASME Class MC and designed in accordance with ASME B&PV Code, Section III, Division 1, Subsection NE. The containment liner and penetrations are subject to the requirements of 10CFR50, Appendix B as discussed in DBD-ME-028.

- The containment penetrations are designed to withstand the effects of natural phenomena without loss of capability to perform their safety function. Refer to DBD-ME-028 (Ref. 11) for Regulatory guide 1.29 requirements for safety related items with respect to earthquakes. The penetration, such as the equipment hatch, is protected from wind and tornado loadings by missile barriers designed in accordance with DBD-CS-081 (Ref. 7). The containment penetrations are designed to minimize the possibility and effect of fires and explosions. Noncombustible and heat resistant materials are used wherever practical.

- The containment liner and penetrations are designed to accommodate the effects of and to be compatible with the environmental conditions associated with normal operation, maintenance, testing, and postulated accidents, including loss-of-coolant accidents. The containment liner and penetrations are also be appropriately protected against the dynamic effects, including the effects of missiles, pipe whipping and discharging fluids, that may result from equipment failures and from events and conditions outside the plant.

- The containment liner and penetrations are designed so that the containment structure and its internal compartments can accommodate, without exceeding the design leakage rate and, with sufficient margin, the calculated pressure and temperature conditions resulting from any loss-of-coolant accident.

- The containment liner material meets the requirements of the proposed Standard Code of Concrete Reactor Vessels and Containment Institute (ACI) - ASME Technical Committee on Concrete Pressure Components for Nuclear Service, which is made up of ACI Committee 59 and ASME B&PV Code, Section III, Division 2, Subgroup on Concrete Components. Pipes penetrating the containment and forming part of the containment pressure boundary meets the requirements of ASME B&PV Code, Section III, Division 1, particularly paragraph NE 1131 and sub-article NE 2300.

- The design limits and loading combinations utilized for the CPSES metal containment system components conform to the requirements of NRC Regulatory Guide 1.57.

- The containment liner and penetrations are designed and constructed to permit periodic integrated leakage-rate tests during plant lifetime, in accordance with reduced pressure-test program requirements of 10CFR50, Appendix J. Leak chase shall be provided at liner seams which, after construction, will be inaccessible for other means of leak tightness examination.

The additional codes or standards and titles for specific components are given below:

ASME B&PV Code Section III, Division 1 Subsection NE 1971, Edition through and including Summer Addenda 1973	Code for Nuclear Power Plant Components (For the electrical penetration sleeve, fuel transfer tube penetration sleeve, emergency and personnel air-lockes, and equipment hatch)
ASME B&PV Code Subsection III, Division 1 Subsection NB and NE 1974 Edition through and including Summer 1976 addenda.	Code for Nuclear Power Plant Components (For Process Piping and Instrumentation Penetrations subject to pressure-induced stresses and unsupported by concrete for load-carrying purposes.
ASME B&PV Code Section II, 1971 Edition through and including 1973 Summer Addenda	Code for Material Specifications, Part A and Part C
AISC 1969 (Seventh Edition)	Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings, February 12, 1969; including Supplement Nos. 1,2, and 3.

2.2.3 Containment Concrete Internal Structures

The containment concrete internal structures are reinforced concrete, designed to the requirements of DBD-CS-083 (Ref. 8), and consist of the following major elements:

Steam Generator Compartments

Four steam generator compartments (SGC) are formed by secondary shield walls, the primary shield wall and refueling cavity walls. The SGC walls extend from the overlay slab up to the operating floor. Each SGC encloses a steam generator and a reactor coolant pump.

Pressurizer Cubicle

The pressurizer cubicle (PC) is located adjacent to the steam generator compartment No. 4 in the northwest quadrant of the containment. The pressurizer cubicle consists of the pressurizer compartment which is referred to as the upper PC, and the pressurizer relief tank compartment, located below the pressurizer compartment, which is referred to as the lower PC.

Primary Shield Wall and Shear Plug

The primary shield wall (PSW) is a concrete cylinder, located approximately at the center of the containment, which extends up from the overlay slab and surrounds the reactor vessel. The reactor vessel supports, which consist of support pads and shoes, are mounted on support members within the concrete primary shield wall.

The shear plug is a circular structure projecting down into the containment mat cavity below the PSW and is eccentric in the N-S direction with respect to the PSW and the containment centerline.

Overlay Slab

The overlay slab rests on top of the containment mat liner at elevation 805 ft.-6 in. The area of the overlay slab contained within the SGCs is 6 ft.-6 in. thick. The area outside the SGCs is generally 2 ft.-6 in. thick.

Refueling Cavity

The refueling cavity, located along the N-S centerline of the containment, extends from elevation 819 ft.-6 in. to 860 ft.-0 in. It is comprised of a main refueling area and a fuel storage area separated by a divider wall. The cavity is lined with stainless steel plate (Ref. 7, Attachment 13).

Operating Floor/Intermediate Slabs

The operating floor, at elevation 905 ft.-9 in., is supported by the SGC walls and concrete columns adjacent to the containment shell. Intermediate slabs are provided at several elevations, including two principle slabs at elevation 832 ft.-6 in. and 860 ft.-0 in., similarly supported as the operating floor slab.

The functional requirements of the Containment Concrete Internals are as follows:

- The concrete internal structure is capable of mitigating consequences of a postulated loss-of-coolant accident (LOCA) by protecting the containment shell and other engineered safety features from the effects induced by the accident such as jet forces and whipping pipes.
- Reinforced concrete walls provide support to the steam generators and resist other loads during normal operation, seismic events, and loads due to a postulated pipe rupture. The SGC support system allows unrestrained thermal expansion of the reactor coolant loops to the final hot operating position.

- The SGC and PC walls function as radiation shield walls surrounding the reactor coolant system, protect the containment liner from the effects of pipe rupture inside the compartments, and provides isolation of the reactor coolant system from the affects of a postulated pipe break in the mainsteam and feedwater systems outside the compartment. The SGC walls also provide support for intermediate floors and the operating floor as well as lateral restraint for the steam generators and reactor coolant pumps. The PC provides lateral restraint and vertical support for the pressurizer.

- The primary shield wall provides biological shielding of and supports the reactor vessel for loads induced during normal operation, seismic events, and postulated pipe ruptures. Each reactor vessel nozzle pad (4 total) bears on a friction shim that allows radial thermal movement of the nozzles with minimal friction effects between the nozzle pads and the shoes. Vertical and horizontal loads are transmitted from each reactor vessel nozzle pad to the box support structure in the PSW by a shoe bolted to the box structure. Loads from the box structure are transmitted to the PSW through embedded steel structures.

- Under seismic loading the shear plug provides shear resistance by acting as a shear key, transferring lateral loads into the containment mat.

- The overlay slab provides lateral restraint at the base of the steam generator compartments and the primary shield wall and acts as a diaphragm for seismic shear distribution at the bottom of the internal structure. The overlay slab also protects the foundation mat liner from missiles generated in the SGC and from the effects of accident temperatures.

- The refueling cavity provides shielded access for transport of spent fuel and new fuel between the reactor vessel and the fuel transfer tube penetration. It also provides shielded storage space for the reactor vessel internals during refueling or maintenance.

- During the refueling operation, the refueling cavity contains borated water. The refueling cavity walls, including the interior wall which separates the main refueling cavity and the fuel storage area, are required to withstand the hydrostatic and seismically induced hydrodynamic loads. When the main refueling cavity is full, the fuel storage area may be empty or full. Conversely, when the fuel storage area is full, the main refueling cavity may be empty or full.

- The operating floor and intermediate slabs provide support for equipment, piping and components. In addition, the operating floor is required to provide laydown space for refueling, maintenance and repair operations.

The applicable codes or standards and titles of each are given below:

ACI 318-71	Building Code Requirements for Reinforced Concrete
ACI 349-76	Code Requirements for Nuclear Safety Related Concrete Structures
ASME-ACI 359	ASME-ACI 359 document, Proposed Standard Code April 1973 for Concrete Reactor Vessels and Containments, ASME Boiler and Pressure Vessel Code, Section III, Division 2, issued for interim trial use and comment, April 1973.
ACI 349-72	ACI Committee 349, Criteria for Reinforced Concrete Nuclear Power Containment Structures, ACI Journal 1972.

2.2.4 Other Seismic Category I Structures

Fuel Building

The Fuel Building is a reinforced concrete structure whose principal function is to house the new fuel storage area and the two spent fuel storage pools. Spent fuel bundles are stored in racks located in the spent fuel pools which are filled with borated water. The spent fuel pools have thick concrete floors and walls and are lined with stainless steel plates for leak tightness.

The Fuel Building is located between the Unit 1 and 2 containment structures. Its plan dimensions are approximately 143 ft.-6 in. by 137 ft.-9 in. The bottom of the mat elevation varies with the lowest point at elevation 780 ft.-6 in. Grade at the Fuel Building is at elevation 810 ft.-0 in. The top of the roof is at elevation 918 ft.-3 in.

The Service Water Pipe Tunnel runs under and forms part of the Fuel Building. The tunnel is located from elevation 785 ft.-6 in. to elevation 805 ft.-4 in.

The Fuel Building has an overhead electric crane capable of handling the fuel shipping cask. The crane is located such that it does not pass over either of the spent fuel pools. In addition, interlocks are provided to prevent movement of the shipping cask over the new fuel storage area. A fuel handling crane is mounted on the operating floor to transport new and spent fuel assemblies.

Safeguards Building

The Safeguards Building is a multistory, reinforced concrete structure. There are two stories below grade and four stories above grade. Its plan dimensions are approximately 62 ft.-6 in. by 98 ft. including the Diesel Generator Area. The bottom of mat elevation varies with elevation 767 ft.-4 in. being the lowest. It is embedded approximately 42 ft.-8 in. below grade.

Floor systems, columns, interior walls, and exterior walls are reinforced concrete, designed to support all dead, live, equipment, and transient loads. The structure is designed as a shear wall building for seismic loads. Adequate space is provided between it and adjacent structures to allow for differential seismic movements.

The Safeguards Building for each unit houses the safety injection pumps, RHR pumps and coolers, and containment spray pumps and coolers, auxiliary feedwater pumps, diesel generators, electrical switchgear, motor control centers, and the control rod drives.

The Safeguards Building is designed as a Seismic Category I structure per DBD-CS-084 (Ref. 9) and is designed to resist the effects of the design basis tornado.

Auxiliary Building

The Auxiliary Building is a multistory reinforced concrete structure, located between the Unit 1 and Unit 2 containments. The building is common to Units 1 and 2.

The building is divided into two parts. The auxiliary portion is founded at elevation 785 ft.-6 in. and is approximately 120 ft. by 192 ft. in plan. The electric portion is founded at elevation 773 ft.-0 in. and is approximately 118 ft. by 165 ft. The two portions are interconnected and are analyzed and designed as one structure. The building is separated from other buildings by spaces to avoid contact with other structures during a seismic event.

The Auxiliary Building houses the control room, battery room, ventilating equipment, waste treatment equipment, and other fluid auxiliary systems.

The Auxiliary Building is a Seismic Category I structure and is designed to resist the effects of the design basis tornado, per DBD-CS-084 (Ref. 9).

Seismic Category I Tanks and Pipe Tunnels

Seismic Category I tanks consist of the Refueling Water Storage, Condensate Storage and Reactor Makeup Water Storage Tanks. These tanks are located south of Unit No. 1 and north of Unit No. 2, adjacent to the Diesel Generator Building of each unit. All tanks are Seismic Category I reinforced concrete structures. The Refueling Water Storage and Condensate Storage Tanks are 45 ft.-0 in. in diameter and 47 ft.-9 in. high, while the Reactor Makeup Water Storage Tanks are 25 ft.-0 in. in diameter and 33 ft.-9 in. high. All tanks are founded on rock.

All Seismic Category I tanks contain fluid feeding the safety-related piping systems such as auxiliary feedwater system and safety injection system. These tanks are circular in shape, with stainless steel liners to provide leak tightness. For the Refueling Water

Storage Tank, the liner also prevents absorption of radioactive material by the concrete structure. Seismic Category I tanks are also designed to resist the effects of the design basis tornado.

Pipe Tunnels are Seismic Category I reinforced concrete structures located adjacent to the Seismic Category I tanks; they house safety-related piping systems associated with the Seismic Category I tanks.

The Seismic Category I pipe tunnel structures protect safety-related piping systems against damage from environmental effects, including the effects of the design basis tornado. The design requirements are provided in DBD-CS-084 (Ref. 9).

Service Water Intake Structure

The Service Water Intake Structure is a Seismic Category I reinforced concrete building located at the Safe Shutdown Impoundment (SSI), which is on the southeast side of Unit No. 1. The structure's plan dimensions are approximately 107' by 75'. The foundation mat rests on rock. The mat, walls, beams, and floors are constructed of reinforced concrete.

The Seismic Category I Service Water Intake Structure houses the service water pumps and fire pumps, and is equipped with trash racks, traveling screens, stop gates, and screen wash pumps. The safety-related service water traveling screens provide long-term protection from accumulation of debris and short-term protection against floating debris. This structure draws water from the Safe Shutdown Impoundment (SSI) and supplies all safety-related cooling systems. The Service Water Intake Structure is designed per DBD-CS-084 (Ref.9), including the effects of the design basis tornado.

The applicable codes and standards and their respective titles for the other Seismic Category I structures are given below:

ACI 318-71	Building Code Requirements for Reinforced Concrete
ACI 349-76	Code Requirements for Nuclear Safety Related Structures. (Only the provisions of Appendix A, Thermal Gradients, is implemented.)

2.3 Subsystems and Their Supports

This section provides a general description of the design basis and analytical methods employed for electrical raceway systems, HVAC ducting systems, and piping systems at Comanche Peak.

The seismic ruggedness of these subsystems is generally recognized in the industry and therefore, EPRI NP-6041 requires that only walkdowns be performed for plants with a review level earthquake less than 0.8g spectral. NP-6041 identifies specific attributes for the walkdown of each system type. These attributes are those that were extensively reviewed by TU Electric as part of its CAP for CPSES. The subsystems and related programs are discussed in detail in the sections that follow. For each subsystem discussed below the following is included:

- a discussion of the physical attributes of the subsystem
- a discussion of the design basis
- a discussion of the tests, inspections and walkdowns that were conducted

Subsystem walkdowns were included as a part of the area walkdowns as discussed in Section 5.6.2 of Appendix B.

2.3.1 Cable Trays and Cable Tray Hangers

Cable trays are fabricated from cold-formed steel and consist of two side rails (channels usually 4 or 6 inches deep) with either sheet metal or a series of rungs between the side rails. The sheet metal or rungs are welded to the bottom flanges of the side rails. Cable trays with a sheet metal bottom are referred to as solid bottom (trof or trough) trays while those with rungs are referred to as ladder type trays.

The height of the side rails and the width of the tray define the tray size (i.e., 4 x 24 inches). The tray depth can be increased by attaching tray side rail extensions.

Tray covers, which are sheet metal segments mechanically attached to the side rails, can also be present on the tray. Tray segments are connected by tray splices, and trays are attached to the cable tray hanger by tray clamps.

Thermolag/Thermoblanket fire proofing materials are selectively used to protect cable tray systems at required locations.

The cable tray hanger assembly is fabricated from standard structural steel sections. For hangers connected to the ceiling or floor, the vertical member is referred to as a post and the horizontal member is referred to as a tier. Posts and tiers are usually structural channel sections and bracing members are usually structural angle sections. The majority of the connections on the cable tray hangers are welded connections meeting the requirements of American Welding Society. Connections may also be bolted.

Cable tray hanger anchorages usually consist of base plate or base angles attached to the concrete structure with Hilti expansion bolts or Richmond Inserts. Cable tray hangers can also be attached to embedded plates.

The cable tray systems are designed for deadweight load and seismic loads per the requirements of DBD-CS-082 (Ref. 12) and technical procedure ECS 5101 (Ref. 13), both written for cable tray and cable tray hangers. The seismic load is the Operating Basis Earthquake or the Safe Shutdown Earthquake as defined by the response spectra curves in specification CPES-S-1032G (Ref. 4). Operating thermal loads and accident thermal loads have both been considered and found to be negligible as discussed in Technical Procedure ECS 5101 (Ref. 13). Cable trays and cable tray hangers are seismically designed by either a static analysis method, an equivalent static method, or the response spectra method, using manual or computerized calculations or a combination of both.

After establishing the design criteria and the development of procedures consistent with licensing commitments during CAP, extensive as-built inspections provided the necessary data to determine the cable tray layout and cable tray hanger configuration. This data was incorporated into as-built drawings, which provided input to the analyses of the cable tray systems. These drawings provided information relative to the routing, location, identification, type, number and size of cable trays. Hanger geometry was also obtained and included member sizes, dimensions, anchor bolt information, weld joints, clamp type, and orientation of the hanger relative to the tray.

Technical issues identified during CAP for cable tray systems pertained to anchor bolt design, embedded plate design, hanger member sizes, tray clamp allowables, weld design, and analytical modelling. All technical issues were resolved. Over 7000 cable tray hanger analyses were validated to comply with the design criteria. Approximately 10% of the hangers required modifications correcting member overstresses, weld overstresses, member slenderness ratio exceedances, clamp capacity exceedances, and anchor bolt capacity exceedances.

The most commonly used tray clamps at CPSES have been tested and represent the lower bound strength for either the transverse or longitudinal clamps. Table 6.3 of ECS 5101 (Ref. 13) shows the lower bound equivalent strength for every type of clamp used at CPSES.

Clamp allowables are obtained from tests (monotonic and cylic) that were done on selected sets of clamps representative of the types used at CPSES using recommended safety factors per the ASME Boiler and Pressure Vessel Code, Section III, "Load Rating" procedure, Subsection NF Article NF 3280. The test results are contained in Impell Calculation M-51, "Clamp Allowables from Test Data" and Ebasco Calculation Volume I, Book No. 21, entitled "CTH Clamps Qualification Methodology Development".

Other tests were conducted on trays, fittings, splice plates, and welds to address specific issues raised during CAP. All of these reports are cited in Technical Procedure ECS 5101 (Ref. 13).

2.3.2 Conduits and Conduit Systems

Train A and B conduit systems contain safety-related electrical cable that are required to remain functional under all normal operating conditions as well as anticipated abnormal operating conditions in accordance with the requirements of DBD-CS-090 (Ref. 15).

The conduits vary in diameter from 3/4" to 5" and are supported at regular intervals by seismic supports. The interval between the supports, which is known as a span, is generally maintained within prescribed maximum and minimum distances, depending upon the conduit size and geometric configuration and the types of supports used at either end of the span.

The conduits are installed by coupling together individual segments which are fabricated with steel having a minimum yield strength of 25 ksi. The coupling is accomplished via threaded couplers which can be any of the following depending on the specific conduit configuration and points of cable pulling: (a) conduit unions, (b) conduit split couplings, (c) straight couplings with or without windows and covers which are called BCs, (d) heavy couplings normally employed in 90° turns with or without windows called LBDs, (e) pull boxes or pull sleeve for cable pulling, (f) straight threaded couplings, and (g) flexible conduit to rigid conduit couplings.

Conduit runs, composed of the coupled segments, begin and terminate at end points which can be air drops of cable to and from cable trays or flexible conduit segments connected to equipment, or supported junction boxes. The prescribed limits of the distances between seismic supports of conduits are specified in the LS series drawings of the S-0910 document.

Conduits are attached to the conduit supports by means of clamps (the sole exception being the Unit 1 seismic restraints which employ aircraft cable for C Train conduit greater than two inches). The permissible clamp attachments are detailed in the CSD series drawings of the S-0910 and S2-0910 documents.

Junction boxes are enclosures that provide a degree of protection against incidental contact with the enclosed cables and/or equipment and provide a degree of protection for the enclosed cables and/or equipment against specified environmental conditions.

The following two types of enclosures are used:

- NEMA Type 12 junction boxes, intended for indoor use, primarily to provide a degree of protection against dust, falling dirt and dripping noncorrosive liquids.

- NEMA Type 4 junction boxes, intended for indoor or outdoor use primarily to provide a degree of protection against windblown dust and rain, splashing water and hose-directed water.

Design methods used for conduit systems (conduits, junction boxes and their supports) are the response spectrum method and the equivalent static method of analysis and design. Either approach requires a definition of the seismic inputs and an evaluation of system frequency. These design methods and load combinations follow the requirements described in DBD-CS-090 (Ref. 15).

During CAP walkdown procedures known as Field Verification Methods (FVMs) were developed identifying inspection attributes pertaining to conduit identification, conduit routing, location of supports, conduit size, support identification, flexible conduit size and length, and junction box characteristics that were documented on conduit drawings. Detailed as-built support drawings were then made identifying support attributes such as member dimensions and thickness, orientation, anchorage details, clamp types, and base plate dimensions. This information was then used to validate the design to ensure that the as-installed conduit and conduit supports complied with the design criteria or identified modifications to bring the hardware into compliance with the design.

Some of the technical issues identified during CAP pertained to the governing load case for design, dynamic amplification factors, bolt hole tolerance and edge distance violations, support self weight, anchorage, and longitudinal loa [illegible] sverse supports. All of there technical issues were resolved. The corrective act [illegible] re implemented by the design control procedures and installation specifications with the validation documented in drawings, calculations, and specifications.

The conduit clamp capacities were verified by comparing the calculated clamp load to the allowable load in the transverse, vertical, and longitudinal directions. The clamp allowables for both the OBE and SSE load conditions were based on test results found in Reports A-699-85 and A-702-86 entitled "Conduit Clamp Test Reports, Phase I and Phase II", respectively.

2.3.3 HVAC Duct and Duct Supports

The CPSES HVAC Systems are air distribution systems consisting of cold-formed sheet steel ducting conforming to the requirements of either ASTM A525, ASTM A526, or ASTM A527. The supports are constructed from structural steel shapes and follow the general requirements of the 1974 edition of the AISC Manual of Steel Construction and the specific requirements of specification 2323-MS-85 (Ref. 16). The majority of the ducting is rectangular in cross section, but circular cross section duct has also been used in limited cases. The HVAC ducts are designed in accordance with the applicable provisions of ERDA 76-21 and the SMACNA Duct Construction Standards.

The rectangular and circular ducts runs are constructed from a number of short duct sections, which are bolted together using gasketed, flanged joints. The flanges are fabricated at the duct section ends by attaching a rolled or fabricated angle to the duct (companion angle flange) or by bending the duct (hemmed or bent flange). The ducts rest on the supports and are restrained in the transverse direction by the support members with the use of shims, as required, and in the longitudinal direction by bolted or welded connections to approximately every fourth or fifth support. The duct supports are spaced approximately every eight feet and are constructed of structural steel shapes which are welded together. The supports are typically attached to the building structures by clip angles using one or more concrete expansion anchors (Hilti), screw anchors, anchor bolts, or by welding to embedded plates.

The HVAC duct and supports which are within the boundaries of HVAC systems, or portions of HVAC systems, are vital support systems for equipment (and personnel) required to remain functional and after the SSE, have been designated as Seismic Category I and are designed to Seismic Category I criteria. DBD-CS-086 (Ref. 17) provides the design basis and technical descriptive information for the HVAC duct and duct supports at CPSES. This document addresses the design of both Seismic Category I and Seismic Category II HVAC duct and supports. The DBD addresses CPSES FSAR Commitments, required system interfaces, and the requirements of applicable codes and regulatory authority. The DBD along with the applicable installation specifications assures that the installation is in accordance with the design requirements.

The static analysis, equivalent static method, and the response spectrum method were three general analytical methods used in the design of Seismic Category I duct and duct supports as described in DBD-CS-086 (Ref. 17). Duct weights reflecting actual in-line equipment and duct configuration were used. The weight of any insulation, fire protection, or acoustical material was also included. The loads and load combinations follow the requirements in DBD-CS-086 (Ref. 17). The ducts, duct supports, and their anchorages are considered acceptable when the structural member and connection stresses and the anchorage reactions are within the allowable stress limits and allowable anchorage capacities based on DBD-CS-086 (Ref. 17) and DBD-CS-015 (Ref. 32), respectively.

Numerous walkdowns collecting as-built data for duct systems during the CAP effort were used in the design validation effort and are documented in procedure CPE-EB-FVM-CS-029 and CPE-EB-FVM-CS-086. These walkdowns provide the input to the analysis. Individual drawings were created for each "as-built" support showing pertinent details. Duct work drawings were inspected by QC and verified for accuracy. These walkdowns and as-built drawings ensure that the design meets the "as-built" condition.

A few of the technical issues identified during CAP pertained to inaccurate HVAC duct support detail drawings and their effect on the duct support designs, inadequate program for installation and Quality Control verification of the duct supports, inadequate thread engagement of Richmond Inserts, inadequate seismic design for duct supports, insufficient axial restraints for the duct, and inadequate inspection documentation for the weld fit-up for grove welds. All of the technical issues identified were then resolved through enhancements to the design criteria and specifications, developing procedures, and producing tests. Calculations were then developed, augmented, and revised to incorporate this design information.

Specific duct tests were done by Corporate Consulting and Development Co., LTD (CCL) Reports A413-81 and A749-87 with evaluations documented in CCL Report A414-81 and in calculations Volume 1 Book 15 and Volume 1 Book 18. These tests and ensuing evaluations formed the basis for modeling the duct properties. These series of modal tests indicated that the rectangular duct can be modelled by considering all the duct beam action to be carried by the corners of the duct. The effective corner length was empirically determined to be 40t, where t is the thickness the duct sheet metal. Similar properties were developed for circular duct. Duct properties are found in procedure, SAG.CP24, entitled "General Instructions for Seismic Category I HVAC Duct and Duct Support Analysis" (Ref. 18).

2.3.4 Piping and Pipe Supports

The function of the piping systems at CPSES is to contain and transport fluids as necessary and maintain the operation of the plant. This includes the piping systems necessary to support power generation and those required to mitigate the consequences of postulated abnormal events. The specific functions of these piping systems are described in the system DBDs and in the applicable sections of the FSAR.

CPSES has certain nuclear power systems which are classified in accordance with ANSI 18.2 corresponding ASME Code requirements. The classifications are noted below:

Code (Safety) Class 1	Piping constructed in accordance with the rules of Subsection NB, ASME III
Code (Safety) Class 2	Piping constructed in accordance with the rules of Subsection NC, ASME III
Code (Safety) Class 3	Piping constructed in accordance with the rules of Subsection ND, ASME III
Class 5	Piping constructed in accordance with the rules of ANSI B31.1 and located in Seismic Category I structures.
Class G	Piping constructed in accordance with the rules of ANSI B31.1.

Pipe categories, defined in specifications 2323-MS-43B and 2323-MS-44B, indicate the maximum design temperature and pressure for which the pipe category may be used. For each piping systems, or portion thereof, a pipe category is selected which provides material appropriate for the service conditions.

Piping materials are in accordance with the pipe categories and are noted as such on the flow diagrams and in the Pipeline Designations List.

ASME and ASTM material specifications may be used interchangeably for either ASME III or ANSI B31.1 piping, provided the ASME specification is designated as being identified with the ASTM specification for the grade, class, or type produced. When ASTM material is used for ASME III piping, the material will be confirmed as complying with the ASTM specification by a Certified Material Test Report or Certification from the materials manufacturer, as required by NB-2130. The ASME III materials should be manufactured in accordance with the 1974 Edition through Summer 1974 Addenda of the Code, unless later editions are reviewed, reconciled, and accepted as noted in specification 2323-MS-100 and 200 (Ref. 19 and Ref. 20, respectively).

The pipe supports provide the means of supporting the piping system and cover a variety of supports such as integral and nonintegral pipe attachments, variable and constant spring hangers, sliding supports, rod hangers, struts, shock suppressors, anchors, and pipe support frames.

Pipe supports are typically designed by one of two methods. They are designed by static calculations methods (manual or computerized calculations) or they are selected on a load rating basis.

Pipe supports are classified on the basis of the piping code classes they support (nuclear or non-nuclear piping) and piping size (large bore or small bore). Within these classifications there are three types of pipe supports: component standard supports; linear supports; and plate and shell supports as defined in Subsection NF-1200 of the ASME III Code.

Seismic Category I nuclear safety related pipe supports are designed as either Class 1 pipe supports for ASME III Code Class 1 Piping, Class 2 pipe supports for ASME III Code Class 2 piping, or Class 3 pipe supports for ASME III Code Class 3 piping.

The Seismic Category I piping and pipe support designs follow the requirements in DBD-CS-018, DBD-CS-065, and DBD-CS-070 (Ref. 21, 22, 23, respectively).

The Corrective Action Program included both large and small bore piping and pipe supports. The evaluations of piping system were thorough to insure compliance with the design. Technical issues were identified and resolved pertaining to local stresses in piping and pipe support generic stiffness, support mass and others noted in the Project

Status Reports for "Small Bore Piping and Pipe Supports" and "Large Bore Piping and Pipe Supports" (Ref. 24 and 25, respectively).

In particular, two separate walkdowns of samples of Unit 1 and Common as-built piping systems were conducted to verify and refine the design methodology used in the design validation process. These walkdowns were done after the 79-14 walkdowns had been previously done.

The first walkdown was done according to newly developed procedures to determine whether the existing design documentation was adequate to initiate the pipe stress analyses. As a result of this walkdown, the existing design documentation was determined adequate to initiate the pipe stress analyses.

The second walkdown was done to another procedure and determined whether there were any additional technical issues related to the functional behavior of the piping system that should be evaluated and whether any additional design inputs, guidelines, or procedures were required to complete the small and large bore piping and pipe support validation effort. This second walkdown provided assurance that no additional technical issues existed and that the procedures developed, with refinements incorporated, were satisfactory to perform the validation of large and small bore piping and pipe supports.

2.4 Mechanical Equipment

All safety-related mechanical equipment which is required to retain structural integrity or structural integrity and operability during and after a postulated earthquake is subject to seismic qualification.

All NSSS Class 1 components and supports are designed and analyzed for the design, normal, upset, and emergency conditions to the rules and requirements of the ASME Code, Section III.

Active pumps and valves which must perform a mechanical motion during the course of accomplishing a system safety function include the active ASME Boiler and Pressure Vessel (B&PV) Code Class 2 and Class 3 pumps, Code Class 1, Class 2, and Class 3 valves, and their respective drives, operators, and vital auxiliary equipment. This equipment is qualified by testing, or analysis, or both, in accordance with the criteria given in DBD-ME-029 (Ref. 26), the recommendations of NRC Regulatory Guide 1.48, and as described in the following paragraphs.

Analysis without testing is accepted if it can be conservatively demonstrated that structural integrity alone can ensure operability of the seismic Category I equipment. When a complete seismic test is impracticable, combinations of testing and analysis are performed.

Seismic qualification by analysis is applicable to mechanical equipment which has relatively simple configurations and which can be modeled accurately. When analytical modeling is used, the equipment is modeled as a network of lumped masses and elastic springs in discrete parts. The response spectrum method is applied to calculate stresses and deformations resulting from the base excitations characterized by the required OBE and SSE in-structure floor response spectra of the seismic Category I buildings, and for the seismic analysis and testing of all seismic Category I subsystems and equipment located in the seismic Category I buildings. The calculated seismic stresses are combined with the design load and thermal stresses for the various plant conditions defined in the ASME B&PV Code, Section III and DBD-ME-029 (Ref. 26). It is ascertained that for each condition the resulting stresses are within the limits specified by the code and the recommendations of NRC Regulatory Guide 1.48 and DBD-ME-029 (Ref. 26).

When structural integrity alone cannot ensure operability for mechanically or structurally complex equipment not amenable to modeling and dynamic analysis, structural integrity and operability during and after a postulated earthquake are ensured by testing. This method consists of mounting the equipment to be qualified on a shake table, which is vibrated in such a way as to equal or exceed the required OBE and SSE in-structure floor response spectra applicable at the equipment locations in the seismic Category I buildings. A minimum of five OBE tests and one SSE test are performed. Equipment is tested in its operational condition; and, when possible, during the tests, operating, thermal and seismic loads are applied simultaneously. Operability is verified both during and after the tests.

Multi-directional seismic loading effects and dynamic coupling of the equipment are considered through the use of multi-axis testing techniques as recommended by IEEE 344-1975, IEEE Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations. When dynamic analysis is used for seismic qualification, the dynamic coupling effect is considered by modeling the equipment with masses with a sufficient number of degrees of freedom and elastic properties representing the multi-directional stiffness of its various interconnecting parts. Multi-directional seismic loading is accomplished by performing the response spectrum analysis for each of the three orthogonal directions of earthquake excitation and combining the results by the square root of the sum of the squares (SRSS) technique. A detailed description of seismic analysis and testing procedures is given in DBD-ME-029 (Ref. 26).

A general classification of safety-related mechanical equipment and applicable quality standards is given in Table 2-1 of the FSAR. Fluid system components and the applicable codes are classified in Table 17A-1 of the FSAR and in their respective mechanical system DBDs.

All supports of seismic Category I mechanical equipment are seismically qualified to ensure their structural capability to withstand seismic excitation. The seismic qualification is accomplished by analysis, testing, or a combination of both for a particular support or a support representative of a group of supports.

If supports are similar and justified as such or if the worst case support determined by consideration of dynamic response (stiffness, structural strength, supported load) is chosen from a group of supports to be qualified and justified as such, only one of the similar supports or the worst case support requires a complete dynamic seismic analysis or a full-scale test, or a combination of both.

Justification of this procedure is based upon a simplified comparison analysis or by past experience indicating that the supports to be qualified are similar or that the worst case has been chosen. Upon such justification and dynamic analysis, or full scale testing, or a combination of both the similar or worst case support, the group of supports being investigated is accepted as seismically qualified.

The criteria governing the analysis or testing methods for seismic qualification of equipment supports are presented in DBD-ME-029 (Ref. 29).

The seismic qualification documentation for the safety related mechanical equipment includes the original vendor documentation augmented by walkdowns, calculations, and other reports conducted during CAP as part of the hardware and design validation efforts to ensure that validated design meets the licensing commitments and resolves any specific issues (Ref. 27).

2.5 Electrical and Instrumentation Equipment

Seismic Category I Balance of Plant (BOP) instrumentation and electrical equipment are seismically qualified in accordance with the procedure and documentation requirements specified in IEEE 344-1975, "Recommended Practices for Seismic Qualification of Class 1E Equipment for Nuclear Power Generating Stations" (Ref. 28, 29). However, certain equipment purchased from the NSSS Supplier, Westinghouse, that was listed from 1969 to mid 1974, was tested in accordance with IEEE 344-1971 employing single axis sine beat inputs. Supplemental retesting was performed at the request of the NRC Staff for selected items of equipment employing multi-frequency, multi-axis test inputs to demonstrate the conservatism of the original sino-beat test methods with respect to the modified methods of testing for complex equipment recommended by IEEE-1975.

The original single axis beat testing and the additional retesting completed under the Supplemental Test Program had been the subject of generic review by the NRC. For equipment which had been previously qualified by the single axis sine beat method and included in the first NRC seismic audit and, where required by the NRC, the Supplemental Qualification Program determined that no additional qualification testing was required to demonstrate acceptability to IEEE 344-1975 provided that:

- The Westinghouse aging evaluation program for aging effects on complex electronic equipment located outside containment demonstrated there were no deleterious aging phenomena. In the event that the aging evaluation program identified materials that were marginal, either the materials were replaced or the projected qualified life was adjusted.

- Any changes made to the equipment caused by the above or caused by design modifications do not significantly affect the seismic characteristics of the equipment.

- The previously employed test inputs were shown to be conservative with respect to applicable plant specific response spectra.

For equipment tests after July 1974 (i.e. new designs, equipment not previously qualified or previously qualified that does not meet the statements above) seismic qualification by test is performed in accordance with IEEE 344-1975. Where testing was utilized, multi-frequency multi-axis inputs were developed by general procedures. The test results contained in the individual Equipment Qualification Data Packages (EQDPs) demonstrated that the measured Test Response Spectrum (TRS) envelope the applicable required Response Spectrum (RRS) defined for generic testing. Qualification for plant specific use was established by verification that the generic RRS specified by Westinghouse enveloped the applicable plant specific response spectrum. Alternative test methods, such as single frequency, single axis inputs, were used in selected cases as permitted by IEEE 344-1975 and Regulatory Guide 1.100.

All seismic Category I instrumentation and electrical equipment are qualified by analysis or testing, or both. Seismic analysis without testing is used if it is demonstrated that the performance of the equipment subjected to earthquake motion can be conservatively predicted and if the functional operability of the instrumentation or equipment is assured by its structural integrity alone. The seismic analysis methods (response spectrum, time history) and the testing procedures used are described in DBD-ME-029 (Ref. 26).

Where analysis is used for qualifying the Seismic Category I instrumentation and electrical equipment, it is required that the maximum stresses and deformations in the equipment including the effects of the normal operating loads plus the SSE be limited to prevent loss of function of the equipment. To ensure structural integrity and functional operability of the equipment after several occurrences of the OBE, it is required that the maximum stresses in the equipment, including the effects of the normal operating loads plus the OBE, be maintained within the normal allowable material working stress limits set forth in the appropriate design standards and codes, and that the equipment operate and maintain structural integrity without permanent deformation.

When testing is used for the seismic qualification of Seismic Category I instrumentation and electrical equipment, tests at the SSE level are performed to qualify the equipment for operation or structural integrity, or both, during and after the SSE. Each test at the SSE level is preceded by a minimum of five tests at the OBE level to verify the structural and functional integrity of the equipment after several occurrences of the OBE.

Supports of instrumentation and electrical equipment such as battery racks, instrument racks, control consoles, cabinets, and panels are analyzed or tested, or both, by their suppliers in accordance with the methods and procedures described in DBD-ME-029 (Ref. 26) and specification 2323-SS-20 (Ref. 40).

Such supports are generally required to have overall natural frequencies greater than 33 Hz. Where this requirement cannot be met, the requirements are to qualify the equipment by performing full dynamic analysis or testing, or both, to demonstrate their structural integrity during and after the SSE, and to generate response spectra or derive maximum amplification factors at all equipment and instrument mounting locations. The equipment and instruments to be mounted on these supports are then analyzed or tested on the basis of the response spectra or maximum accelerations furnished.

The supplier accounts for any possible amplification through his own furnished equipment supports by analysis or testing, as described in DBD-ME-029 (Ref. 26). Verification is by documentation based on either actual tests or analytical methods.

Documentation pertaining to the seismic qualification of all seismic Category I electrical equipment, instrumentation, and supports is reviewed for compliance with the requirements set forth in DBD-ME-029 (Ref. 26), NRC regulatory guides, and applicable codes and standards.

The design validation process for equipment qualification during CAP included equipment attributes such as location, orientation, identification, mounting, and classification. These attributes were verified through extensive engineering walkdowns done to procedures, by reviewing design and vendor drawings, and through development of the Equipment Qualification Master List (EQML), which listed electrical and mechanical equipment requiring environmental and/or seismic qualification. This effort included the review and validation of the original seismic qualification calculation, analyses, and test results and the augmentation of the seismic qualification documentation, as necessary, to assure compliance with the design criteria specified in DBD-ME-029 (Ref. 26).

The seismic qualification of equipment is documented through the completion of the Seismic Qualification Summary Packages (SEQSPs), which provide a summary of the qualification methods and procedures used and results obtained to document the seismic qualification of equipment. Where seismic qualification could not be documented for equipment, the appropriate design change was initiated to modify or replace that equipment in order to validate its seismic qualification.

Some seismic technical issues identified during CAP pertained to the 6.9 KV/480V transformer bus bar clearance and jumper cable slack, nozzle loads for the fan coil units, and the support structures for the containment spray and RHR heat exchanges. These issues were resolved by augmenting the existing design documentation and/or developing appropriate hardware modifications to ensure compliance with the design.

2.6 Anchorage

Anchorages provide the means by which attachments are made to locally transmit loads to reinforced concrete structures.

Various types of anchorage have been used at CPSES and are briefly described below:

- Drilled-in expansion bolts or expansion anchors are bolts having expansion wedges which provide resistance to applied loads. Expansion anchors are placed in holes drilled in hardened concrete. When the bolt is torqued, the wedges are forced against the concrete, securing the anchor bolt. Expansion anchors are generally used to secure surface mounted steel plates to the concrete. Structural supports or attachments are often welded to the plates. The expansion anchors used are Hilti Kwik-bolts, Hilti Super Kwik-bolts, and Post Nut Series Kwik-bolts as manufactured by Hilti Fastening Systems, Inc.

- Through-bolts are structural connections whose two main components are bolts and surface mounted plates. Through-bolts extend completely through the thickness of a wall or slab. The surface mounted plates are secured to the wall by the through-bolts. Structural supports or attachments are then welded to these plates.

- Embedded anchor bolts are bolts that are cast-in-place in structural concrete. The bolts vary in material grade and size. Surface mounted plates are often secured to the concrete through the use of embedded anchor bolts. Structural supports or attachments are often welded to these plate.

- Grouted anchor bolts are structural connections made by grouting structural bolts into concrete. This type of anchor is placed after the concrete has set. Surface mounted plates are often secured to the concrete through the use of grouted anchors. Structural supports or attachments are often welded to these surface mounted plates. The grouted anchor bolts used are of various sizes and material grade and are grouted in with cementitious non shrink grout or epoxy grout.

- Richmond inserts are structural inserts made of prefabricated steel. The inserts are embedded in the concrete when it is formed. Structural supports are attached to Richmond inserts by means of structural bolts or threaded rods. The Richmond insert used are Richmond structural connection inserts (types EC-2, EC-2W, EC-6 and EC-6W).

- Embedded strip plates are steel plates, 3/4" thick, 8" or 10" wide, with varying length. Embedded strip plates are located in concrete walls, columns, beams, and slabs. The plates are anchored to the concrete with 3/4" x 7 3/16" Nelson studs. The Nelson studs are welded to the strip plate in pairs spaced at 12" center to center.

- Embedded sheet plates are steel plates, 3/4" thick, with varying lengths and widths. The width of the sheet plate is never less than 10". Embedded sheet plates are located in concrete walls. The plates are anchored to the concrete with 3/4" x 7 3/16" Nelson studs. The Nelson studs are welded to the sheet in a rectangular pattern. The maximum center to center spacing in the orthogonnal direction is 12".

- Dedicated plates are steel plates with headed Nelson studs embedded in structural concrete. The plates are installed for specific attachments and vary in size and anchor configuration.

Anchorages and embedments in concrete follow installation specifications 2323-SS-09 (Ref. 30) for concrete and 2323-SS-30 (Ref. 31) for structural embedments. The requirements for the analysis and design of the anchorages and embedments in concrete follow the requirements given in DBD-CS-015 (Ref. 32).

The principal codes and standards used for establishing the design criteria for the analysis and design of embedments in concrete are given below:

ACI 318-71	Building Code Requirements for Reinforced Concrete
AISC-1969	Specification for the Design, Fabrication, and Erection of Structural Steel for Buildings, February 12, 1969 including Supplement Numbers 1,2 and 3
RCRBSJ	Specification for Structural Joins Using ASTM A325 or A490 Bolts, May 8, 1974; (Research Council on Riveted and Bolts Structural Joints (RCRBSJ), Including ERRATA Dated October 22, 1974

The design validation portion of CAP for concrete anchors included the performance of tests and the development of replacement calculations to establish and document the concrete anchor design criteria specified in DBD-CS-015 (Ref. 32). The installation specification, 2323-SS-30 (Ref. 31), for concrete anchors was revised to incorporate installation requirements consistent with the validated design criteria.

Interfaces were established among various disciplines with Civil/Structural assuring the validity of the anchorage. An example is given in the Seismic Equipment Qualification (SEQ) area. Equipment Footprint Loads (FPLs) were sent by SEQ to Civil/Structural with acknowledgement received back from SEQ assuring that the existing anchorage was acceptable for the design. Only when this acknowledgement was received by SEQ was the equipment considered to be "seismically qualified". FPLs were transmitted for every Seismic Category I piece of equipment in the EQ program with anchorage to the wall or floor in Seismic Category I buildings.

Specific anchorage issues identified during CAP included Hilti anchor bolts installation, anchorage design methods and criteria, Richmond insert allowables, spacing violations between various anchorage types, through-bolt designs, and embedded plate designs. Numerous walkdowns were conducted by Engineering and QC to gather data to address the issues and later became part of the post construction hardware validation effort. Inspection attributes for anchorages were identified through the installation specifications and validated in field walkdowns. Each attribute was established by Engineering. For those attributes that were "not acceptable" or the attribute could not be dispositioned based on the available information, an alternate plan consisting of testing, further walkdowns/inspections, or modifications were done to demonstrate and document the acceptability of the attribute. For example, Hilti expansion bolts had inspection attributes field verified for embedment, bolt torque, unverified bolt length caused by no markings, base plate holes violating minimum edge distance, and spacing violations among the other types of anchorage.

Thus, this comprehensive design and hardware validation program (i.e. CAP) provided evidence that the validated design met the field as-built conditions for safety-related hardware as well as non-safety, Seismic Category II installations.

2.7 SEISMIC SPATIAL INTERACTION PROGRAM

Introduction

The CPSES seismic/non-seismic interaction program (as a part of overall System Interaction Programs-SIP) was specifically devised to address seismic spatial interactions, as required by USNRC Reg. Guide 1.29. In many areas of Seismic Category I buildings, safety related structures, systems and components ("Targets") are located in close proximity of nonsafety, non-seismic structures, systems and components ("Sources"). This creates a potential for an adverse interaction between them due to physical failure of a source commodity under a seismic event and may result in a loss of function on the part of "Target" components. The seismic/non-seismic program dealt with this very scenario and ensured that no loss of function results due to adverse interaction with any nonsafety commodity due to a seismic event (SSE).

Program Implementation

Design basis document DBD-ME-005 (Ref. 41) provides general philosophy and technical basis guidance for implementation and maintenance of the seismic/non-seismic program.

These walkdowns were performed and the results documented in accordance with procedure CPE-EB-FVM-SI-40. Area (Room) specific matrices were developed to document the source - target interactions. All sources in the area were identified in the area matrix. Dynamic Impact Criteria (DIC) was used, where applicable, to eliminate interactions. Use of DIC involves evaluation of interactions on the basis of relative size, energy, and ductility of source and target as well as the existence of any intervening component between source and target. The underlying principle in use of DIC is that due to a falling source either there is no direct impact (between source and target) or even if one occurs, it is such that it will not impair the ability of the "Target" component to perform its safety function. All interactions where DIC was used are considered "acceptable" and these sources were screened out from further consideration.

In case of interactions where DIC could not be used and "Target" damage was possible, the interactions were considered "unacceptable" and their resolution was required. This resolution was achieved either by evaluation of the source commodity and modification where required, such that source will maintain its structural integrity under seismic (SSE) loads and will not fail, or by installing barriers to preclude interaction due to failed source. With the exception of a few instances of barrier installation, the method adopted was that of evaluation of the source to ensure that it maintained its structural integrity and is mounted Seismic Category II.

The methods of seismic evaluation included use of

- Analysis
- Earthquake Experience Database
- Vendor's Seismic Qualification Report

Earthquake Experience Database methodology of EQE, Engineering, Inc. was extensively utilized to assess structural integrity of sources identified in "unacceptable" interactions. This application was similar to one used in resolution of NRC Unresolved Safety Issue (USI) A-46 to address the seismic safety of equipment in nuclear power plants. The only difference in this instance is that the functionality of equipment was not a consideration since equipment under review was all nonsafety related. Support/anchorage analysis was performed to assure their seismic adequacy.

Structural analysis was used on a number of structural/architectural items (e.g. platforms, ladders, gratings, gypsum walls, etc.) to verify their adequacy under seismic loads. Also the control room ceiling was analyzed and designed to seismic category II requirements.

Seismic Qualification Reports from vendor were available for certain equipment where qualification was achieved through testing and/or analysis. These were utilized to assess the seismic adequacy of the equipment involved.

Distribution Systems (non ASME piping, HVAC Ducts, Electrical Raceways) were addressed by a combination of analysis and Earthquake Experience Database. The evaluation of these systems is briefly discussed below.

- NNS piping systems (non ASME, class "5") - These were evaluated by use of Earthquake Experience Data Base as well as analysis for both small (2" diameter and smaller) bore and large (greater than 2" diameter) bore piping and supports. EQE Engineering report number 5 52019.01-R-001, 52006.01-R-001 summarize the effort that qualified the NNS piping and supports in Seismic Category I buildings to be seismically adequate to sustain loads generated due to SSE.

- HVAC Duct and Duct Supports - Non safety HVAC ducts and their supports were evaluated for seismic loads generated by SSE, to ensure they maintain their structural integrity and there is no failure. Design basis document DBD-CS-086 (Ref. 17) provides the design criteria for HVAC ducts and duct supports.

- Electrical Raceways - Non class 1E (Train "C") cable trays and their supports were designed using Seismic Category I criteria thus ensuring their structural integrity under seismic loading due to SSE. Design Basis document DBD-CS-82 (Ref 12) and Engineering Procedure ECS 5101 (Ref. 13) provide the required design basis and guidelines for installation of these cable trays. Large bore (greater than 2" diameter) Train "C" conduits and their supports were designed using Seismic Category II design requirements as a minimum. Design basis documents DBD-CS-90 (Ref. 15) and DBD-CS-111 (Ref. 33) provide the design criteria for the design of these conduits and their supports.

- Train "C" conduits that are small bore (2" diameter and smaller) were reviewed in the field for possible adverse interaction with NS related commodities. Where such interactions exist the conduit supports were analyzed to ensure they satisfy the seismic Category II requirement of maintaining structural integrity under seismic loads due to SSE. Design basis document DBD-CS-93 and engineering assessment procedure DEO-DEO-EAP-CS-41 provide the design criteria, engineering guidelines and design status these conduit supports.

Commodity Clearance

Nuclear-Safety related and non safety seismic category II mounted commodities are located in close proximity in many areas of nuclear power plant. Even though seismic adequacy of their individual installation is assured, these components may be subjected to additional interaction loads due to their seismic displacements/deflections and insufficient space between them and thus may compromise component's safety function.

In order to assess this above described spatial interaction an independent program of Commodity Clearance was implemented. This program examined the available clearances in the field between two safety-related commodities and between safety-related and non-safety Seismic Category II mounted commodities. Specification CPES-S-1021 provides the necessary clearance requirements and technical basis and general guidance in evaluating these clearance requirements. Extensive plant walkdowns and evaluations were performed under procedure CPE-SWEC-FVM-CS-068 and it was ascertained that either sufficient clearance exists between commodities or lack of sufficient clearance does not jeopardize structural integrity and functionality of the commodities involved.

Program Maintenance

Both seismic/non-seismic and Commodity Clearance programs are maintained current for the operating life of the plant, via Engineering Procedures, Specifications and Design Basis Documents that are in place. The requirements of these programs, for the most part are pre-engineered into the Design Modifications that are issued for implementation. Non-safety commodities that are installed new are designed to Seismic Category II requirements and are so mounted. This precludes any possibility of new interactions being created. Similarly, commodity clearance requirements are addressed in the design change documents when installing new commodities or relocating existing ones.

Thus through implementation and proper maintenance of seismic/non-seismic and commodity clearance programs, seismic spatial interaction of nuclear-safety related and non-safety commodities, is satisfactorily addressed and requirements of USNRC Reg. Guide 1.29 are met with.

Miscellaneous Engineering Reports

Various Engineering reports were prepared in support of the Seismic/Non-seismic program. These reports are listed below.

- EQE Report Number 87186-03-R-001 - Assessment of Median Response to SSE Level Earthquake Excitation of CPSES.
- EQE Report Number 87186-01-R-001 - Structural Integrity Evaluation for Seismic/Non-Seismic Program.
- TU Electric, Design Engineering Organization Engineering Report Number ER-CECO-ME-040 - Seismic/Non-Seismic Interactions Program Maintenance.
- TU Electric, Design Engineering Organization Engineering Report Number ER-CECO-ME-041 - Validation of Dynamic Impact Criteria.
- Impell Report Number 11-0210-0007 - Threaded Pipe Failure Evaluation Report.
- Impell Report Number 11-0210-0037 - Seismic Qualification of Category I Equipment.
- EQE Report Number 52006.01-R-001 - Seismic Evaluation of Non-nuclear Safety Non-Seismic Small Bore Piping At CPSES.
- EQE Report Number 52019.01-R-001 - Seismic Evaluation of Non-nuclear Safety, Non-Seismic Large Bore Piping.
- EQE Report Number 52060-R-002 - Common Area Report

2.8 Separation Criteria for Fire and Flood

Separation criteria used in the design of Comanche Peak Steam Electric Station Units 1 and 2 are described in detail in the FSAR Section 3.6 and 9.5. The discussions of these criteria that follow are of a general nature and for information only.

2.8.1 Separation Criteria for Fire

The general guideline for the design of buildings and plant layout is to isolate safety-related systems from unacceptable hazards, including fires. For this purpose, the various buildings of CPSES are divided into a series of fire areas. The primary consideration in this division was the separation of fire safe shutdown systems and components from their redundant counterparts and the isolation and separation of fire hazards from fire safe shutdown systems. Consideration was also given to the isolating of combustibles not located in, or exposed to, areas containing fire safe shutdown components and to provide access and egress routes to fire areas for plant personnel and the fire brigade per the FSAR (Ref. 34, Section 9.5.1.5).

All structural construction elements are composed of non-combustible materials. Structural walls, floors, and ceilings consist of poured, reinforced concrete, concrete block or structural steel framing with pre-cast concrete panels and metal siding. Where these assemblies are designated as fire barriers, (i.e.,1 hour, 2 hour or 3 hour fire ratings) the construction is in accordance with a UL listed design, a Uniform Building Code design, a specific fire test by a nationally recognized laboratory or as otherwise described in the FSAR. The design characteristics of interior construction elements, ventilation systems, electrical cable and cable trays, transformers, flammable liquid and gas storage reflect these fire protection considerations per the FSAR (Ref. 34, Section 9.5.1.5)

The design features for redundant safety related systems are such that the systems are either separated or protected or the function is otherwise provided in order to minimize the effects of a single fire hazard. Where redundant fire safe shutdown systems required to bring the plant to a hot standby condition are located within the same fire area and are subject to damage from a single fire hazard, a Fire Hazards Analysis Evaluation demonstrates and documents compliance with recommended guidelines by protecting the function with one of the methods described below per the FSAR (Ref. 35, Section 9.5 APCSB 9.5-1 Appendix A, D.1).

For systems located outside the Containment Building the following is provided:

- A one-hour fire barrier or one-hour fire rated cable for one set of required fire safe shutdown cabling and, based on the fire hazards of the area, automatic fire suppression and fire detection are provided.
- Alternate shutdown capability.
- Fire detection and suppression, adequate for the hazards of the area, accompanied by 20 feet of horizontal separation with negligible intervening combustibles or fire hazards, unless justified by the Fire Hazards Analysis.
- Separation of redundant required sets of fire safe shutdown systems and components by a fire barrier having a 3 hour rating, unless justified by the Fire Hazards Analysis.

For systems located inside the Containment Building the following is provided:

- Fire detection in combination with radiant energy shields protecting one set of required fire safe shutdown systems and components unless justified by the Fire Hazards Analysis.

- Fire detection accompanied by 20 feet of horizontal separation with negligible intervening combustibles or fire hazards unless justified by the Fire Hazard Analysis.

Where a redundant system required to bring the plant to a cold shutdown condition is subject to damage from a single fire hazard, the following is provided:

- Fire detection system

- Procedures to repair at least one train of the damaged system within 72 hours.

Other separation and isolation provisions are included in the design of the control room, the cable spreading room, the electrical switchgear rooms, the station batteries, the diesel generators, the fire suppression systems, and other systems and components as described in the FSAR.

2.8.2 Seismic and Other Design Considerations for Non-Seismic Category I Fluid Systems in the Vicinity of Seismic Category I Systems

Seismic Design Considerations

As part of the seismic classification for CPSES, certain structures, systems or components are designated Seismic Category II. Those portions of structures, systems or components whose continued function is not required but whose failure could reduce the functioning of any Seismic Category I system or component required to satisfy the requirements of section C.1.a thru C.1.q of Regulatory Guide 1.29 to an unacceptable level or could result in incapacitating injury to occupants of the control room are designated Seismic Category II and are designed and constructed so that the SSE would not cause such failure. This classification is discussed in the FSAR Section 3.2 and the designated structures, systems and components are listed in the FSAR in Table 17A-1.

Other Design Considerations

In addition to the Seismic/non-Seismic design consideration for systems discussed above, the design of Comanche Peak makes provisions for protection against the dynamic effects, including flooding, associated with the postulated rupture of piping. The FSAR Section 3.6B describes the design bases and protective measures used to ensure that all essential structures, systems and components required for a safe shutdown and to maintain the reactor in a cold shutdown condition are adequately protected from the dynamic effects associated with postulated pipe ruptures located inside and outside containment.

What follows is a discussion of the design bases, the protection criteria and the safety evaluation for these postulated ruptures. The intent here is to provide an overview of the considerations for high energy line break and moderate energy line breaks as discussed in the FSAR. This should be considered for information only and one should refer to the FSAR and the associated design basis documents for the specific design bases.

Design Basis: [FSAR Section 3.6B.1.1]

The following design bases are utilized in determining the consequences of pipe failures on essential systems or components important to plant safety or shutdown which are located in the vicinity of high or moderate energy piping:

- Piping systems, valves and components required to achieve a safe shutdown are protected.
- Required redundancy is maintained in the protection system (IEEE Standard 2790, Class 1E electrical systems (IEEE Standard 308), ESF equipment, cable penetrations and their interconnecting cables.
- HVAC equipment required for safe shutdown is protected. Portions of the Primary Plant Ventilation and associated chilled water are credited after 72 hours to mitigate the long term effects of HELBs outside containment. This is sufficient time to effect repairs.
- Instrumentation required for post accident monitoring is protected as described in the FSAR Section 7.5.
- Containment leak tightness will be maintained.

Design bases related to RCS LOCA considerations that are not pertinent to the present discussion are also included in the FSAR Section 3.6B but are not included here.

All large bore high energy lines in safety related structures are Seismic Category I and II. Small bore high energy lines in safety related structures are Seismic Category I or II except for certain main steam line drip pot drain lines described in the FSAR.

Protection Criteria: [FSAR Section 3.6B.1.2.1]

Depending upon the type and location of the postulated pipe break, certain safety equipment may not be classified as essential for the particular event (Essential systems are defined as those systems that are needed to shut down the reactor and mitigate the consequences of the pipe break for a given postulated piping break). Some safety equipment will be essential for almost all cases. This category includes service water to the ultimate heat sink and the pressurizer level instrumentation. The effects of a postulated piping failure, including environmental conditions resulting from the escape of contained fluids, will not preclude habitability of the control room or access to surrounding areas important to the safe control of reactor operations needed to cope with the consequences of the piping failure. Accordingly, protection from the effects of the pipe rupture will be provided only for that safety-related equipment considered as essential on a case-by-case basis.

The systems or portions of systems and equipment for which protection against the postulated pipe failures is required are listed in the FSAR. In general, protection from pipe failure need not be provided if any of the following conditions exist:

- The piping is physically separated (or isolated) from structures, systems or components important to safety by protective barriers, or is restrained from whipping.
- Following a single break, the unrestrained pipe movement of either end of the ruptured pipe about a plastic hinge formed at the location determined by calculation cannot impact any structure, system or component important to safety.
- The internal energy level associated with the whipping pipe can be demonstrated to be insufficient to impair the safety function of any structure, system or component to an unacceptable level.

The results of the environmental analysis, which discuss the effects of pressure, temperature, humidity and flooding on safety related equipment, are provided in the FSAR Sections 3.11 and 3.6B.2.5.

Safety Evaluation: [FSAR Section 3.6B.1.3]

Specific design features utilized for the protection of essential systems are identified in FSAR Section 3.6B.2.5. Protection for essential structures and components to ensure that their minimum required function can be accomplished following a postulated pipe rupture is provides by one or more of the following method:

- Separation and remote location of piping from essential structures and components. Separation is achieved by physical plant arrangements that provided sufficient distances between essential structures, components and piping such that the effects of postulated pipe ruptures cannot impair the structural integrity or operability of the essential structure or component.

- Barriers, shields and enclosures. Barriers, shields or enclosures are provided for piping or, alternatively, protection of components within structures or compartments is provided. These elements are designed to withstand and contain the effects of the postulated pipe ruptures.

- Pipe whip restraints. Where physical separation, shields or enclosures are not feasible, protection of essential systems and components is attained by the use of pipe whip restraints and barriers. Alternatively, essential systems and components may be designed to withstand the effects of the postulated rupture.

No protection or restraints are provided when it is determined that the piping failure will not cause unacceptable damage to essential systems.

In evaluating the effects of a moderate energy system piping failure, the postulated failure is a crack which results in neither pipe whip nor jet impingement but rather in spraying water streams. As such, the consequences are of an environmental/ flooding nature. The effects of cracks are evaluated for all essential equipment on a case-by-case basis. If it is determined that an essential component is not qualified or cannot be demonstrated to operate under the adverse conditions caused by the crack, then the essential component is protected. Protection is accomplished either by relocating the component, installing a barrier or curb or by designing a shield.

Flooding Evaluations:

Flooding evaluations are performed per the Systems Interaction Program (DBD-ME-007) (Ref. 36) for areas that can accumulate a flood level. A discussion of a portion of that program is provided below as taken from DBD-ME-007, (Ref. 36, Section 5.5).

The worst case flood level shall be calculated utilizing the maximum flow input into a given area. Potential flooding sources include, but are not limited to the following:

- Worst case HELB.
- Worst case MELB.
- Inadvertent actuation of the fire suppression system, e.g., a single sprinkler head actuation or failure of a deluge isolation valve.
- Seismically induced failure of a threaded pipe fitting.
- Tank failure, when the break is located upstream of the first isolation valve or the failure of a non-seismic tank.

- Any adjoining areas connected by the flow path.
- Back-flooding via the floor drain system.
- Normal equipment leakage.
- Sprinkler actuation as a result of a HELB

The pipe rupture source/target interactions that are identified for these sources are evaluated to provide analysis to demonstrate compliance with the design requirements.

3. SEISMIC MARGIN EARTHQUAKE SELECTION

For reduced-scope plants such as Comanche Peak, the NRC has specified the SSE ground response spectra and in-structure response spectra as the response spectra to be used for the seismic evaluation per NUREG-1407(Ref. 37, Section 3, Table 3.1). The NRC specifies that if there are any differences between the FSAR and the in-structure response spectra used for the evaluation, these should be noted.

For Comanche Peak, the SSE ground response spectra and in-structure response spectra noted in the FSAR were used for this evaluation.

The design response spectra for Comanche Peak are described in specification S-1032G (Ref. 4) and in FSAR Section 3.7B.1.1 and are based on a maximum ground acceleration of .12g horizontal and .08g vertical. The response spectra are constructed on the basis of recommendations by Newmark,etal and generally conform to the recommendations of NRC Regulatory Guide 1.60 Revision 1, with minor exceptions. The critical damping values for Category I structures, systems and components are determined in accordance with the recommendations of NRC Regulatory Guide 1.60 and Newmark,etal. The design response spectra are discussed in more detail in Section 2.1 of this report.

4. DEVELOPMENT OF SEISMIC MARGIN EARTHQUAKE DEMAND

This section is not applicable to the reduced-scope seismic margin evaluation. For Comanche Peak, the SSE ground response spectra and in-structure response spectra noted in the FSAR were used for this evaluation. No new seismic responses were developed and no new seismic analyses of systems structures or components were performed.

5. SEISMIC MARGIN EARTHQUAKE EVALUATION

5.1 Overall Approach

The Nuclear Regulatory Commission provided guidance for performing this work in NUREG-1407, 'Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities' (Ref. 37). In that document, CPSES is identified as being located in a region of low seismicity and is classified as a reduced-scope plant. The document describes methodologies that are acceptable to the NRC for performing the seismic analysis, including special considerations for reduced-scope plants.

TU Electric chose the Seismic Margin Methodology (SMM) that is based on the EPRI methodology described in EPRI NP-6041, 'A Methodology for Assessment of Nuclear Power Plant Seismic Margin Revision 1' (Ref. 38). Since CPSES is categorized as a reduced scope plant, the review level earthquake is the same as the design basis for the Seismic Category I systems, structures and components, namely the Safe Shutdown Earthquake (SSE). A fundamental consideration in seismic margins evaluations is that systems, structures and components designed for the SSE will survive that event. Given these assumptions and the fact that the design of CPSES provides for safe shutdown following a safe shutdown earthquake, the seismic margin evaluations for CPSES place emphasis on both the verification of the seismic design basis and seismic qualification and the walkdown of the safe shutdown systems rather than on evaluations of margins. The components in these safe shutdown systems constitute the SSEL. A subset of the SSEL is the list of items that are walked down. The focus of this walkdown is on equipment anchorages and seismic spatial interactions, but it also includes a review of the important attributes of the seismic equipment described in Appendix A of NP-6041. The seismic margin evaluations/walkdown also applies to containment systems that provide containment integrity and isolation and prevent early failure and containment bypass. The containment review is discussed in Section 5.8 of this report.

The reduced scope seismic margin evaluation performed for Comanche Peak consists of the following steps:

- Development of the Program Plan
- Selection of the Seismic Review Team
- Development of the Safe Shutdown Equipment List
- Preparatory work prior to the walkdown including screening and review of seismic design and seismic qualification of various elements
- Seismic Capability Walkdown and Evaluation
- Subsequent Walkdown and Evaluation
- Containment Walkdown and Evaluation
- Documentation

The evaluation was conducted under the overall project management of the Supervisor of Risk and Reliability Group. Responsibility for the major tasks was divided between

Civil/Structural Section of Design Engineering and the Risk and Reliability Group. Risk and Reliability engineers developed the SSEL. Civil/Structural engineers performed the ground work for the walkdowns. All members of the team completed the walkdown forms and participated in the walkdowns and evaluations. In addition to providing support in all the areas associated with the walkdown, EQE engineers provided strategic reviews of the program.

5.2 Screening Criteria

Screening criteria that may be used in the seismic margin reviews are discussed in NUREG-1407 (Ref. 37, Sections 3.2.4 and 3.2.5 and Appendices B and D). This provides that either the screening guidance given in the Generic Implementation Procedure for Seismic Verification of Nuclear Power Plant Equipment (GIP) or that given in EPRI NP-6041, Tables 2.3 and 2.4 may be used in the Seismic Margin Evaluation. [Though it is not explicitly stated in Section 3.2.5 that the NP-6041 (Ref. 38) tables should be applied for a reduced-scope plant, it states that the '...guidance provided in EPRI NP-6041 is supplemented by that in the following sections to (1) reflect the partitioning of the 0.3g screening criteria into the reduced-scope...'.] The EPRI NP-6041 screening criteria were used for this evaluation.

The NP-6041 screening guidelines were developed as part of the EPRI Seismic Margin Program and are based on independent industry studies and work by EPRI that takes into consideration the available earthquake experience data from various industrial facilities. These guidelines provide a means for screening certain elements from an unnecessarily detailed evaluation that is based on the opinions of experts and on observed seismic ruggedness of the elements. These guidelines are presented in NP-6041 Section 2, Tables 2-3 and 2-4 for three different Peak Free-Field Ground Accelerations (pga). For CPSES the column with pga <0.8g spectral was used with some exceptions as discussed below. These criteria are shown in Tables 5.2-1 and 5.2-2. The notes that accompany these tables describe the factors which the SRT considered in its evaluation of those items that were not specifically screened.

TABLE 5.2-1
SUMMARY OF CIVIL STRUCTURES SCREENING CRITERIA FOR COMANCHE PEAK STEAM ELECTRIC STATION SEISMIC MARGIN EVALUATION
[FROM TABLE 2-3, NP-6041]

Type of Structure		Screening Disposition*
1.	Concrete containment	Screened
2.	Containment Internal Structures	Screened. Note 1
3.	Shear walls, footings and containment shield walls	Screened. Note 1
4.	Diaphragms	Screened. Note 1
5.	Category I concrete frame structures	Screened. Note 1
6.	Category I steel frame structures	Screened. Note 1
7.	Masonry walls	Note 2
8.	Control room ceilings	Note 3
9.	Impact between structures	Screened
10.	Category II structures with safety-related equipment or with potential to fail Category I structures	Note 4
11.	Dams, levees, dikes	Note 5
12.	Soils Failure Modes, soil-liquefaction and slope instability	Note 6

* See notes on the following page

Notes to table 5.2-1

Note 1 Screened on the basis of design for >0.1g

Note 2 Masonry walls were evaluated on a case by case basis as a part of the seismic/non-seismic systems interaction program. The systems interaction program is discussed in section 2.7.

Note 3 NP-6041 recommends an inspection of the control room ceiling for adequacy of bracing or safety wiring. The control room ceiling was extensively reviewed as part of the systems interaction program and is designed to seismic category II requirements. See section 2.7.

Note 4 Switchgear building at CPSES has been analyzed for structural adequacy under plant design basis earthquake (SSE) loading. This building does not house any safety related equipment. There are no other Seismic Category II structures (building structures) at CPSES.

Note 5 No evaluation is required per NUREG-1407, Section 3.2.5.4. The safe shutdown impoundment dam is a seismic category I structure and is designed accordingly per requirements of Design Basis Document DBD-CS-096.

Note 6 No evaluation is required per NUREG-1407, Section 3.2.5.4

TABLE 5.2-2
SUMMARY OF EQUIPMENT AND SUBSYSTEM SCREENING CRITERIA FOR COMANCHE PEAK STEAM ELECTRIC STATION SEISMIC MARGIN EVALUATION
[FROM TABLE 2-4, NP-6041]

Equipment Type	Screening Disposition*
1. NSSS Primary Coolant System (piping and vessels)	Screened
2. NSSS Supports	Screened. Note 1
3. Reactor Internals	Screened. Note 2
4. Control Rod Drive Housings and Mechanisms	Screened Note. 3
5. Category I Piping	Note 4
6. Active Valves	Screen Note 5
7. Passive Valves	Screen Note 5
8. Heat Exchangers	Note 6
9. Atmospheric Storage Tanks	Note 7
10. Pressure Vessels	Note 6
11. Buried Tanks	Note 8
12. Batteries and Racks	Note 9
13. Diesel Generators (includes engine and skid-mounted equipment)	Note 10
14. Horizontal Pumps	Screened. Note 11
15. Vertical Pumps	Screened. Note 11
16. Fans	Note 12
17. Air Handlers	Note 12

18.	Chillers	Note 12
19.	Air Compressors	Note 12
20.	HVAC Ducting and Dampers	Note 13
21.	Cable Trays	Note 13
22.	Electrical Conduit	Note 13
23.	Active Electrical Power Distribution Panels, Cabinets, Switchgear, Motor Control Centers	Note 14
24.	Passive Electrical Power Distribution Panels and Cabinets	Note 14
25.	Transformers	Note 15
26.	Battery Chargers	Note 16
27.	Inverters	Note 16
28.	Instrumentation and Control Panel Racks	Note 14
29.	Temperature Sensors	Note 17
30.	Pressure and Level Sensors	Note 17

* See notes on page 69

Notes of Table 5.2-2

Note 1 Screened on the basis of the design of NSSS supports for combined SSE and pipe break loads.

Note 2 Reactor internals are designed seismic category I as certified by the NSSS vendor and vendors seismic qualification report no. SEQSP-WECM-135.

Note 3 Per NP-6041 an evaluation is not required if the CRD housing has a lateral support or the review level earthquake (RLE) does not exceed the SSE. For CPSES the RLE is the SSE. The CRD housings are designed seismic category I as certified by the NSSS vendor seismic qualification report no. SEQSP-WGCM-135.

Note 4 Historical programs included detailed walkdown of all category I piping. See section 2.3.4 . Category I piping is designed to sustain and remain functional under design basis earthquake (SSE) loading.

Note 5 Historical programs included detailed walkdown of these components. Components of this type are part of the SSEL and were included in the walkdown. Seismic category I valves are designed to sustain and remain functional under design basis earthquake (SSE) loading.

Note 6 NP-6041 recommends a margin evaluation to include anchorage and supports. Historical programs included detailed walkdown and evaluation. Components of this type are in the SSEL and were included in the walkdown and evaluation.

Note 7 Atmospheric storage tanks are designed to seismic category I requirements. See sections 2.2.4 and 5.5.

Note 8 NP-6041 recommends an evaluation of piping connections. Buried tanks were reviewed under historical programs including an evaluations of piping connections.

Note 9 1E batteries and racks are screened on the basis of seismic design

Note 10 NP-6041 recommends a visual inspection of anchorage and attachment of peripheral equipment. A review of the DG and peripherals was included in the historical programs. Visual inspection for anchorage and attachments of peripherals was performed as part of the SSEL walkdown.

Note 11 These components were evaluated under historical programs. Visual inspection of anchorage and clearance was performed as part of the SSEL walkdown.

Note 12 The components were evaluated as part of the historical programs. NP-6041 recommends an evaluation of all units supported on vibration isolators. For CPSES, fans, air handlers, etc. that are non-safety are seismic category II; safety related are seismic category I. No seismic category I equipment at CPSES of this type is supported on vibration isolators.

Note 13 NP-6041 recommends a walkdown of representative systems. Historical programs included detailed walkdown of Electrical raceways and supports, HVAC ducting, dampers and supports. See sections 2.3.1, 2.3.2 and 2.3.3. These suspended systems were also included in the SSEL area walkdown.

Note 14 NP-6041 recommends an evaluation to verify anchorage of the cabinet and proper attachment of instruments. Historical programs included this type of evaluation. These attributes were also included in the SSEL walkdown.

Note 15 NP-6041 recommends an anchorage evaluation and a verification of restraint of transformer coils for dry transformers. Historical programs included this type of evaluation. Anchorage evaluation was also included as part of the SSEL walkdown.

Note 16 NP-6041 recommends an anchorage evaluation for solid state units and an evaluation of others. Historical programs included such evaluations. Anchorage was also included in the SSEL walkdown.

Note 17 NP-6041 recommends evaluation with emphasis on attachments. Historical programs included this attribute among others. Attachment and interaction were included in the SSEL walkdown.

It should be noted that the application of screening criteria to a reduced-scope plant is somewhat different than for full- or focused-scope plants. This is because (1) the review level earthquake for the reduced-scope plant is the SSE and all components that are initially seismically designed are assumed to be acceptable for the SSE, and (2) a seismic margin review is not done for the reduced-scope, that is no HCLPFs are calculated and no seismic margin above SSE is determined.

These criteria were applied in the pre-walkdown phase of the evaluation. Once the SSEL was developed, the various elements were reviewed against the screening criteria and the specific items noted in the tables that should be examined were included in the walkdown/walk-by notes for that component. The walkdown of the SSEL elements whether or not they had been screened included a review of the important attributes of the seismic equipment, as described in Appendix A of EPRI NP-6041, including an examination of the anchorage and attachments. In addition the seismic qualification packages were reviewed for each of the items on the walkdown list and notes were made of important attributes to be inspected in the field.

5.3 Systems Review and SSEL Development

Comanche Peak Steam Electric Station Units 1 and 2 are late model Westinghouse Pressurized Water Reactors. As such, the systems, structures and components important to safety are based on seismic design considerations as described in the Final Safety Analysis Report. The Individual Plant Examination for Internal Events (IPE) for CPSES has been completed and is the basis for much of the work documented in the SSEL report. For example, the event trees that were developed in the IPE for the (Loss of Offsite Power (LOOP) and Very Small Break Loss of Coolant Accident (VSBLOCA) were used in this analysis. The event trees describe the plant functions that constitute success for these events. The system analysis that formed the basis for the systems portion of the IPE was used to identify the systems required to support the functions. The systems models and basic events were used to identify the major components of these systems.

5.3.1 Methodology

A methodology similar to that described in EPRI NP-6041, Revision 1, Section 3 and Appendix B, was used to identify the systems, equipment and components required to maintain a safe shutdown condition following the seismic margin earthquake. Section 3 of EPRI NP-6041, Revision 1, provides the assumptions and ground rules that govern the selection of systems and equipment for the seismic margin review.

- Offsite power is assumed to be failed due to the Seismic Margin Earthquake and unrecoverable during the 72 hour period of interest.

- Path success is defined as the ability to achieve and maintain a stable hot or cold shutdown condition for at least a 72 hour period following the seismic event.

- Only seismically induced transient events and small seismically induced primary coolant leakage events (referred to as "small LOCAs") are addressed; i.e.,based upon numerous seismic PRAs, it is assumed that the seismic margin earthquake will not cause large LOCAs. By small leakage it is believed that it is unlikely that one will be able to rule out the possibility of small leaks or failures in small instrument lines. It is judged that the combined leakage is equivalent to a one-inch diameter break.

- If one element in the Success Path Logic Diagram (SPLD) represents a multi-train system, safety function success is assumed to be measured at the system level, not the train level. In other words, if one train of a system is judged to be seismically rugged (exclusive of a train-specific systems interaction failure), then all trains of that system are considered rugged. This should be valid if the train-wise layout is similar, although train-specific systems interactions problems may make the assumption invalid.

- Non-seismic-caused component or system unavailability is not explicitly addressed. This should be reasonable for systems that have multiple and redundant trains but should be treated with caution for single-train with recognized poor availability.

- Only systems whose function is to prevent severe core damage from occurring, and their support systems, are evaluated; accident consequence mitigation systems are not in the scope of a seismic margin assessment.

These assumptions are modified somewhat for reduced scope plants. For the CPSES reduced scope seismic margin assessment, the effects of seismically induced relay and contractor chatter were not evaluated (See NUREG-1407). Containment systems are not included in the safe shutdown path evaluation. However, NUREG-1407 includes requirements for a walkdown of certain containment related systems. This is discussed in section 5.8 of this report.

Using these assumptions, a methodology for SSEI Selection was developed.The methodology consists of the following steps:

- Identify the plant specific critical safety functions for CPSES.

- Develop event trees for Loss of Offsite Power and Very Small Break LOCA initiating events.

- Identify the systems that provide the functions identified in the event trees.

- Develop the Success Path Logic Diagram and identify both the preferred and alternate success paths for the initiating events, taking into account both operational and systems considerations.

- Identify components within these systems required for safe shutdown that constitute the SSEL for CPSES.

5.3.2 Systems Reviews

The systems that were reviewed for the seismic margin evaluation are listed below.

- Component Cooling Water (CC) System

- Auxiliary Feedwater (AF) System

- Residual Heat Removal (RH) System

- Station Service Water (SW) System
- Chemical and Volume Control (CS) System
- Reactor Coolant (RCS) System
- Safety Injection (SI) System
- Condensate and Feedwater (CF) System
- Main Steam (MS) System
- Reactor Protection (ES) System
- Electric Power (EP) System
- Safety Chilled Water (CHS) System

The process outlined above is described in detail in the SSEL Report which is included as Appendix A. The result of this work is a seismic Safe Shutdown Equipment List (SSEL) for CPSES. This SSEL was then reduced to the list of components that were walked down in the field.

As noted in Tables 5.2-1 and 5.2-2 above, certain items such as safety related structures and the NSSS screen. These items are not included in the SSEL though they are obviously required for success. The SSEL was generally used to delineate equipment at the component level. The safety related structures were reviewed by the SRT and are addressed in sections 2.2 and 5.2 of this report. Similarly the NSSS was reviewed by the SRT and is addressed in sections 2.4 and 5.2 of this report.

5.4 Selection of the Seismic Review Team

The members of the Seismic Review Team were selected taking into consideration the need for senior personnel familiar with the design, construction, operation and unique licensing history of Comanche Peak Steam Electric Station. Six senior individuals, four from within the CPSES engineering organization and two from an outside consultant were selected. From these, two walkdown teams were assembled, each having the following composition:

- A member of the Comanche Peak Design Engineering Organization (DEO) Civil/Piping Engineering Group (this organization has responsibility for seismic design matters including seismic qualification of equipment and spacial systems interaction)

- A member of the Comanche Peak Nuclear Engineering Risk and Reliability Engineering Group (this organization has responsibility for the IPE/IPEEE/PRA, systems interaction and reliability engineering programs)

- A representative from EQE Engineering Consultants (this organization provided expert analysis and support in developing industry seismic evaluations programs and for licensing the plant)

- Representatives from operations, radiation protection and other Comanche Peak organizations provided assistance on an as-needed basis to the walkdown teams.

The SRT composition ensured that each team includes engineers with extensive Comanche Peak knowledge and design experience, an understanding of the Individual Plant Examination (IPE) results and industry experience in the Seismic Qualification Utility Group (SQUG) and EPRI SMA methods. Brief resumes of walkdown team members are included in Appendix B.

5.5 Walkdown Preparations

CPSES is a reduced scope plant. As such, the seismic input for seismic margin review is the Safe Shutdown Earthquake (SSE) of the plant. Since CPSES is not an A46 plant, evaluation/acceptance criteria is based on the requirements of the plant FSAR.

CPSES has been recently licensed and has been evaluated in a great depth for the Seismic Qualification of structures/equipment as well as seismic spatial interactions. The respective programs conducted in these areas have very effectively established the seismic capability of the plant. These programs are discussed in detail in sections 2.2 through 2.7. The SRT reviewed these programs thoroughly and placed heavy emphasis on them. Prior to commencement of the walkdown effort, certain generic issues of concern were examined in light of their application to CPSES-IPEEE seismic evaluation. These issues were: 1). Seismic Interaction of Flux Mapping System (Generic Issue 131), 2). Effects of Fire Protection System Actuation on Safety Related Equipment (Generic Issue 57), 3). Seismic Category I Water Storage Tanks (Refueling Water Storage, Reactor Make Up Water Storage and Condensate Water Storage). The results of the investigation of these issues and finding are discussed below.

Seismic Interaction of Flux Mapping

The FMS is non-nuclear-safety-related system and if installed non seismic may cause unacceptable interactions. SRT reviewed the SIP-Seismic/Non Seismic program documents to determine the status of the design of supporting structures of this system. The document research determined that FMS is designed to Seismic Category II requirements and will withstand the loads generated due to SSE, thereby precluding and possibility of causing interactions with safety related component(s) under a seismic event

(SSE). The design documents that established the necessary qualification are Seismic Qualification Package (SEQSP-WECM-137, ii) calculation no. 16345-CS-(s)-141 and iii) DCA 49944.

Effects of Fire Protection

The SRT reviewed calculation no. 0210-063-0016 in order to determine the results of the evaluation performed and verify whether any corrective actions were required and if so, were they completed. The calculation documented the following conclusions as a result of the evaluation performed

- None of the redundant safe shutdown equipment (listed in the subject calculation) is susceptible to damage due to inadvertent actuation of a single sprinkler head at one time within the Fire Suppression System.
- Two rooms in Seismic Category I building were found to have Safety related equipment (MCCs in both cases) that is susceptible to damage by use of inadvertent hose streams by the fire brigade during manual fire fighting activities. The two rooms identified were in the Service Water Intake Structure and the Auxiliary Building. The corrective action required to resolve this issue was identified and a calculation was performed to document the completion of this corrective action. Fire preplans of these rooms were modified as a corrective action to alert the fire brigade personnel as to the sensitivity of the equipment (MCCs) and to take appropriate steps to prevent damage during manual fire fighting activities.

The above addresses only part of the Generic Issue 57 (GI57). Overall response to the GI57 Issue wil be included in the IPEEE submittal.

Seismic Category I Water Storage Tanks

All three water storage tanks (Refueling Water Storage, Reactor Make Up Water Storage and Condensate Water Storage tanks) are yard concrete structures. These are designed to the FSAR requirements of safety related Seismic Category I structures, which include designing for loads generated by SSE level seismic events, tornado pressure and tornado generated missile impact. Their design is documented in calculation no's 16345-CSCB 171 and 172. The SRT reviewed the design documentation and found it satisfactory. There are no seismic spatial interaction issues related to these tanks.

In general, the SRT determined that none of the above discussed generic issues posed any concern at CPSES and they were well addressed in design documents. Therefore, based on the reduced scope SMA review and strong background of seismic qualification effort at CPSES, an appropriate plant walkdown screening and evaluation sheets were prepared.

This is included in Appendix B.

All the equipment listed in SSEL was listed in the walkdown checklists for respective rooms of Seismic Category I buildings.

The general arrangement drawings were reviewed to determine the equipment locations. Seismic Qualification packages and support/anchorage calculations were reviewed to ensure that the seismic qualification of SSEL equipment has been properly and adequately established. Applicable station drawings were reviewed to ascertain mounting details of the equipment under consideration.

Various piping system isometric and line diagrams were reviewed in order to locate valves listed in the SSEL and to collect information necessary to verify seismic qualification of the valves.

In general, items included in the SSEL were prescreened as follows prior to performing field walkdown investigations:

- Items were grouped by area and entered into walkdown evaluation forms (checklists).
- The Seismic Qualification packages of equipment were reviewed by the SRT when deemed appropriate.
- The SRT also verified that an anchorage calculation was performed and reviewed the calculation on representative and unique items.

After assembling walkdown packages field reviews were performed in coordination with operations and radiation personnel.

5.6 Seismic Margin Walkdown

Seismic Margin Walkdowns were conducted in two phases. The first phase or initial walkdown was to support the selected preferred path and completion of the SSEL. The second phase of the walkdown addressed the seismic capability/seismic margin assessment of the plant.

5.6.1 Initial Walkdown

The initial walkdown was conducted by a member of SRT (System Engineer) and member of plant operations and radiation protection department. The purposes of this walkdown were to:

- Review the components and structures in SSEL for any obvious problems related to the seismic margin earthquake evaluation.

- Locate SSEL equipment in general for its accessibility.
- Arrange access to the equipment for seismic capability walkdown and identify plant areas, with the help of Radiation Protection personnel, that are inaccessible due to high radiation.

All the above objectives were met. Initial field review did not reveal any obvious problems with plant SSEL components and structures.

5.6.2 Seismic Capability Walkdown

With all the pre-walkdown preparatory work in place, the SRT performed the seismic capability walkdowns by rooms in Seismic Category I buildings. The primary focus of these walkdowns was on items included in the CPSES SSEL. The SRT members confirmed during field reviews that SSEL items under review were good representations of plant critical systems and components. The seismic interaction issues and suspended systems such as the piping and raceways were reviewed to verify that no anomalies existed that could lead to unacceptable performance.

The SRT reviewed the SSEL components based on the screening guidelines listed in Appendix F of EPRI NP-6041-SL, Rev. 1. Since the seismic qualification of SSEL items was well established and documented, as a part of the recent design basis activities, field reviews concentrated on field conditions of these items (e.g., presence of cracks in concrete foundation pads, condition of anchorage and other connections and seismic interaction issues etc.). Electrical control panels in control room that were representative of electrical control panels in general were opened to verify mounting of sub-components (e.g. relays, electrical switches etc.) within the cabinet.

In the Diesel Generator area (Safeguards Bldg. Room #84) a detailed walkdown of the room was conducted. In addition to the Diesel Generator Engine Block, other components mounted on the skid, as well as equipment mounted on the floor and walls, were also reviewed. Seismic spatial interaction issues in these rooms were also examined. Seismic qualification of all components was verified by performing a design documentation review; and each item was listed on Walkdown Screening & Evaluation Sheets (checklist). A detailed walkdown inspection was performed for the Diesel Generator Fuel Oil Storage Day Tank (Safeguards Bldg. Rm. #99D), since this is one of the critical items required for operation of the Diesel Generator. Minor concrete shrinkage cracks were observed around the tank foundation. The impact of these cracks was examined and the evaluation established that these cracks have no adverse impact on the tank foundation and anchorage.

Among the group of components that were similar and similarly supported/anchored, one or two representative components were selected for detailed walkdown inspection. Other SSEL items (where there was no access problem due to high radiation or contamination) were field reviewed on the basis of 100% "Walk By". The typical "Walk By" by the SRT involved field review of the area and SSEL equipment in the area to identify outliers. This field review included consideration of important equipment design and construction attributes described in Appendix A of NP-6041, equipment anchorage and seismic spatial interaction. The SRT members also looked for seismic interaction issues such as proper storage of unanchored equipment, housekeeping and any instance of seismically vulnerable support. As a result of these walkdowns the SRT made field observations regarding certain items appearing to have suspect support details. In these cases, sufficient information was collected in the field to evaluate the items. The items were evaluated with the help of their seismic qualification documentation to ensure that the observed critical or suspected details are adequately addressed. Other anomalies such as potential seismic interaction issues were also noted in the walkdown packages and appropriate actions were taken to address them.

Appendix B is the detailed walkdown report which contains an itemized list of walkdown observations and their resolutions.

Where areas and/or components were inaccessible due to high radiation/contamination, the documentation reviews were conducted in place of physical walkdowns. The Seismic/Non-seismic program area matrices were reviewed to ensure that unacceptable interactions did not exist for the SSEL components under consideration. However, 100% of the CPSES seismic category I building areas reviewed as part of the seismic qualification and seismic/non-seismic interaction programs.

5.7 Selection of the Preferred Shutdown Path(s)

As discussed previously, the system analysis that was done for the IPE was used to develop the preferred and alternate paths for shutdown following a seismic event. The event tree analysis in conjunction with the system analysis shows that there are multiple paths available to safely shutdown the plant for the Loss of Offsite Power and Very Small Break LOCA initiating events. These multiple paths are shown in Figure 5.7-1, the CPSES Success Path Logic Diagram.

EPRI NP-6041 provides that for multi-train systems, only one train should be used in a given path. Further, it provides that if a train is used in one success path, the other train should not be used in the alternate path; rather a different system should be used. In general this approach was used for developing the SSEL. Typically train A of multi-train systems was used as the path and no credit was taken for the other train. However it should be noted that the safety systems for CPSES Units 1 and 2 are dual-train systems and as such, they provide additional success paths. These Train B paths are qualified by similarity considerations as a result of qualifying the Train A path. In addition the design of CPSES includes a Turbine Driven Auxiliary Feedwater Pump train with Station Service Water as the long-term water supply. The turbine-driven train is not included in the safe shutdown path but is shown in the SPLD to show that there are multiple paths for safe shutdown for CPSES.

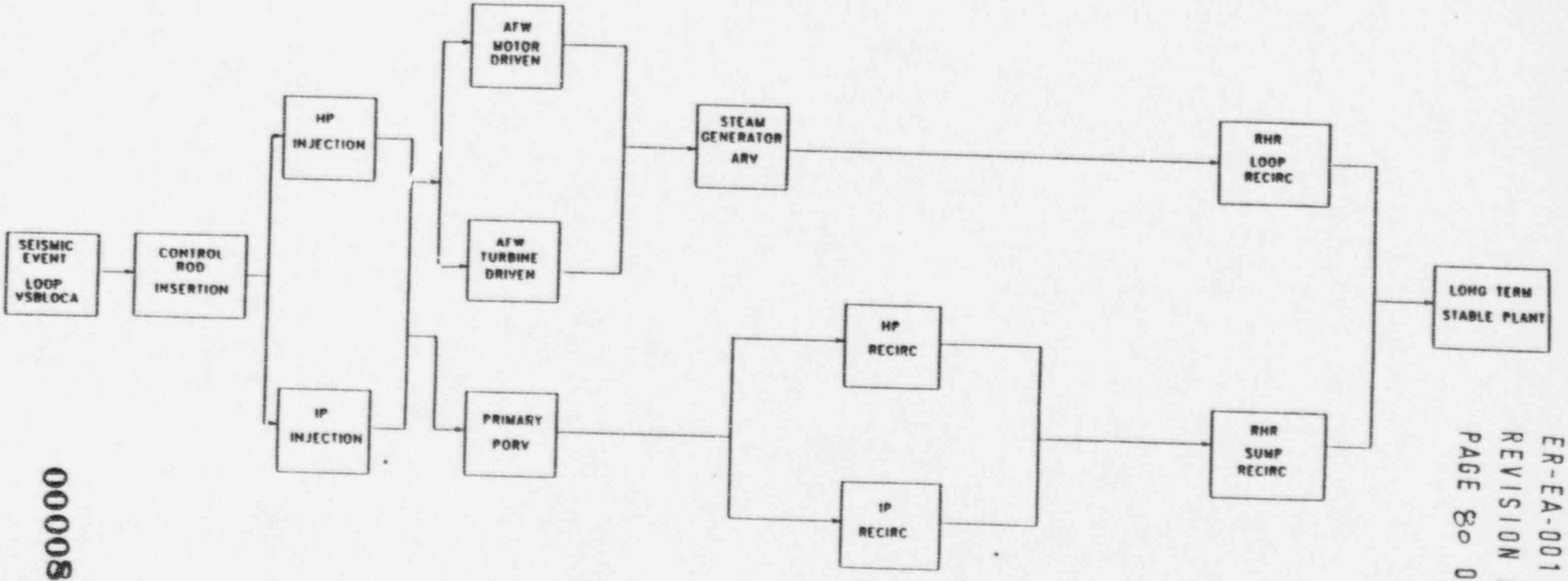
The paths that were chosen are the following:

> The preferred path is High Pressure (HP) injection via the CCPs in conjunction with secondary heat removal via the Motor Driven Auxiliary Feedwater train and Steam Generator ARVs, followed by RHR Loop Recirculation.
>
> The Alternate Path is Intermediate Pressure (IP) injection via the SIPs followed by Feed and Bleed decay heat removal cooling via the Reactor Coolant System PORVs, followed by IP recirculation and finally RHR sump recirculation.

A review of the design basis shows that each of the systems in these paths are designed as seismic category I systems. That is, they are designed to withstand the effects for the SSE. Given this, any of the paths could be used. The primary and alternate paths that were chosen closely parallel the paths that operators would use during recovery from these events.

CPSES SUCCESS PATH LOGIC DIAGRAM

FIGURE 5.7-1



5.8 Containment Review

The purpose and scope of the containment review are discussed in NUREG-1407, 'Procedural and Submittal Guidance for The Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities', Section 3.26. The overall ruggedness of containments and their support systems is generally recognized; however, a containment evaluation for a seismic event to identify any vulnerabilities that involve early failure of the containment function is requested for all plants. For the reduced-scope plant the containment review involved a walkdown of containment related systems to identify any anchorage or seismic spatial interaction problems that can occur.

The containment review to meet this requirement was based heavily on the work done in both the systems and the containment evaluation portions of the IPE. These evaluations were used to identify the components in two systems that should be walked down. These are the Containment Spray system and the Containment Isolation system. The details of this review and the containment systems walkdown are included as Attachment 2 of the SSEL report, Appendix A of this report.

5.9 Peer Review

In order to ensure a high quality study and consistent examination process, TU Electric conducted a detailed review of its Seismic IPEEE study. This review consisted of an in-house review and independent expert review by an outside consultant.

The in-house review was conducted by individuals experienced with IPE results to review the development of the SSEL.

The peer review by outside consultants consisted of two significant parts. First, a review of the program/implementation plan was performed to provide confidence in the adequacy of the scope of the overall program. Second, a review of the results of the program was done including independent observations based on a walkdown of the plant.

These peer reviews resulted in some observations and questions related to various aspects of the program. The observations and questions were resolved with the peer reviewer on a case-by-case basis. The review comments and the disposition of the findings are documented in the program files.

The summary of qualifications for team members and independent reviewer is included in the walkdown report (Appendix B).

6. ASSESSMENTS OF ELEMENTS NOT SCREENED OUT AND ELEMENTS REQUIRING FURTHER EVALUATION

6.1 Structural Capacity Evaluations

CPSES being a reduced scope plant the structural capacity is required to be demonstrated at the safe shutdown earthquake (SSE) level. All Seismic category I as well as Seismic Category II structures at CPSES have been designed per plant FSAR requirements to withstand the loads generated due to the SSE. The SRT reviewed a sample of these calculations to ascertain the adequacy of design.

6.2 Equipment and Subsystem Capacity Evaluations

Similar to structural capacity evaluation described in section 6.7 above, the equipment and subsystems listed in SSEL have been designed to FSAR requirements. In accordance with these requirements all Seismic Category I, safety related equipment subsystems will sustain seismic loads generated due to plant SSE and will remain functional, thus meeting the seismic category criteria of the reduced scope plant seismic evaluation. SRT reviewed a sample of these design calculations to verify the adequacy of design.

6.3 Soils Evaluation

In case of reduced scope plant such as CPSES, soils failure investigation is not required per EPRI NP-7498 and NUREG 1407, Section 3.2.5.4 and hence it was not performed during the course of Seismic IPEEE of CPSES.

7. SUMMARY AND CONCLUSIONS

CPSES is a nuclear plant built to modern era design requirements. As such, all SSEL equipment is designed (per FSAR requirements) to safe shutdown earthquake (SSE) levels, thus the equipment conforms to the seismic demand required for a reduced scope plant. During the course of the seismic IPEEE evaluation, a number of design documents related to this equipment were reviewed to confirm this.

For SSEL equipment, the seismic qualification documentation and certain seismic/non-seismic program design documents were examined and were found technically satisfactory. Plant procedures are in place to enable the design basis to be maintained throughout the operating life of the plant. Additionally, certain generic issues of concern (e.g. Seismic Interaction of Flux Mapping System, Seismic Category I Water Storage Tanks, etc.) were reviewed in light of their applicabilities to CPSES. These are discussed in detail in Section 5.5 of this report.

The seismic capability walkdowns further emphasized the fact that SSEL components are well designed and constructed and in general do not have any adverse field conditions. Seismic spatial interaction relationship was addressed through seismic/non-seismic interaction and commodity clearance programs. The walkdown did result in a few observations. Most observations were minor and involve maintenance type issues. The only two significant observations pertained to a control room proximity issue (presence of unanchored non-plant equipment close to safety related equipment) and an instance of insufficient clearance between an MCC and adjacent cable tray supports. To address both of these issues of the SRT took appropriate follow up action ensuring their satisfactory resolution. All the observations and their resolutions are listed in Table 5.1. of Appendix B.

As a overall assessment of seismic IPEEE evaluation it can be stated that CPSES plant components essential for safe shut-down are designed to sustain design basis earthquake (SSE) loads and have been satisfactorily installed. Thus it was established that SSEL components fully meet the seismic demand requirements for a reduced scope plant.

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38. Electric Power Research Institute, EPRI NP-6041, "A methodology of Assessment of Nuclear Power Plant Seismic Margin" , Revision 1, October 1988

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41. DBD-ME-005, Seismic/Non-Seismic System Interaction Program.

9.0 APPENDICES

Appendix A	Individual Plant Examination of External Events - Seismic, Safe Shutdown Equipment List Report
Appendix B	Comanche Peak Steam Electric Station Unit 1 Seismic IPEEE Walkdown Report

APPENDIX A
OF
ER-EA-001, REV 0

Individual Plant Examination of External Events

SEISMIC

Safe Shutdown Equipment List Report

May 1994

ER-EA-001, REVISION 0
APPENDIX A

Prepared by: Steven A. Karpyak 6/10/94

Reviewed by: Reid A. Letter 6/10/94

Reviewed and Approved by: 6/10/94

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1. Introduction

The purpose of this study is to identify the systems, equipment and components that comprise the Seismic Safe Shutdown Equipment List (SSEL) for Comanche Peak Steam Electric Station (CPSES).

The Nuclear Regulatory Commission (NRC) provided guidance for performing this work in NUREG-1407, 'Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities' (NUREG-1407,Ref.1). In that document, CPSES is identified as being located in a region of low seismicity and is classified as a reduced-scope plant. The document describes the methodologies that are acceptable to the NRC for performing the seismic analysis, including special considerations for reduced-scope plants.

TU Electric chose the Seismic Margin Methodology (SMM) that is based on the EPRI methodology described in EPRI NP-6041, 'A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1)'(NP-6041,Ref.2), for the seismic margin assessment of Comanche Peak Steam Electric Station.

2. Background

Comanche Peak Steam Electric Station Units 1 and 2 are late model Westinghouse Pressurized Water Reactors. As such, the plant systems, structures and components important to safety are designed based on seismic considerations as described in the Final Safety Analysis Report. The Individual Plant Examination for Internal Events (IPE) for CPSES (Ref.3) has been completed and is the basis for much of the work documented in this report.

Since CPSES is categorized as a reduced-scope plant, the review level earthquake is the same as the design basis for the Seismic Category I systems, structures and components, namely the Safe Shutdown Earthquake (SSE). A fundamental consideration in seismic margins evaluations is that systems, structures and components designed for the SSE will survive that event. Given these assumptions and the fact that the design of CPSES provides for safe shutdown following a safe shutdown earthquake, the seismic margin evaluation for CPSES places emphasis on the walkdown of the safe shutdown systems rather than on evaluation of margins. The components in these safe shutdown systems constitute the SSEL. A subset of the SSEL is the list of items that are walked down. The focus of this walkdown is on equipment anchorages and spacial interactions. The seismic margin evaluation/walkdown also applies to containment systems that provide containment integrity and isolation and prevent early failure and containment bypass. However, the SSEL does not include these containment systems. These systems are discussed in the Containment Review report presented in Attachment B of this report.

3. Methodology

3.1 A methodology similar to that described in EPRI NP-6041, Revision 1, Section 3 and Appendix B (Ref.2), was used to identify the systems, equipment and components required to maintain a safe shutdown condition following the seismic margin earthquake.

Section 3 of NP-6041 provides the assumptions and ground rules that govern the selection of systems and equipment for the seismic margin review.

> Off-site power is assumed to be failed due to the Seismic Margin Earthquake and unrecoverable during the 72 hour period of interest.
>
> Path success is defined as the ability to achieve and maintain a stable hot or cold shutdown condition for at least a 72 hour period following the seismic event.
>
> Only seismically induced transient events and small seismically induced primary coolant leakage events (referred to as "small LOCAs") are addressed; i.e.,based upon numerous seismic PRAs, it is assumed that the seismic margin earthquake will not cause large LOCAs. By small leakage it is believed that it is unlikely that one will be able to rule out the possibility of small leaks or failures in small instrument lines. It is judged that the combined leakage is equivalent to a one-inch diameter break.
>
> If one element in the SPLD represents a multi-train system, safety function success is assumed to be measured at the system level, not the train level. In other words, if one train of a system is judged to be seismically rugged (exclusive of a train-specific systems interaction failure), then all trains of that system are considered rugged. This should be valid if the train-wise layout is similar, although train-specific systems interactions problems may make the assumption invalid.
>
> Non-seismic-caused component or system unavailability is not explicitly addressed. This should be reasonable for systems that have multiple and redundant trains but should be treated with caution for single-train with recognized poor availability.
>
> Only systems whose function is to prevent severe core damage from occurring, and their support systems, are evaluated; accident consequence mitigation systems are not in the scope of a seismic margin assessment.

These assumptions were modified somewhat for CPSES, since for the reduced-scope seismic margin assessment, the effects of seismically-induced relay and contactor chatter need not be evaluated (See NUREG-1407). As noted previously, containment systems are not included in the safe shutdown path evaluation, but a containment review was done using the guidelines of NUREG-1407. This evaluation and the associated containment equipment list are contained in Attachment B of this report.

3.2 The methodology for developing the SSEL consists of the following steps:

Identify the plant specific critical safety functions for CPSES

Develop event trees related to the critial safety functions for Loss of Off-site Power (LOOP) and Very Small Break LOCA (VSBLOCA) initiating events

Identify the systems that provide the functions identified in the event trees

Develop the Success Path Logic Diagram and identify both the preferred and alternate success paths for the initiating events, taking into account both operational and systems considerations

Identify important components within these systems that will constitute the SSEL for CPSES

The implementation of these steps is described in detail in the following section. The result of this work is a seismic Safe Shutdown Equipment List (SSEL) for CPSES, Table 5.1.

4. Development of the Safe Shutdown Equipment List

The process outlined in the previous section was used to develop the SSEL for CPSES. Much of the information required in this process was developed as part of the Individual Plant Examination (IPE) and was used directly for this evaluation. For example, the event trees that were developed in the IPE for the LOOP and VSBLOCA were used to describe the plant functions that constitute success for these seismically-induced events. Then the system analysis that formed the basis for the systems portion of the IPE was used to identify the systems required to support these plant functions. Finally, the systems models and basic events were used to identify the major components of these systems. What follows is a detailed discussion of the development of the SSEL.

4.1 Identify the critical safety functions for CPSES

The objective of this step is to indentify the critical safety functions for CPSES. These critical safety functions are described in the FSAR (Ref.4), Section 7.5.1.1.4. These are:

- Subcriticality (Reactivity Control)
- Reactor Coolant System Integrity (Pressure Control)
- Reactor Coolant Inventory Control
- Reactor Core Cooling (Decay Heat Removal)
- Heat Sink (Secondary Heat Removal)
- Containment Integrity*

* Because only safety functions related to preventing core damage are addressed in the seismic margin assessment, containment integrity was not considered in the development of the SSEL. That function is being addressed separately through a walkdown that is focused on containment integrity.

Maintaining these functions is the goal of the Emergency Response Guidelines and the associated sub-tier procedures that are used by the operators following initiating events.

4.2 LOOP and VSBLOCA Event Trees

The objective of this step is to develop event trees for LOOP and VSBLOCA. As noted previously, these are the two events that are assumed to occur as a direct consequence of the seismic margin earthquake. For these initiating events, the event trees developed for IPE were used.

In general, following the occurrence of the reactor trip signal or safety injection actuation signal attributable to the initiating event, it was assumed that the reactor operators follow the actions specified in the Emergency Response Guidelines (ERGs) and Abnormal Conditions Procedures (ABNs).

For all of the initiating events considered, the operators enter EOP-0.0, "REACTOR TRIP OR SAFETY INJECTION" after the reactor is tripped, or required to be tripped. All subsequent operator actions are defined in this ERG or in referenced ERGs. These operator responses form the bases for each branch in the event trees. If the operator response was determined to be critical to the successful recovery from the initiating event, a branch point was required in the event tree. If the operator response required by the procedure could not be performed due to the initiating event, or if the successful completion of the operator action had no bearing on the final success, or lack thereof, or on the recovery efforts, then the response was not represented in the event tree. The success criteria for each branch were included in the branch description. Where possible, these criteria were based on a "best-estimate" plant response rather than a conservative, licensing-basis plant response. Where necessary, the IPE has documented analyses that validate the success criteria.

The accident sequence modeling ended when the plant was placed in a stable state. Thus, a particular path ended if stable HOT STANDBY conditions were attained, even though a cooldown to cold shutdown conditions was eventually required.

The LOOP and VSBLOCA Event Trees are discussed in the following section. These are presented with a textual description of the top events and a discussion of the significant operator responses and success criteria for each branch.

LOSS OF ALL OFF-SITE POWER (X3)

(Event Tree is shown in Figure 4.2-1)

The initiating event is the complete loss of all off-site power and de-energization of both safeguards buses that also leads to a plant trip.

Following the loss of off-site power, the diesel generators start and the essential loads are sequenced onto the 6.9 kV Class 1E buses. No power is supplied to the non-Class 1E 6.9 kV buses by the diesels. The diesels are considered to be successful if they continue to power the buses for 72 hours. At this point it is assumed that off-site power has been restored. (Note that the IPE considered the Diesels successful if they continued to power the buses for 24 hours.)

A loss of off-site power with reactor power at 100% can be thought of as a loss of load. This causes a generator trip, turbine trip, and therefore a reactor trip. Reactor trip is accomplished by opening the reactor trip breakers resulting in the control rods being inserted into the core. Failing this action, CPSES is designed with an emergency boration feature. However, consistent with the recommendations of NP-6041, emergency boration is not considered in this analysis. Both manual and automatic scram features were considered. All of the non-Class 1E 6.9kV buses will be deenergized. The major loads on bus 1A1 are:

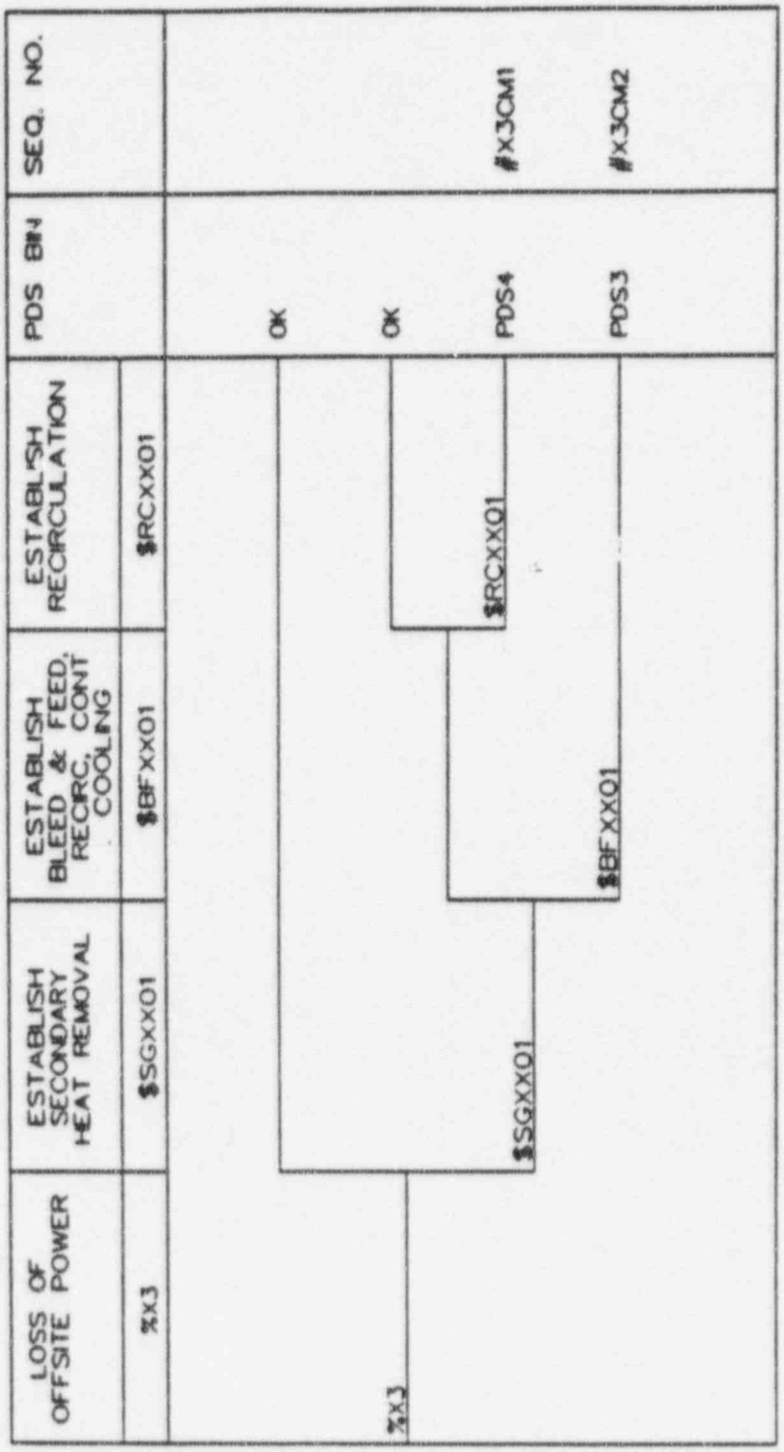
- Heater Drain Pump 1
- Circulating Water Pump 1
- Reactor Coolant Pump 1
- 480 V non-safeguards bus 1B1.

Similar redundant loads are on bus 1A2. The major loads on bus 1A3 are:

- Service Air Compressor 1
- Condensate Pump 1
- TPCW pump 1
- Circulating Water Pump 3
- Reactor Coolant Pump 3
- 480 V non-safeguards bus 1B2

Similar redundant loads are on bus 1A4. The assumption that these buses remain de-energized for 72 hours implies that the Reactor Coolant Pumps are not available to provide circulation--thus the reliance on natural circulation.

Figure 4.2-1--Loss of Offsite Power Event Tree



1) Loss of all off-site power (%X3)

This event was modeled as the simultaneous failure of both the 345 kV and the 138 kV switchyards.

2) Establish Secondary System Heat Removal ($SGXX01)

Following the reactor and turbine trips, the main feedwater regulating valve remains open as it is reacting to the steam generator level and steamflow/feedflow errors. If instrument air is lost, the feedwater regulating valve closes. In addition, the main feedwater isolation valve receives an isolation signal on reactor trip coincident with low T_{avg} of 564þF. Because the N-16 T_{avg} is synthesized from T_{cold} and the neutron (fission) power, T_{avg} falls to T_{cold} within a few seconds following the reactor trip. Finally, one of the first fifteen automatic actions that the reactor operators are required to perform following any reactor trip is to verify that FW isolation has occurred. Failure to isolate main feedwater leads to overfill of a steam generator. The TDAFWP will be disabled if either S/G 1 or 4 overfill. This was modeled in the AF system as a failure of the TDAFWP.

Following the turbine trip, the auxiliary feedwater pumps are automatically started on low steam generator level. All pumps may be started manually either locally or remotely. The auxiliary feedwater system consists of two motor-driven feedwater pumps and a single steam turbine-driven auxiliary feedwater pump. All control and isolation valves between the auxiliary feedwater pumps and the steam generators are normally open, fail-open valves. In addition, the piping and valves between the auxiliary feedwater pumps and the Condensate Storage Tanks are aligned to allow suction from the CST at any time. At least 300 gpm is required for success. This is less than the capacity of any one motor driven AF pump.

Success in this task also includes operator actions required to control the auxiliary feedwater flow to prevent the overfilling or dryout of any steam generator.

It is necessary to establish AF and steam relief to ensure continued core cooling. If the D/Gs have not re-energized the buses, only the TDAFWP will be able to provide flow to the S/Gs. (For the IPEEE seismic margin evaluation, it is not necessary to assume failure of the Diesel Generators, thus the motor driven train is available. The design of CPSES includes both motor driven and turbine driven auxiliary feedwater pumps, thus the TDAFW pump provides an important alternative in the event that the D/Gs are lost. However, the use of the TDAFW pump is not reflected in the SSEL.)

3) Establish Bleed and Feed ($BFXX01)

Upon failure of the AF system (and success of the D/Gs) the operator is required to establish bleed and feed cooling for core heat removal. For purposes of the seismic margin assessment it is not necessary to assume that the AF system fails. What the event tree shows is that either the AF system path or the Bleed and Feed path leads to success. This provides the basis for the primary and alternate paths developed later.

Bleed and feed cooling is performed by opening both of the pressurizer PORVs (one is sufficient for success) while supplying fluid to the RCS from the RWST with centrifugal charging or safety injection pumps. Bleed and feed is continued until cold shutdown conditions are reached or until the secondary heat sink is re-established. If they cannot be established, recirculation is required.

After it has been determined that bleed and feed cooling is required, the operators manually actuate SI, if it is not already actuated. The charging and SI pumps may also be manually started if necessary. The operators verify that the valve alignment is correct. SI and Containment Isolation are then reset to allow the re-establishment of the instrument air and nitrogen supplies. The PORVs are powered by Nitrogen from accumulators to which make up nitrogen is normally isolated. This accumulator will be exhausted after approximately 100 cycles of the PORVs. This number of cycles is not likely to occur due to the fact that the ERGs do not instruct the operator to cycle them, but to keep them open.

In accordance with the BASES for this procedure (FRH-0.1), one centrifugal charging pump or, if the RCS has been somewhat cooled and depressurized during the performance of the previous steps, one safety injection pump is required to be available for feeding the RCS. For that calculation, it was assumed that the operators have 30 minutes to establish bleed and feed.

4) Establish Recirculation ($RCXX01)

As the RWST is depleted, high or intermediate head cold leg recirculation must be established. When the RWST level falls to 40% of span, the operators receive an alarm and the suction of the RH pumps automatically switches from the RWST to the containment sumps. Operator action is required to transfer the suction of the intermediate and high head safety injection pumps from the RWST to the discharge of the RH pumps. For IPE considerations, it is not required that the operators transition to hot leg recirculation (except for large break LOCAs), as the injection phase duration plus the 18 hour time delay dictated by the procedure puts the requirement outside the 24 hour window. However, for IPEEE seismic margin purposes it is assumed that transition to hot leg recirculation is required.

If the operators are unable to transition to recirculation due to unavailability of equipment, they are directed to remain in the injection alignment, but to minimize injection flow, and to limit the amount and duration of containment spray. Also, they are instructed to provide makeup water to the RWST via various sources. For purposes of the IPEEE seismic margin review, plant conditions are assumed to be such that containment spray is not actuated. Upon depletion of the RWST, the operator is be required to realign the ECCS pumps to the containment sump.

VERY SMALL BREAK LOCA (VS)
(Event Tree is shown in Figure 4.2-2)

1) VSBLOCA (%VS)

The initiating event is a very small break LOCA. For the IPE analysis the assumed break has an effective diameter of less than two inches (area less than 3.14 square inches). For the IPEEE seismic margin assessment the assumed break has an effective diameter of one inch.

2) Failure of injection on SBLOCA ($SIXX03)

Success in this event requires the establishment of flow from at least one high head injection pump or one intermediate head pump (IPE Report Volume I, Ref. 14).

3) Establish Secondary Heat Removal ($SGXX01S)

Due to the insufficient amount of sensible heat removal through the break, additional heat removal is required. The primary sink is the secondary system.

4) TDAFWP Runs Until Battery Depletion (EPBATTDEPL)

This event indicates failure of the TDAFWP at 4 hours, due to loss of DC power that leads to overfill of the steam generators and failure of the TDAFWP. As noted above, for the IPEEE failure of DC power need not be assumed and the TDAFW pump is not part of the success path, only MDAFW pumps are used.

5) Establish Bleed and Feed ($BFXX01)

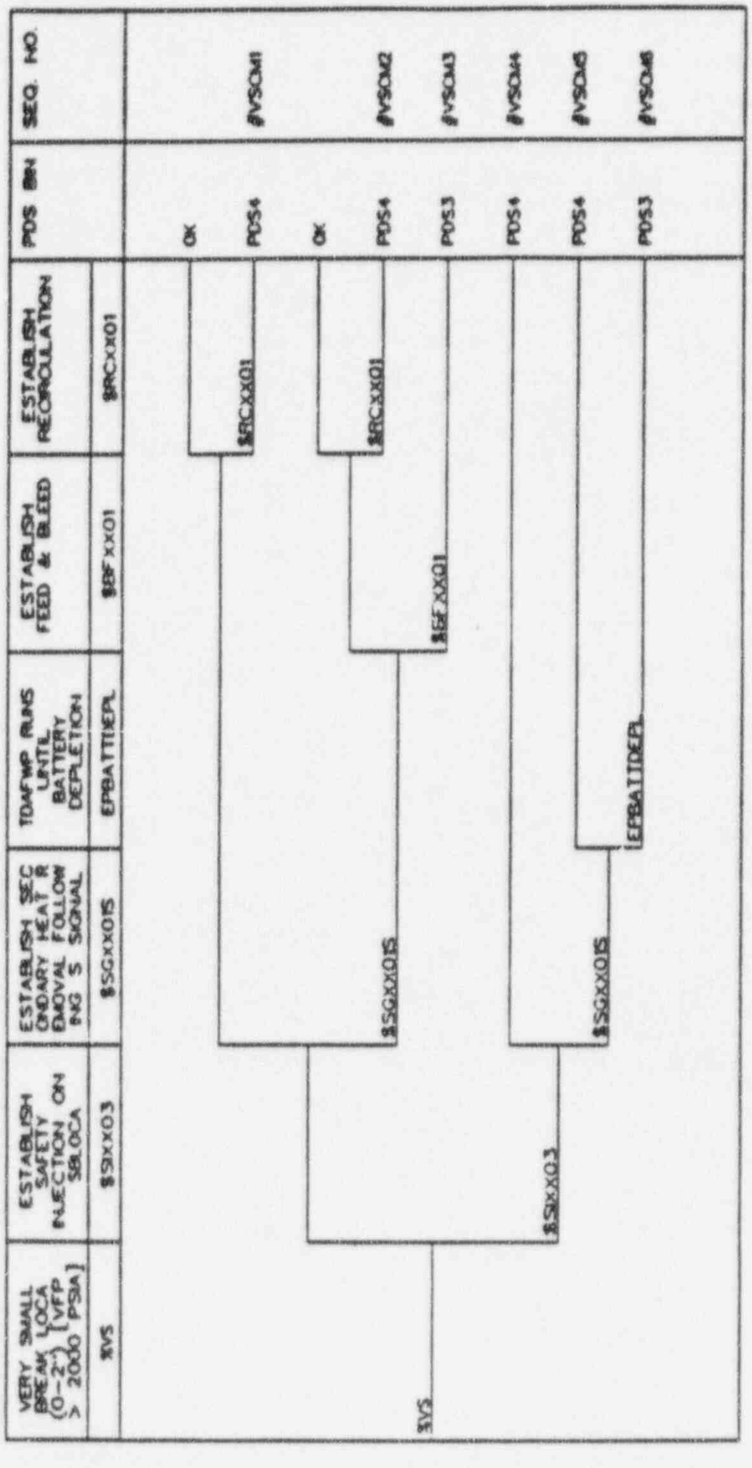
If the secondary heat removal systems are unsuccessful, the operator is required to establish bleed and feed. The ECCS injection system must have already been successful. Therefore, this event is limited to the operator actions required to open the PORVs.

6) Establish Recirculation ($RCXX01)

The operator is required to swap ECCS pump suction to the containment sump when the RWST reaches 40%. This could be from entering bleed and feed, or due to containment spray actuation. For purposes of the IPEEE seismic margin review, plant conditions are assumed to be such that containment spray is not actuated. Upon depletion of the RWST, the operator is be required to realign the ECCS pumps to the containment sump.

These event trees show that the plant has diverse means of achieving safe shutdown following a seismically-induced LOOP and VSBLOCA. The discussions of the events included general descriptions of the systems that are required to achieve success. These general descriptions are expanded in the sections that follow.

Figure 4.4-2--VSBLOCA Event Tree



4.3 Systems Review

The objective of this step is to describe the systems that provide the safety functions identified previously and to expand the system analysis introduced in the development of the event trees. For the IPE an extensive system analysis was performed to determine which systems must be available to assure that the functions identified in each event tree are achieved. Several systems were modeled and systems descriptions and simplified P&IDs were developed for each system. These are included here modified as required for IPEEE seismic margin assessment purposes.

4.3.1 Systems Modeled

The systems that were modeled in the IPE that are important to the seismic analysis are listed below. It should be noted that some of these systems, namely the Main Steam System downstream of the MSIVs, the Condensate and Feedwater System upstream of the feedwater isolation valves, most of the Containment Spray System and the Instrument Air System upstream of certain isolation valves are not part of the seismic safe shutdown path. However, a description of these systems is provided here for information. The systems discussed are:

- Component Cooling Water (CC) System
- Auxiliary Feedwater (AF) System
- Residual Heat Removal (RH) System
- Station Service Water (SW) System
- Containment Spray (CT) System
- Chemical and Volume Control (CS) System
- Reactor Coolant (RCS) System
- Safety Injection (SI) System
- Condensate and Feedwater (CF) System
- Main Steam (MS) System
- Reactor Protection (ES) System

    Reactor Trip System

    Engineered Safeguards Features Actuation System

- Electric Power (EP) System
- Instrument Air (CI) System
- Safety Chilled Water (CHS) System

For the IPE, system notebooks were prepared for each of these systems. These describe the system functions, success criteria, interdependencies, human interactions and the system logic. A discussion of the system analysis portion of the IPE that is pertinent to the IPEEE seismic margin analysis follows.

4.3.2 System Analysis

This section provides information related to plant systems, hardware and equipment, and system dependencies that are important to the systems analysis. A description and simplified drawings for each of the front-line and support systems that were considered in the study is provided. The functional interdependencies among the various systems are discussed and a dependency matrix for all the front-line and support systems is provided. This information formed the basis for the development of the system fault trees used in the IPE analysis. The details of the development and use of the system information and support system interfaces are included in the individual system notebooks.

4.3.2.1 System Descriptions

This section provides descriptions and simplified drawings for each of the front-line and support systems that were considered in the IPE. Each system description includes a discussion of the functions of the system and the relationship of the various sub-systems in fulfilling these functions, system actuation signals, principal operator interfaces and system success criteria.

4.3.2.1-1 Component Cooling Water System

System Description

The simplified diagram of the Component Cooling Water (CC) system is shown in Figure 4.3.2.1.1. The system consists of two separate, independent, and full capacity pump trains. Each pump train supplies cooling to an associated safeguards loop which services safety-related components. Each safeguards loop contains a pump, a heat exchanger cooled by SW, associated piping, valves, and instruments. The non-safeguards loop services non-safety related components and is supplied by either safeguards loop.

The CC pumps are powered from separate Class 1E 6.9kV buses. Each pump room is equipped with an associated room cooler unit to ensure that the ambient pump room temperature remains within the equipment qualification limits. The room cooler units are powered by Class 1E 480V MCCs and are supplied chilled water by the CH system. The pump seals and bearings are self-cooled. Pump miniflow protection is provided by pneumatically operated, fail-closed valve 1-FV-4536/4537. The miniflow valves are automatically closed by an "S" signal.

Surge tank CP1-CCATST-01 is provided to accommodate system expansion or contraction. Makeup to the tank is supplied automatically by the Reactor Makeup Water or Demineralized Water systems. The tank is separated into two train-related compartments that are connected via independent surge lines to their associated CC pump suction lines.

A normally closed cross-tie line connects the trains at the pump discharge and at the discharge of the Unit 1 heat exchangers. Each line has a piping connection that allows the Unit 1 and Unit 2 systems to be cross-tied. In addition, a third cross-tie line exists between the Unit 1 Train B pump suction and the Unit 2 Train A pump suction.

The safeguards loops connect to the non-safeguards loop via the pump suction and heat exchanger discharge cross-tie lines. Each cross-tie line contains two normally open motor-operated valves. Flow is delivered to the non-safeguards loop by safeguards loop A/B via motor-operated valve 1-HV-4514/4515 and is then returned to its respective pump suction line via motor-operated valve 1-HV-4512/4513. The four cross-tie valves are automatically closed by a "P" signal or a low level signal from the CC surge tank. Stroke testing of the valves is completed quarterly. In addition, the valves are isolated during quarterly ESFAS slave relay actuation testing. The non-safeguards loop motor-operated isolation valves (1-HV-4524,4525,4526,4527) are also automatically closed by a "P" signal.

During normal operation, one CC pump will be in service supplying both safeguard loops and the non-safeguards loop. The other CC pump is placed in standby. The pumps are operated on a bi-weekly rotation schedule. The system is designed such that one CC pump can provide adequate cooling to all normal system loads (non-safeguards and both safeguards). The pumps are started by any of the following signals:

- Low discharge pressure in the opposite train
- "S" signal
- "BOS"
- Low discharge pressure in the opposite SW train

The success criteria for the CC system is that of providing adequate cooling to the following components pertinent to the IPEEE seismic margin study:

Safeguards loop

- CT pump seal cooler (2 per loop)

- RH pump seal cooler
- RH heat exchanger
- CH chiller unit condenser
- UPS air conditioning condenser

4.3.2.1-2 Auxiliary Feedwater System

System Description

The simplified diagram of the Auxiliary Feedwater (AF) system is shown in Figure 4.3.2.1.2. The AF system consists of three independent pump trains that take suction from the Condensate Storage Tank (CST) and deliver flow to the steam generators. An emergency water source is available through a cross-tie with the Service Water system. Two of the trains consist of independent branches utilizing motor-driven pumps. The third train consists of one independent branch utilizing one turbine-driven pump. Each train contains a pump, valves, piping, a power supply, and controls. The pump seals and bearings are self-cooled. Failure of the AF system does not result in an initiating event.

Both Motor-Driven Auxiliary Feedwater Pumps (MDAFWPs) take suction from the CST via a common suction line that contains normally locked-open manual valve 1AF-007. Downstream of this valve, the suction line branches and directs flow to the two separate pump trains. The design flow rate of each pump is 570 gpm at 1200 psid. Each of the MDAFWPs normally feeds two steam generators. However, a normally closed interconnection between the pump discharge lines permits the operator to direct flow to any combination of steam generators. Motor-driven pump CP1-AFAPMD-01 normally supplies steam generators 1 and 2. Motor-driven pump CP1-AFAPMD-02 normally supplies steam generators 3 and 4. The pumps are powered from separate Class 1E 6.9kV buses. Each pump room is equipped with an associated room cooler unit to ensure that the ambient pump room temperature remains within the equipment qualification limits. The room cooler units are powered by Class 1E 480V MCCs and are supplied chilled water by the CH system. Both MDAFWPs are actuated by any of the following signals:

- Two out of four low-low level signals from any one steam generator
- Trip of both Main Feedwater Pumps as sensed by low hydraulic pressure
- Anticipated Transient Without Scram (ATWS) signal as sensed by AMSAC
- "BOS"
- "S" signal

The Turbine-Driven Auxiliary Feedwater Pump (CP1-AFAPTD-01) takes suction from the CST through a separate suction line. The pump discharges into individual lines feeding each of the four steam generators. The design flow rate for the turbine-driven pump is 1145 gpm at 1200 psid. The turbine is powered by steam from steam generators No. 1 and No. 4. The steam is supplied to the turbine-driver by two independent steam lines. Each steam supply line is provided with an isolation valve (1MS-144/137) and a check valve (1MS-143/142) to provide redundancy in the event of a MSLB. Each line contains a normally closed, pneumatically operated, fail-open, supply valve (1-HV-2452-1/2). Both steam supply valves open automatically upon receipt of any of the following signals:

- Two out of four low-low level signals from any two steam generators
- "BOS"
- ATWS signal

The normally open, pneumatically operated, fail-open, flow control valves are equipped with safety related air accumulators that allow the valves to be regulated after a loss of instrument air. The MDAFWP control valves differ from the TDAFWP control valves in that they are automatically driven to a full open position on a MDAFWP actuation signal.

Flow limiting orifices are provided downstream of each flow control valve to limit the amount of flow that can discharge from a faulted loop. The orifices in the MDAFWP lines are sized to limit flow to 700 gpm per loop; whereas, the orifices in the TDAFWP lines are sized to limit flow to 680 gpm per loop.

Normally open motor-operated valves are provided for isolation of a faulted loop or steam generator and for containment isolation.

Each steam generator is equipped with a normally open three inch diameter blowdown line that is isolated on AF actuation. A maximum blowdown rate of 17,400 lb/hr is maintained during normal operating conditions. Each line contains a containment isolation valve, blowdown flow equalizing valve, and blowdown isolation valve. Each of these valves is a pneumatically operated, fail-closed valve. Both the containment isolation valve and blowdown isolation valve receive isolation signals on AF actuation.

The following AF system function and its corresponding success criteria is important to the IPEEE seismic margin study:

- Provide 300 gpm to the steam generators
  - Success is defined as operation of at least one motor driven AF pump delivering flow to at least one steam generator.
- Provide AF flow control to at least one steam generator

4.3.2.1-3 Residual Heat Removal System

System Description

The simplified diagram of the Residual Heat Removal (RH) system is shown in Figure 4.3.2.1.3. The RH system consists of two separate, independent, and full capacity trains. Each train contains a pump, a heat exchanger, associated piping, valves, and instruments.

The RH system supports the following operating modes:

- Shutdown Decay Heat Removal (SDHR)
- Low Pressure Safety Injection (LPSI)
- Low Pressure Recirculation (LPR)
- High Pressure Recirculation (HPR)

During the SDHR function, each RH pump takes suction from a separate RC hot leg via two motor-operated valves in series. Motor-driven train A pump TBX-RHAPRH-01 takes suction from hot leg 1 via 1-8701A and 1-8702A. Motor-driven train B pump TBX-RHAPRH-02 takes suction from hot leg 4 via 1-8701B and 1-8702B. Failure of either set of hot leg isolation valves to remain closed during normal operation induces an interfacing systems LOCA initiating event. The hot leg isolation valves have special provisions that allow their power supplies to be switched from their normal supply to the alternate train. This capability allows for emergency RC cooling in the presence of an electrical train failure.

Each pump suction line is also connected to the Refueling Water Storage Tank (RWST) via normally open motor-operated valve 1-8812A/B. The RWST supplies borated water to the RH pumps for the LPSI function. The RH system shares the RWST with the SI, CS, and CT systems. In addition, the RH, SI, and CT systems share RWST isolation valve 1SI-047.

Following depletion of the RWST, the suction of each RH pump is realigned to its respective containment sump for the LPR and HPR functions. The RH and CT systems share the two containment sumps. Each have their own suction piping and isolation valves from the sump. The pumps take suction from their respective containment sump via normally closed motor-operated valve 1-8811A/B. The valves open automatically upon receipt of an "S" signal coincident with a RWST lo-lo level signal. An auto-swap SI reset switch is provided on the main control board to prevent a spurious automatic switchover. The operators are expected to use this reset feature during a prolonged High Pressure Safety Injection (HPSI) phase, thereby, requiring manual operation of the sump isolation valves when switching over to HPR. Manual sump valve operation is precluded by an interlocking circuit that requires the other RH pump suction valves to be closed.

The design flow rate of each RH pump is 3800 gpm at 150 psid. The pumps are powered from separate Class 1E 6.9kV buses. Each pump room is equipped with an associated room cooler unit to ensure that the ambient pump room temperature remains within the equipment qualification limits. The room cooler units are powered by Class 1E 480V MCCs and are supplied chilled water by the CH system. RH pump miniflow protection is provided by motor-operated miniflow stop valve 1-FCV-610/611. These normally open valves are required to automatically open and close to maintain pump flow above the minimum value. The pump requires miniflow protection because for several modes of operation, it is possible to have no net system flow (such as LPSI with high RC pressure). The pump seals are cooled by the CC system; the pump bearings are self-cooled. The RH pumps are automatically actuated by an "S" signal.

Each pump discharges to its respective heat exchanger which is cooled by CC through the shell side. The heat exchanger CC motor-operated isolation valves open partially (approximately 40% of CC design flow) upon receipt of an "S" signal and open fully on a "P" signal. An analysis was completed which concluded that during the LPSI mode, the RH pumps can operate in miniflow without CC to the heat exchanger for two hours.

The piping that connects the RH pumps to the suction of the pumps used for HPR is located downstream of the heat exchanger. Train A pump TBX-RHAPRH-01 delivers flow to the suction of the CCPs. Train B pump TBX-RHAPRH-02 delivers flow to the suction of the SIPs. A cross connect allows either pump to supply flow to both the SIPs and CCPs.

The heat exchanger flow control valve (1-HCV-606/607) is provided to allow the operator to control the RC cooldown rate. The pneumatically operated, fail-open valve is not required during an emergency cooldown because it is acceptable to cooldown the RC at a higher rate. The heat exchanger bypass control valve (1-FCV-618/619) is provided to automatically maintain the total RH flow when the operator is controlling the RC cooldown rate with the heat exchanger flow control valves. This pneumatically operated, fail-closed valve is also not required during emergency cooldown.

Upon discharge from the heat exchanger control valve, flow in each train is routed to two RC cold legs via motor-operated injection isolation valve 1-8809A/B. Train A pump TBX-RHAPRH-01 delivers flow to cold legs 1 and 2. Train B pump TBX-RHAPRH-02 delivers flow to cold legs 3 and 4. The pump discharges are connected via across tie. Each of the cold leg injection lines contains redundant check valves. The RH and SI systems share the downstream check valve in each cold leg injection line.

The RH pump discharge lines are cross-tied via normally open isolation valves 1-8716A,B. This cross-tie line connects the RH pumps to the hot leg injection header via the normally closed motor-operated isolation valve 1-8840. Inside containment the line branches into two lines which connect to RC hot legs 2 and 3. Each of the hot leg injection lines contains redundant check valves. The RH and SI systems share the downstream check valve in each of these two hot leg injection lines.

The following RH system functions and their corresponding success criteria are modeled in the accident sequence analysis and the fault tree models:

- Provide flow to the RC cold legs during LPR
    - Success is defined as operation of at least one RH pump train delivering flow to at least one RC cold leg.

- Provide flow to the RC hot legs during LPR
    - Success is defined as operation of at least one RH pump train delivering flow to at least one RC hot leg.

- Provide flow to the suction of the CCPs and SIPs during HPR
    - Success is defined as operation of at least one RH pump train delivering flow to the suction of the CCPs or SIPs.

4.3.2.1-4 Station Service Water System

System Description

The simplified diagram of the Station Service Water (SW) system is shown in Figure 4.3.2.1.4. The system contains two separate, independent, and full capacity trains. Each train contains a pump, associated piping, valves, and instrumentation. The SW pump suction supply for both units is provided by the Safe Shutdown Impoundment (SSI). A screen wash system, common to both units, is provided to ensure that debris that may be present in the SSI does not reach the suction of the SW pumps. The screen wash system consists of two independent screen wash trains that contain a pump, spray valve, and traveling screen.

The SW pumps are powered from separate Class 1E 6.9kV buses. The SW pump seals are self-cooled. The SW pump bearings are lubricated and cooled by service water taken from the pump discharge line. This line also provides water to the upper motor bearing cooler. Prior to entering the bearings, flow is filtered through two series-parallel strainer sets containing four y-type strainers per set. Flow to the upper motor bearing cooler is provided at the discharge of the first strainer set. If an on-line strainer(s) becomes clogged, flow can be manually switched to the redundant parallel strainer set. The SW system is designed such that miniflow protection is not required for operation of the SW pumps. Technical specifications require the SW pumps and discharge motor-operated valves to be operability tested quarterly. For the duration of the discharge valve testing, the SW pump remains disabled.

All four SW pumps (Unit 1 and 2) are located in the Service Water Intake Structure (SWIS). The SWIS ventilation system ensures that the ambient temperature of the structure remains within the equipment qualification limits. The system consists of eight wall-mounted propeller exhaust fans subdivided into four trains of two. Each train is powered by an independent Class 1E 480V MCC. Each train is thermostatically controlled by a switch which actuates the fans on high area temperature. One train per unit is capable of removing the heat produced by four operating SW pumps.

Each unit has a cross-tie path that connects the SW pump discharge lines. Each cross-tie is isolated by two normally closed redundant manual valves. The two cross-tie paths are connected via a section of piping that contains normally locked-closed manual valve XSW-0006. The cross-tie connection is made between the two redundant isolation valves. This feature enables either train in one unit to be connected to either train in the other unit.

The screen wash system is actuated by high differential level across the traveling screens or by a timed wash signal every four hours. Pneumatically operated, fail-open, spray valve X-LV-4288/4289 opens upon receipt of an actuation signal. Once the spray valve is fully open, its associated screen wash pump starts and pressurizes the spray header. When the traveling screen setpoint is reached, its associated motor will start and rotate the screen for a minimum of 2.5 revolutions. The pumps and traveling screens are powered by associated Class 1E 480V MCCs that are capable of being powered by either unit. The pumps and screens are tripped by an "S" signal if being powered by the affected unit.

The supply to the suction of screen wash pumps CPX-SWAPTS-01,02 can be provided by either unit's train A/B SW pump. During normal operation, only one train A screen wash header supply valve, 1SW-0008 or 2SW-0008, and one train B supply valve, 1SW-0013 or 2SW-0013, will be open. The screen wash pump suction and discharge headers are capable of being cross-tied by opening normally closed manual valves XSW-0012 and XSW-0011, respectively.

The SSI is an enclosed cove of Squaw Creek Reservoir. A seismically qualified dam maintains a minimum water level within the SSI. The SSI contains no surface traffic. The only debris postulated to reach the traveling screens is floating debris. Technical specifications require the SSI to be maintained at a level of 770'. The normal SSI level is 775'. The SW system is designed to operate with a minimum level of 769'6" at the onset of a DBA. Consequently, the SW pump suction supply would begin to become endangered if floating debris were to block 5'6" below the water surface. Since the probability of this scenario occurring is relatively small, the screen wash system is not expected to be necessary following a DBA.

The SSI contains a water supply sufficient to allow simultaneous safe shutdown and cooldown of both units (with one unit in a LOCA) for a minimum of 30 days without makeup. During normal operation, makeup to the SSI is provided by the Circulating Water system which diverts a continuous supply of water to the SWIS. This method of makeup also promotes circulation within the SWIS.

Both trains of SW will normally be in service although only one train is necessary to support normal plant operation. The pumps are actuated by the following signals:

- Low discharge pressure in the opposite train
- "S" signal
- "BOS"
- Train related CC pump start

The success criteria for the SW system is that of providing adequate cooling to the following components pertinent to the IPE study:

- CC heat exchanger
- CCP lube oil cooler
- SIP lube oil cooler
- CT pump bearing coolers(not required for safe shutdown)
- DG jacket water cooler

- Emergency AF water supply

4.3.2.1-5 Containment Spray System

The Containment Spray system is not required for safe shutdown for the events considered in the seismic margin evaluation. This system is important to mitigating releases from the containment following an accident and is included in the containment evaluation discussed in the main report. The system description is included here for information.

System Description

The simplified diagram of the Containment Spray (CT) system is shown in Figure 4.3.2.1.5. The CT system consists of two separate, independent, and full capacity trains. Each train contains two spray pumps, one heat exchanger, two chemical eductors, spray headers, spray nozzles, associated piping, valves, and instrumentation. Failure of the CT system does not result in an initiating event.

The function of the CT system is to maintain the containment pressure within its design limit after the following initiating events:

- Loss-Of-Coolant-Accident (LOCA)
- Main Steam Line Break (MSLB) inside containment
- Feedwater Line Break (FWLB) inside containment

The CT pumps are provided with suction lines from both the RWST and the containment sumps. Thus, the system is capable of providing the containment with short term (Injection Mode) and long term (Recirculation Mode) cooling. Each pump train takes suction from the RWST via normally open motor-operated valve 1-HV-4758/4759. The CT system shares the RWST with the SI, RH, and CS systems. In addition, the RH, SI, and CT systems share RWST isolation valve 1SI-047. Following depletion of the RWST, the suction of the CT pump train is switched over to its respective containment sump via normally closed motor-operated valve 1-HV-4782/4783. The RH and CT systems share the containment sumps.

The design flow rate of each CT pump is 3000 gpm at 260 psid. The design of the system is such that both pumps per train are required to deliver enough flow to the spray header to remove an adequate amount of heat from the containment atmosphere. The pumps are powered from separate Class 1E 6.9kV buses. Each CT pump room contains two spray pumps and two associated room cooler units to ensure that the ambient room temperature remains within equipment qualification limits. The room cooler units are powered by Class 1E 480V MCCs and are supplied chilled water by the CH system. CT pump miniflow protection is provided by normally open motor-operated valve 1-FV-4772-1/4772-2/4773-1/4773-2. The pump seals are cooled by the CC system; the pump bearings are cooled by the SW system. The pumps are actuated by a "S" signal. The pumps also receive a confirmation start signal when containment pressure reaches the hi-3 ("P") setpoint. Following the

"S" signal, the pumps operate in miniflow until the hi-3 setpoint is reached. At that point, the spray header isolation valves 1-HV-4776,4777 open and the miniflow valves close.

Each pump is equipped with as associated chemical eductor which delivers a 28-30 weight percent solution of sodium hydroxide to the pump suction. One chemical additive tank provides gravity flow to each eductor venturi section. Success of the chemical addition system is not considered essential for system operation.

Each pump discharges to a header which routes flow to its respective heat exchanger. The CC system supplies cooling to the shell side of the heat exchanger via normally closed motor-operated valve 1-HV-4574/4575. The valve is opened automatically by a "P" signal. Upon discharge from the heat exchanger, flow is routed to the spray header via normally closed motor-operated isolation valve 1-HV-4776/4777. The spray headers route flow to ring headers located in four regions of the containment. Each header contains a restriction orifice which balances the flow to each ring.

CT system functions were not considered in the SSEL development portion of the IPEEE seismic margin study. These will be evaluated separately.

4.3.2.1-6 Chemical and Volume Control System

System Description

The simplified diagram of the Chemical and Volume Control System (CS) is shown in Figure 4.3.2.1.6. The system consists of three separate and independent pump trains. Two of the trains contain Centrifugal Charging Pumps (CCPs); the third train contains a Positive Displacement Charging Pump (PDP). Each train consists of its respective pump, associated piping, valves, and instruments.

The CS system provides the following functions during normal and emergency operating modes:

- Maintain RC water inventory
- Maintain seal water injection flow to the Reactor Coolant Pumps (RCPs)
- Provide high head flow to the RC cold legs during the injection and recirculation modes of the ECCS
- Control RC boron concentration and provide an emergency boration capability

RC level is maintained by a continuous bleed-and-feed process between the RC and CS systems. RC flow is letdown from cross-over leg 1 and routed to the Volume Control Tank (VCT) where the boric acid concentration is altered as required. The VCT supplies water to the suction of the charging pumps via motor-operated valves 1-LCV-112B,C. Normal charging flow is provided by the PDP (TBX-CSAPPD-01). One of the CCPs will be used during periods of PDP maintenance. Normally, the flow rate of the PDP is controlled automatically by the pressurizer level control system. Failure to maintain pressurizer level requirements will result in a reactor trip. Upon discharge from the charging pump, a portion of the flow is routed to the RCP seals and the remainder is injected into the RC via the charging flow header. Flow is normally injected into RC cold leg 4 via charging valve 1-8146. An alternate charging path is provided to cold leg 1 via normally closed charging valve 1-8147. Both charging valves are pneumatically operated, fail-open valves. The charging flowpaths are swapped each refueling to distribute the flow induced erosion.

The relative distribution of flow between the charging flow header and the RCP seals is controlled by fail-open pressure control valve 1-HCV-182. Failure of the valve in the open position diverts all charging pump flow to the RC and thus, results in a loss of seal injection. However, failure to provide seal injection does not result in direct seal failure because the thermal barrier coolers provide the seals with a redundant source of cooling.

The normal PDP flow rate is 87 gpm at a nominal pressure of 2395 psid. The pump is powered by a Class 1E 480V MCC. The pump room is equipped with an associated room cooler unit to ensure that the ambient pump room temperature remains within the equipment qualification limits. The room cooler unit is powered by a Class 1E 480V MCC and is supplied chilled water by the Ventilation Chilled Water system. The pump bearings are cooled by the CC system; the pump seals are self-cooled. The pump is equipped with suction and discharge dampers to reduce fluid pulsations and head loss. The pump is automatically tripped on an "S" signal.

The design flow rate of the CCPs is 150 gpm at 2515 psid. The pumps are powered from separate Class 1E 6.9kV buses. Each pump room is equipped with an associated room cooler unit to ensure that the ambient pump room temperature remains within the equipment qualification limits. The room cooler units are powered by Class 1E 480V MCCs and are supplied chilled water by the CH system. CCP miniflow protection during normal operation is provided by a common recirculation line that directs flow to the seal water heat exchanger via motor-operated valves 1-8110,8111. The pump bearings are cooled by the SW system; the pump seals are self-cooled. The pumps are automatically started by an "S" or "BOS" signal. Technical specifications require the pumps to be tested quarterly. During the test, the pumps are unavailable because the normal pump discharge flowpath is isolated and the pumps operate in recirculation.

A high point vent is provided at the suction of each charging pump. The three vents connect to a common header that is routed to the VCT via fail-closed solenoid valves 1-HV-8220,8221. These vent valves are automatically closed on an "S" signal. Failure to isolate the vent path could result in gas binding of the CCPs (which are started by "S") caused by diversion of the VCT gas blanket.

Following an "S" signal, the CCPs provide high head flow to the RC cold legs and continue to maintain seal injection to the RCPs. During the injection mode of the ECCS, the RWST supplies the suction of the CCPs via redundant motor-operated valves 1-LCV-112D,E, while the normal suction supply valves from the VCT (1-LCV-112B,C) are closed. In addition, the normal charging flow header isolation valves (1-8105,8106) and CCP miniflow valves (1-8110,8111) are closed and each pump's alternate miniflow valve (1-8511A/B) to the RWST is opened. The CS system shares the RWST with the RH, SI, and CT systems.

Upon discharge from the CCPs, flow is routed to the RC cold legs via redundant normally closed motor-operated isolation valves 1-8801A,B. Each cold leg injection line contains a locked-in-place throttling valve (1-8810A,B,C,D). The valve positions are determined by a flow balance test that is performed during each refueling outage.

Following depletion of the RWST, the suction of the CCPs is aligned to the discharge of the RH pumps. RH Train A directly supplies the CCP suction header via normally closed motor-operated valve 1-8804A. RH Train B indirectly supplies the CCP suction header via normally closed motor-operated valve 1-8804B and piping that connects to the suction of the Train A SIP. This piping contains normally open motor-operated isolation valve 1-8924 and redundant normally closed motor-operated isolation valves 1-8807A,B. SIP suction isolation valves 1-8923A,B connect the piping directly to the Train B RH pump. Recirculation supply valves 1-8804A,B are precluded from opening by an interlocking circuit that requires both the CCP and SIP miniflow lines to be isolated.

The emergency boration function is provided by redundant boric acid transfer trains. Each train consists of a tank, pump, associated piping, valves, and instruments. Each Boric Acid Transfer Pump (BATP) takes suction from its respective Boric Acid Tank (BAT) and delivers flow to the charging pump suction header via normally closed motor-operated valve 1-8104. In addition, a gravity drain line is capable of providing 100 gpm from each BAT (CPX-CSATBA-01/02) to the charging pump suction header with the VCT isolated. Technical specifications require the BATs to be maintained at a 50% level, with a boron concentration of 7000 ppm, and a solution temperature of 65þF. The BATPs (TBX-CSAPBA-01/02) are powered from separate Class 1E 480V MCCs. They are small canned-motor centrifugal pumps located in large open rooms. The heat generated by the operation of the pumps is not expected to impact the ambient temperature of the rooms. The pump seals and bearings are self-cooled. Technical specifications require the pumps to be tested quarterly. During the testing of each pump train, the opposite train is disabled to prevent excessive boration of the RC.

The following CS system functions and their corresponding success criteria are modeled in the accident sequence analysis and the fault tree models:

- Provide seal injection flow to each RCP
    - Success is defined as operation of at least one charging pump delivering 8 gpm to each RCP seal.
- Provide high head injection flow to the RC cold legs
    - Success is defined as operation of at least one CCP delivering flow to at least two RC cold legs.

- Provide high head recirculation flow to the RC cold legs
  - Success is defined as operation of at least one CCP delivering flow to at least two RC cold legs.

4.3.2.1-7 Reactor Coolant System

System Description

The simplified diagram of the Reactor Coolant System (RC) is shown in Figure 4.3.2.1.7. The system consists of four heat transfer loops connected in parallel to the reactor pressure vessel. Each loop contains a steam generator, a reactor coolant pump (RCP), associated piping, valves, and instrumentation. In addition, the system is equipped with a pressurizer, a pressurizer relief tank (PRT), interconnecting piping, and instrumentation necessary for operational control.

The pressurizer controls the RC pressure by reducing pressure variations caused by contraction and expansion of the reactor coolant. A water/steam equilibrium is maintained within the pressurizer vessel to absorb coolant volume surges caused by changes in reactor coolant temperature. The volume changes are transmitted to the pressurizer through the pressurizer surge line which is connected to the loop 4 hot leg. Failure to maintain RC pressure within the operational control band will result in a reactor trip.

During pressure increases, the pressurizer spray system injects subcooled water into the pressurizer steam space to condense the steam and lower the pressure. The spray line is connected to RC loops 1 and 4 at the discharge of the RCPs. RCP TBX-RCPCPC-01 or 04 supply flow to the spray line via normally closed pressurizer spray valve 1-PCV-455B/C. The valves are pneumatically operated, fail-closed valves. A continuous spray flow of approximately 1 gpm is maintained by spray bypass valve 1RC-8051/8052. This flow prevents the surge line and spray line from being thermally shocked upon spray actuation.

For pressure increases that are beyond the capacity of the pressurizer spray system, the pressurizer is equipped with two power-operated relief valves (1-PCV-455A,456) and three self-actuated safety relief valves (1-8010A,B,C). The discharge of the power-operated relief valves (PORVs) and safety relief valves (SRVs) is routed to the PRT where it is condensed and cooled. The PORV setpoint is 2335 psig; the lowest SRV setpoint is 2485 psig. The PORV setpoint is established at a much lower value to prevent the undesirable opening of the SRVs.

The PORVs are connected to a single port that is attached to the pressurizer upper head. A motor-operated block valve (1-8000A/B) is provided to isolate the PORV in the event the valve fails to close or if excessive seat leakage occurs. Each valve is equipped with an accumulator tank that is sized to ensure that the PORV can be cycled 100 times in a 10 minute period. The tanks are supplied with high pressure nitrogen regulated down to the required operating pressure for the PORV actuators. A relief valve (1SI-0176/0177) provides protection against over-pressurizing the actuators due to regulator failure. If the accumulator supply is exhausted, the operators can recharge the tank via the Nitrogen Gas system. The PORVs fail closed on loss of nitrogen or control power.

During pressure decreases, flashing of saturated water in the pressurizer and generation of steam by electrical heater operation maintains reactor pressure. The pressurizer houses 78 individual heater elements with a combined capacity of 1800 kW.

The RCPs are powered by non-Class 1E 6.9kV buses. Each pump motor is equipped with an air-to-water heat exchanger to cool the ventilating air. The CC system supplies cooling water to the heat exchangers. The pump upper and lower radial bearings are also cooled by the CC system. Failure to maintain motor or bearing cooling necessitates a manual reactor trip to prevent RCP damage. The pump seals are provided with redundant cooling mechanisms. During normal operation, seal injection provided by the CS system flows down past the thermal barrier heat exchanger into the RC. This flow acts as a buffer to prevent reactor coolant flow from entering the radial bearing and seal regions. Should a loss of seal injection occur, hot reactor coolant will flow up past the thermal barrier. However, the CC supplied to the thermal barrier heat exchanger cools any reactor coolant flowing past the heat exchanger prior to it reaching the lower radial bearing or seal packing regions. Failure of both cooling mechanisms will ultimately lead to a gross seal failure resulting in a seal-LOCA.

The following RC system functions and their corresponding success criteria are modeled in the accident sequence analysis and the fault tree models:

- Provide automatic pressure relief on high RC pressure
    - Success is defined as operation of 1 of 2 PORVs or 2 of 3 SRVs. Operation is defined as opening when RC pressure reaches the valves' respective setpoint and closing when the pressure drops below the setpoint.
- Provide a discharge pathway during bleed and feed operation
    - Success is defined as manual actuation of 1 of 2 PORVs.

4.3.2.1-8 Safety Injection System

System Description

The simplified diagram of the Safety Injection (SI) system is shown in Figure 4.3.2.1.8-1. The SI system provides intermediate head flow to the RC cold and hot legs during the injection and recirculation modes of the ECCS. Additional injection flow is provided to the RC via the four accumulator tanks (see Figure 4.3.2.1.8-2). The SI system consists of two separate, independent, and full capacity trains. Each train contains a pump, associated piping, valves, and instruments. Failure of the SI system does not result in an initiating event.

The Safety Injection Pumps (SIPs) take suction from the RWST via normally locked-open motor-operated valve 1-8806. The RWST supplies borated water to the SIPs during the injection mode. The SI system shares the RWST with the RH, CS, and CT systems. In addition, the RH, SI, and CT systems share RWST isolation valve 1SI-047.

Following depletion of the RWST, the suction of the SIPs is aligned to the discharge of the RH pumps. Pump TBX-SIAPSI-02 takes suction directly from RH Train B via normally closed motor-operated valve 1-8804B. Pump TBX-SIAPSI-01 takes suction indirectly from RH Train A via normally closed motor-operated valve 1-8804A and piping that connects to the CCP suction header. This piping contains normally open motor-operated isolation valve 1-8924 and redundant normally closed motor-operated isolation valves 1-8807A,B. SIP suction isolation valves 1-8923A,B allow either of the RH pumps to deliver flow to the suction of both the CCPs and SIPs. Recirculation suction supply valves 1-8804A,B are precluded from opening by an interlocking circuit that requires both the CCP and SIP miniflow lines to be isolated.

The design flow rate of each SI pump is 425 gpm at 1165 psid. The pumps are powered from separate Class 1E 6.9kV buses. Each pump room is equipped with an associated room cooler unit to ensure that the ambient pump room temperature remains within the equipment qualification limits. The room cooler units are powered by Class 1E 480V MCCs and are supplied chilled water by the CH system. SIP miniflow protection is provided by normally open motor-operated valve 1-8814A/B. The discharge of each miniflow valve is routed to a common return header that directs flow back to the RWST. The header contains normally locked-open motor-operated isolation valve 1-8813 which provides a redundant miniflow path isolation capability. Following a LOCA, the SI system will operate in miniflow until RC pressure drops below the SIP shutoff head of 1537 psi. The pump bearings are cooled by the SW system; the pump seals are self-cooled. The pumps are automatically started by an "S" signal.

The discharge piping of each SIP routes flow to the cold leg injection header via normally open motor-operated cross-connect isolation valve 1-8821A/B. The injection header contains normally locked-open isolation valve 1-8835 which delivers flow to the four RC cold legs via injection line throttling valves 1-8822A,B,C,D. These manual valves are locked-in-place in a position that equalizes flow among the four flow paths. The valve positions are determined by a flow balance test that is performed during each refueling outage. Each of the cold leg injection lines also contains redundant check valves. The RH and SI systems share the downstream check valve in each cold leg injection line.

The discharge of each SIP is also routed to two RC hot legs via normally locked-closed motor-operated valve 1-8802A/B. Train A pump TBX-SIAPSI-01 delivers flow to hot legs 2 and 3. Train B pump TBX-SIAPSI-02 delivers flow to hot legs 1 and 4. Each of the hot leg injection lines contains locked-in-place throttling valve 1-8816A/B/C/D and redundant check valves. The throttling valve positions are also determined by a flow balance test that is performed during each refueling outage. The RH and SI systems share the downstream check valve in hot legs 2 and 3.

The accumulators are set to inject borated water when RC pressure drops below 600 psig. Each accumulator tank discharges through a separate line into a RC cold leg. Each discharge line contains two check valves and a normally locked-open motor-operated isolation valve (1-8808A/B/C/D). System interlocks ensure that each isolation valve is open above 1960 psig (P-11 setpoint). A pressurized nitrogen cover gas is maintained in each tank in order to drive the tank contents into the cold leg once RC pressure drops below the tank pressure. The accumulators are demonstrated operable in accordance with technical specifications at least once per 12 hours. Technical specifications require the accumulators to be maintained at an indicated level between 39-61% (of 13" span), a boron concentration between 1900-2200 ppm, and a cover gas pressure between 623 and 644 psig.

The following SI system functions and their corresponding success criteria are modeled in the accident sequence analysis and the fault tree models:

- Provide intermediate head injection flow to the RC cold legs
    - Success is defined as operation of at least one SIP delivering flow to at least two RC cold legs.
- Provide intermediate head recirculation flow to the RC cold legs
    - Success is defined as operation of at least one SIP delivering flow to at least two RC cold legs.
- Provide intermediate head recirculation flow to the RC hot legs
    - Success is defined as operation of at least one SIP delivering flow to at least two RC hot legs.

4.3.2.1-9 Condensate and Feedwater System

System Description

The simplified diagram of the Condensate and Feedwater (CF) system is shown in Figure 4.3.2.1.9. The CF system utilizes a twin shell main condenser to provide the heat sink for the main turbine exhaust and for the steam dump system. The condensed steam, along with water from the low pressure feedwater heater drains and the FW pump turbine auxiliary condensers, is collected in the main condenser hotwell. The hotwell provides condensate storage equivalent to that required for five minutes of operation at maximum load.

The condensate pumps take suction from the hotwell and discharge to a common header which splits into a Condensate Polishing system supply line and bypass line. The condensate pumps are powered by non-1E 6.9kV buses. The pump bearings are cooled by the Turbine Plant Cooling Water (TPCW) system. The pump seals are cooled by the Demineralized Water system. Pump miniflow protection is provided by pneumatically operated, fail-open valve 1-FV-2239. The pumps are tripped on a lo-lo condenser hotwell level signal and a low lube oil pressure signal from both FW pumps.

Full condensate flow is normally routed to the condensate polishing system. Flow is divided among supply lines to the main and auxiliary gland steam condensers and a gland steam condenser bypass line. These lines rejoin into a common header which is then divided into two paths, each passing in succession through the tube side of the drain cooler and the 6th and 5th stage feedwater heaters. The flows are recombined and then divided to pass through the 4th and 3rd stages of feedwater heating.

The discharge from these stages is then combined with the heater drain pump discharge at the FW pump suction line. During normal operation, the condensate pumps supply approximately 65% of the FW pump suction, with the heater drain pumps supplying the remaining 35%. However, the condensate pumps are capable of providing 96% of full feedwater flow during transients.

Each FW pump is driven by a dual admission turbine. During startup, high pressure steam is delivered to the turbine via the steam equalization header. At power, the high pressure source is isolated and the MSRs supply the turbine. Each FW pump turbine is supplied with its own lubrication system. The system is comprised of two AC lube oil pumps, one DC lube oil pump, and two lube oil coolers cooled by TPCW. Seal injection is provided to the FW pumps by the condensate system via a piping connection made at the outlet of the gland steam condenser bypass line. Each FW pump is provided with a separate seal injection line that consists of two filter trains and a temperature control valve. Pump miniflow protection is provided by pneumatically operated, fail-open valve 1-FV-2289/2290. The FW pumps are tripped upon receipt of an "S" signal or a steam generator hi-hi level signal.

The FW pumps discharge to a common header which splits into two trains of high pressure feedwater heating. Flow from these stages is recombined and routed to the main feedwater manifold. The discharge from this manifold is then directed to the individual steam generator feedwater flowpaths. Each flowpath contains a manual isolation valve, flow element, feedwater control valve, check valve, and feedwater isolation valve. Each flowpath also contains a preheater bypass line and a feedwater control valve bypass line.

The preheater bypass line connects upstream of the feedwater isolation valve and discharges to the steam generator auxiliary nozzle. Each line contains a manual isolation valve, check valve, and fail-closed pneumatic valve. Prior to entering the auxiliary nozzle, flow is routed through two series check valves located inside containment. Each AF system steam generator flowpath connects to FW system piping upstream of the two check valves, outside containment.

The feedwater control valve bypass line is primarily used during power ascension up to approximately 25% load. The line contains a feedwater control bypass valve and associated maintenance isolation valves. At power, the feedwater control valves regulate the flow to the steam generators. The control valves and bypass valves, as well as the preheater bypass valves, are pneumatically operated, fail-closed valves equipped with redundant solenoid valves to ensure rapid closure, when required

The feedwater isolation valves are hydraulically operated with redundant solenoids provided to bleed the hydraulic fluid from the valve operator, causing the valves to trip closed within five seconds. The valves fail-as-is on loss of power to the solenoids.

To isolate main feedwater, redundant ESFAS feedwater isolation signals are sent to the feedwater control and bypass valves, preheater bypass valves, and feedwater isolation valves. The feedwater isolation signal is generated by any of the following:

- Steam generator hi-hi level
- "S" signal
- Reactor trip coincident with low average RC temperature (T_{avg})

Although main feedwater is isolated on a reactor trip coincident with low T_{avg}, the condensate and feedwater pumps operate in recirculation and consequently can be used if the AF system fails. In order to re-establish main feedwater, manual operation of the feedwater control bypass and preheater bypass valves is required.

4.3.2.1-10 Main Steam System

System Description

The simplified diagram of the Main Steam (MS) system is shown in Figure 4.3.2.1.10. The MS system transports steam produced in the four steam generators to the high pressure turbine. A main steam line is connected to the top of each steam generator. Each steam line contains an Atmospheric Relief Valve (ARV), five safety valves, and a Main Steam Isolation Valve (MSIV). Downstream of the MSIV, each steam line has a connection to the equalization header. The MS system also provides separate steam supplies to the TDAFWP via connections to main steam lines 1 and 4, made upstream of the ARVs.

The steam dump system is designed to bypass 40% of total main steam flow around the main turbine to the main condenser when turbine steam demand during a transient is less than the steam generator output. The steam dump valves are capable of being modulated by average RC temperature or steam dump header pressure. The steam dump control mode is chosen by a selector switch located on the main control board. The T_{avg} position permits valve control during operational transients including reactor trips. Steam dump header pressure, measured by 1-PT-507, permits valve control during hot shutdown conditions. The steam dump valves are fail-closed pneumatic valves operated in four banks of three, with bank "A" (1-PV-2369A,B,C) being used during cooldown modes. A steam dump signal is blocked when the main condenser is not available.

The ARVs are designed to operate automatically during steam pressure transients to minimize safety valve lifting. A manual block valve (1MS-026/063/098/134) is provided for each ARV (1-PV-2325/2326/2327/2328) in the event the ARV fails to close or excessive seat leakage occurs. Each

ARV is equipped with an accumulator tank that is sized to permit valve modulation for a minimum of four hours following a loss of Instrument Air. Each accumulator supply line is provided with two check valves in series to prevent backleakage in the event of an Instrument Air system failure. The check valves are tested quarterly by isolating the air supply line and verifying that the accumulator pressure remains constant. The ARVs fail closed on loss of air supply or control power.

The safety valves are designed to collectively pass 105% of the rated flow at a pressure not exceeding 110% of the steam generator design pressure. The set pressures of the individual valves on each steam line are staggered at different pressures in order to minimize chattering during valve operation.

The MSIVs (1-HV-2333A,2334A,2335A,2336A) are provided to prevent the uncontrolled blowdown of more than one steam generator following an MSLB. The valves are designed to stop flow in either direction within five seconds after receipt of an actuation signal. The valves are operated by a hydraulic control system coupled to a nitrogen accumulator. The accumulator stores the energy required for closing the valve in the form of compressed nitrogen gas. Each valve is equipped with an air-operated pump that supplies hydraulic fluid to the chamber below the valve actuator piston. As the chamber becomes pressurized, the actuator piston is forced upward against accumulator gas pressure. To close the MSIV, two redundant solenoid valves open to drain the hydraulic fluid and allow the compressed nitrogen to drive the actuator shut.

Prior to entering the high pressure turbine, flow in each main steam line is routed through a turbine stop and control valve. The valves are hydraulically operated and are combined in a common body. The stop valve is provided to protect the turbine from abnormal operating conditions. The control valve throttles in response to signals from the turbine control system. Both valves are automatically closed by the following signals:

- Reactor trip
- "S" signal
- Steam generator hi-hi level

The following MS system functions and their corresponding success criteria are modeled in the accident sequence analysis and the fault tree models:

- Provide main steam isolation
    - Success is defined as isolation of the MSIV in the faulted steam generator line or isolation of the remaining three MSIVs.

It should be noted here that the Main Steam piping down stream of the MSIVs is not Seismic Category I and therefore there is no assurance that this piping will survive the seismic event. For this reason the boundary is established at the MSIVs and not at the stop and control valves. On an extended LOOP the operator shuts the MSIVs and the bypass valves manually per procedure. As a backup to this, MSLB is sensed and the MSIVs are shut automatically. The pressure detectors are included in the SSEL. The ARV for steam generator 1 is included as the cooldown path.

4.3.2.1-11 Circulating Water System

The Circulating Water System description is provided for information.

System Description

The simplified diagram of the Circulating Water (CW) system is shown in Figure 4.3.2.1.11. The CW system consists of four pump trains. Each train contains a pump, associated piping, valves, and instrumentation. The Circulating Water Pump (CWP) suction supply for both units is provided by Squaw Creek Reservoir (SCR). Water from the SCR flows through steel bar trash racks and a screen wash system prior to entering the Circulating Water Intake Structure (CWIS). The screen wash system consists of two 50% capacity screen wash pump trains, one spray valve, and six traveling screens.

The CWPs are powered by separate non-1E 6.9kV buses. When off-site power is lost, these pumps trip. The non-1E 6.9kV buses remain de-energized during the entirety of this event and therefore no success criteria were considered for the CW system in the IPEEE seismic margin study.

4.3.2.1-12 Reactor Protection System

System Description

The simplified diagram of the Reactor Protection System (ES) is shown in Figure 4.3.2.1.12. The (ES) is comprised of two functionally defined subsystems, the Reactor Trip System (RTS) and the Engineered Safeguards Features Actuation System (ES), that perform two major functions. The RTS system automatically trips the reactor whenever critical plant parameters reach specified limits. The ESFAS system activates equipment necessary to maintain the reactor in a safe shutdown condition. Spurious operation of either system results in a reactor trip.

The (ES) consists of two separate and independent Solid State Protection System (SSPS) cabinets which are located in the Control Room. Each cabinet is an assembly of four smaller cabinets arranged on a common base. The cabinets are designated as the input, logic, output #1, and output #2 cabinets. The input cabinet consists of four instrument channels provided signals from four separate channel cabinets. These four channels feed both trains, and are powered by 1E 118 VAC panels. The signals received by the individual channels are provided by process instruments measuring vital station parameters. The channels process all inputs via normally energized relays that de-energize to close contacts that input signals to the logic cabinet where the coincidence logic is performed (i.e. 2/3, 2/4). Individual logic cards inside the cabinet then provide signals to both the RTS and ESFAS subsystems.

The RTS subsystem is comprised of two reactor trip breakers arranged in series which carry power from the rod drive motor-generator sets to the Rod Control system power cabinets. The Rod Control system distributes the power among the individual Control Rod Drive Mechanisms (CRDMs). If power is interrupted to the CRDMs, the rods will drop into the core resulting in a reactor trip. A bypass breaker in parallel with each trip breaker allows on-line testing of the trip breakers. An interlocking circuit prevents the bypass breaker and the reactor trip breaker, or both bypass breakers from being closed simultaneously. The SSPS logic cards supply signals to the undervoltage (UV) and shunt trip coils of the reactor trip breakers. When a trip signal is sent, actuation of either coil causes the breakers to open. The UV coils de-energize to actuate, whereas, the shunt trip coils require 125 VDC power to actuate.

The ESFAS subsystem consists of the SSPS output #1 and #2 cabinets. The SSPS logic cards transmit signals to master relays. The master relays then provide signals to multiple slave relays. The slave relays then send actuation signals to various ESF components.

Instrument calibration checks are performed routinely during plant operation. In general, loss of an individual instrument due to testing, maintenance, or power supply failure places the associated channel in the fail-safe or tripped position. The exceptions are the "P", Containment Phase "B", and RWST/Containment sump isolation valve switchover signals which require power to be transmitted. In addition, the SI and Blackout Solid State Sequencers, which load the required equipment sequentially onto their respective Class 1E buses following each signal, require power to operate.

The following is a list of specific ESFAS actuation signals, their associated functions, and the success criteria that were considered in the IPEEE seismic margin study:

- Safety Injection ("S")
  - Generate a reactor trip signal
  - Actuate ECCS (CCPs, SIPs, RH pumps, and associated valves)
  - Actuate the ECCS support systems (SW, CC, CH)
  - Start the MDAFWPs
  - Start the diesel generators

- Main Steam Isolation
  - Isolate all four main steam lines by closing the associated MSIVs

- Feedwater Isolation
  - Isolate FW by closing the feedwater isolation valve and preheater bypass valve in each line

- AF Actuation
  - Establish AF flow to the steam generators

- RWST/Containment Sump Automatic Switchover
  - Automatically open the containment sump to RH pump suction valves 1-8811A,B

- Blackout ("BOS")
  - Actuate the following equipment subsequent to a Loss of Off-site Power:
    - CCPs
    - SW, CC, CH pumps
    - AF pumps
    - 6.9kV switchgear room cooler units
    - Battery room exhaust fans

- Control Room Emergency Recirculation
  - Initiate the emergency recirculation mode of the Control Room HVAC system

4.3.2.1-13 Electric Power System

System Description

The Electric Power (EP) system is comprised of the off-site power distribution system and the inside distribution system, which consists of AC and DC power systems. The simplified diagram of the off-site power system, AC power system, and DC power system is shown in Figure 4.3.2.1.13-1,-2,-3, respectively.

Off-site Power System

The off-site power system is comprised of two physically and electrically independent switchyards that provide preferred and alternate power sources to the safety-related systems of both units. The preferred power source for the Unit 1, 6.9kV safeguards buses is the 345kV switchyard via startup transformer XST2. The preferred power source for Unit 2, 6.9kV safeguards buses is the 138kV switchyard via startup transformer XST1. The alternate source for Unit 1 is transformer XST1 (138kV SWYD) and the alternate source for Unit 2 is transformer XST2 (345kV SWYD).

The 138kV switchyard consists of two buses, East and West, fed by two network transmission lines. The DeCordova line feeds the West bus via breaker CB 7020. The Stephenville line feeds the East bus via breaker CB 7050. The 138kV East and West buses are tied together through breakers CB 7030 and CB 7040, which also feed startup transformer XST1.

The 345kV switchyard incorporates a two bus scheme fed by four network transmission lines and each unit's main generator circuit. The four substation lines and their associated bus connections are listed below. The Comanche Switch line is not listed because it is an outgoing feeder only.

- Benbrook, West bus
- DeCordova 1, East bus
- Venus 2, West bus
- Parker 1, East bus

The 345kV East and West buses are tied together through Unit 1 main generator breakers CB8000 and CB8010, Unit 2 main generator breakers CB8020 and CB8030, and breakers E6 and W6, which also feed start-up transformer XST2, station service transformer 1ST, and spare transformer XST1/2.

The network transmission lines from the various substations converge on the CPSES site via four physically independent transmission corridors. One corridor contains the 138kV and 345kV circuits from DeCordova and the 345kV circuit from Benbrook. The DeCordova 1 and Benbrook lines share a double circuit tower line from DeCordova to CPSES. The 138kV DeCordova line parallels this 345kV double circuit tower line. The circuits do not cross each other within the DeCordova-CPSES corridor. The second transmission corridor contains the 345kV Venus 2 circuit. The third corridor contains the 345kV Comanche Switch and 138kV Stephenville circuits. The fourth corridor contains the 345kV Parker 1 circuit.

Disconnect switches are located on either side of all the switchyard breakers and on the feeder lines to and from the transformers. The disconnects that feed transformers XST1, XST2, 1ST, and XST1/2 are motor-operated with associated handswitches located in the control room. The remainder of the switches are manual and must be operated from the switchyard. The disconnects can only be operated when the line is de-energized.

Inside Power Distribution System

The AC and DC power systems are divided into Class 1E and non-Class 1E distribution systems. The AC systems are further subdivided into the following four distribution levels:

- 6.9kV
- 480V
- 208/120V
- 118V

The DC systems are further sub-divided into the following voltages:

- 125V
- 125/250V
- 24/48V

Non-Class 1E AC Distribution System

The 6.9kV distribution system consists of four unit buses and one common bus. During normal operation, the unit buses are powered by their respective main generator via unit auxiliary transformer 1UT/2UT. The common bus is powered from either unit station service transformer (1ST, 2ST). Following a loss of voltage to one of the unit buses, an attempt is made to automatically fast or slow transfer to the off-site source. The Unit 1 off-site source is the 345kV switchyard via 1ST; Unit 2 is supplied by the 345kV switchyard West bus via 2ST. A fast transfer will be blocked if the alternate power supply voltage or phasing is not correct or the transfer does not take place within 0.25 seconds. In the event of an unsuccessful fast transfer, a slow transfer can be achieved provided that the normal supply breaker has opened and all feeder breakers from the affected bus have been tripped (which occurs automatically after the fast transfer is blocked). Control power to the 6.9kV switchgear is supplied by the 125 VDC system.

Each 6.9kV bus (unit and common) feeds an associated 480V distribution system bus. Each 480V unit bus is provided with an alternate supply breaker fed from another bus from the same unit. The normal and alternate supply breakers are interlocked such that both cannot be closed simultaneously. The 6.9kV and 480V switchgear are housed in the same room. Electrical area cooling is provided to the switchgear room by the Ventilation Chilled Water system.

Each 480V bus supplies power to several 480V Motor Control Centers (MCCs) located in various rooms throughout the plant. Each common MCC is equipped with an automatic transfer unit (ATU) supplied by a preferred and alternate source of power (one source from each unit). The ATUs preclude one MCC from being powered by both units. The 480V MCCs is transformed to feed the 208/120 VAC distribution system and supplies the 125 VDC distribution system battery chargers.

The 118V Uninterruptible Power Supply (UPS) system is comprised of four distribution panels. Each panel is powered by an associated inverter or from a bypass transformer through a 120 VAC distribution panelboard. Both 118 VAC panel feeder breakers are manually operated and interlocked to prevent paralleling of the sources. Each inverter is normally supplied by a 480V MCC source with a 125 VDC bus providing input power on loss of AC voltage.

Class 1E AC Distribution System

The 6.9kV distribution system consists of two independent safeguards buses corresponding to two trains of safety-related equipment. Each bus is provided with a preferred and alternate off-site power source and a diesel generator. In the event that the preferred off-site source is lost, an attempt is made to automatically slow transfer to the alternate source. If the alternate source is not available, the diesel generator will then start and supply the bus. After the bus is re-energized by either the alternate off-site source or the diesel generator, the loads required during a LOOP mode are started in a pre-programmed sequence by the Blackout Sequencer. Control power to the 6.9kV switchgear is provided by the Class 1E 125 VDC system.

Each 6.9kV bus feeds two 480V distribution system buses. The train related bus pairs are tied via normally open bus tie breakers. The tie breakers are interlocked with the normal bus feeder breakers to prevent paralleling of the 6.9kV-480V transformers. The train related 6.9kV and 480V switchgear are housed in the same room.

The switchgear rooms are provided with normal and emergency ventilation systems. During normal operation, two half capacity ventilation fans supply air cooled by the Ventilation Chilled Water system to both switchgear rooms via a common plenum. Each switchgear room is also equipped with an emergency ventilation system comprised of two full capacity room cooler units that are started automatically upon receipt of an "S" or "BOS" signal. The room coolers and ventilation fans are powered by Class 1E 480V MCCs. The room cooler units are supplied chilled water by the CH system.

Each 480V bus feeds several 480V MCCs located within safety class structures throughout the plant. Common safety-related loads are powered by Class 1E MCCs fed from each unit via an ATU. The supplies are interlocked to ensure that power is being provided by only one unit. The ATU breakers are supplied by a train related bus from each unit.

The 480V MCCs is transformed to feed the 208/120 VAC distribution system and the 125 VDC distribution system battery chargers. The 120 VAC system consists of one distribution panel per train. Each panel supplies one local distribution panel and provides an unregulated power supply to its train related 118V UPS systems.

The 118V UPS system consists of four independent distribution panels (2 per train). Each panel is powered by its respective inverter supply or a standby 120 VAC unregulated power supply fed from a bypass transformer. The tie is through a manual transfer switch consisting of two circuit breakers that are interlocked to prevent paralleling of the sources. Each inverter is normally supplied by a 480V MCC with alternate power provided by a 125 VDC bus. In the event the preferred and alternate supplies are unavailable, a third source is automatically provided by the same 120 VAC source that feeds the panelboard.

The (ES) 118V UPS system consists of four distribution panels (2 per train) corresponding to four SSPS instrument channels. Each panel is powered by an associated inverter or by a 120 VAC panelboard. Each inverter is fed by a 480V MCC and a 125 VDC bus. The 480V power from the MCC is administratively turned off to eliminate spiking problems.

The train related components for both UPS systems are housed in the same room. The UPS area air conditioning system provides ventilation for the UPS rooms in both units. The system is comprised of two separate, independent, and full capacity air conditioning (AC) trains. Each AC unit feeds into a common ventilation chase which, in turn, feeds all four UPS rooms. This arrangement allows for either AC unit to serve all areas of the system. Each AC unit is provided with a condensing unit which is cooled by the CC system. The AC units are powered by common Class 1E 480V MCCs. During normal operation, one AC train is in service. The standby train is automatically started by an

"S" signal, "BOS", or failure of the operating unit.

Each diesel generator set is equipped with auxiliary systems which provide fuel oil, cooling water, starting air, lubricating oil, and combustion air. Each diesel generator is housed in a separate room provided with a ventilation system consisting of four exhaust fans powered by Class 1E 480V MCCs. Each diesel is equipped with two independent starting circuits that require a separate Class 1E 125 VDC power supply to actuate. In addition to starting following a total LOOP to its respective bus, each diesel automatically starts upon receipt of an "S" signal and remains operating in a ready-to-load condition. The diesel and its associated subsystems are operability tested on a monthly basis. Prior to testing, the diesel is placed in the maintenance mode to support pre-run checks.

The fuel oil transfer system consists of a fuel oil storage tank, two full capacity fuel oil transfer pump trains, and a fuel oil day tank. The day tank provides fuel to the suction of the engine driven fuel oil pump and the backup motor-driven fuel oil booster pump. In the event the transfer system is unavailable, the day tank is equipped with an emergency fill line. Technical specifications require the day tank and storage tank to be maintained at capacities that correspond to three hours and seven days of continuous operation at full load, respectively. Each diesel generator fuel oil transfer system is operability tested quarterly. During preparation for each individual transfer pump test, both transfer pumps are disabled. The transfer pumps are powered by Class 1E 480V MCCs.

The closed loop jacket water cooling system is provided to dissipate the heat generated by various engine components. The SW system provides the heat sink for the jacket water cooler. After an emergency start, the engine is capable of operating without SW for 15 minutes.

Non-Class 1E DC System

The system is comprised of three independent 125V systems, a 125/250V system, and a 24/48V system. One 125V system provides the alternate power supply for the UPS system to the Emergency Response Facility (ERF) computer. The system consists of a battery, two battery chargers (one spare), and a bus. In addition to the 118 VAC UPS system, the battery system provides power to one DC distribution panel.

Two 125V systems are provided for control room emergency lighting for each unit. Each system consists of a battery, battery charger, fusible switch, lighting panel and contactor.

The 125/250V system consists of two 125V batteries, three 125V battery chargers (one spare), and a 125/250V bus. A partial list of the loads powered by this system include the main turbine emergency bearing oil and seal oil pumps, the main feedwater pump turbine emergency lube oil pumps, and the plant computer.

The 24/48V system provides power for main turbine control and instrumentation. The system consists of two 24V batteries, two 24V battery chargers, and a 24/48V bus.

Class 1E 125V DC System

The 1E 125 VDC system is comprised of four independent buses (2 buses per train). Each bus is fed by an associated battery and two full capacity battery chargers powered by 480V MCCs supplied from separate 480V buses. The train related battery chargers and associated buses are located in the UPS rooms and are cooled by the UPS area air conditioning system. The two battery charger feeder breakers are mechanically interlocked such that only one charger remains connected to the bus at any time. Each bus feeds a 118 VAC UPS inverter, an SSPS instrument channel inverter, and local distribution panels. One bus from each train feeds a common distribution panel (XED1-1, XED2-1). The common panels are fed from each unit via an automatic transfer switch which prevents paralleling of the sources.

In the event of a Station Blackout, each battery is capable of carrying the essential load continuously for a period of four hours. Each set of train related batteries is located in a separate room. A separate exhaust system is provided for each battery room. The exhaust system consists of two full capacity exhaust fan trains. The exhaust fans are powered by Class 1E 480V MCCs. During normal operation, one exhaust fan train is in service. The standby fan is automatically started by an "S" signal, "BOS", or failure of the operating train.

4.3.2.1-14 Instrument Air System

The IPE assumes that the Instrument Air System is either available or can be recovered following the events modeled. Though this system is not safety related, it aids the operator considerably in recovery from various events. In addition, the system is not seismic Category I; therefore, it cannot be assumed to be operable following a SSE. However, the piping system is typically seismic Category II and the major equipment is generally rugged and located in seismic Category I structures, thus it is possible that the system could be recovered in part.

No credit was taken for recovery in this evaluation. The design of CPSES assumes the loss of Instrument Air and provides safety related air receivers and associated piping and valves as a backup for safety related functions. This safety related portion is considered part of the particular system it serves and in the IPE this portion was typically modeled with that system.

System Description

The simplified diagram of the Instrument Air (CI) system is shown in Figure 4.3.2.1.14. The system consists of two unit air compressor trains with their associated prefilters, afterfilters and aftercoolers, air receivers, and air dryers. In addition to the two unit trains, there are two spare compressor trains common to both units. Loss of the CI system will directly lead to a reactor trip.

The unit lead compressor train is a rotary compressor CP1-CICACO-02 with integral inlet filter/silencer, an air receiver, and an air dryer. The designated unit backup train is a reciprocating compressor CP1-CICACO-01 with filter/silencer, external aftercooler CP1-CIMSAC-01, an air receiver, and an air dryer. One of the spares is a complete train consisting of rotary compressor CPX-CICACO-02, an air receiver, and an air dryer. The other spare is reciprocating compressor CPX-CICACO-01 with associated external aftercooler CPX-CIMSAC-01 that uses the air dryer system of either unit backup train.

The discharge line from each compressor is connected to an aftercooler (which are integral to the rotary compressors). From the aftercooler, air is then routed to its dedicated air receiver tank. The common reciprocating compressor discharges air from its aftercooler to normally closed pneumatic valves 1/2-HV-3476 that direct the air to either backup unit air receiver (CP1/2-CIATAR-01). Upon discharge from the air receiver, air is then routed to a prefilter. From the prefilter, flow is directed to the air dryer inlet manifold. The air is then passed through a four-way valve that controls the flow through the active and regenerating towers. From the air dryer discharge, the air is sent to the afterfilter inlet manifold which directs air to the filter in service. Upon discharge from the afterfilter, flow is delivered to the main supply header which then routes air to the various plant buildings.

The Unit 1 distribution system supplies the Unit 1 and common buildings; the Unit 2 distribution system supplies only the Unit 2 buildings. Two normally closed cross-tie lines connect the unit and spare rotary compressors. Manual valves 1CI-677,2CI-677 connect the compressor discharge lines, while, pneumatic valves 1-HV-3464,2-HV-3464 connect the afterfilter discharge lines. The unit reciprocating compressors are cross-tied at the discharge of the air receiver by normally locked-closed manual valve 1CI-050.

The unit reciprocating compressor and external aftercooler are provided with separate cooling lines from the CC system. The CC cooling flowpath to the compressor and aftercooler is shown in Figure 4.3.2.1.14, Sheet 2. Self-actuated pressure regulating valve 1-PCV-4645 controls the flow to both the compressor cylinder jacket and aftercooler. A fail-open solenoid valve on the inlet line to the compressor stops the flow whenever the compressor is not operating. To eliminate potential damage to the compressor from in-cylinder condensation, flow from the aftercooler discharge is diverted to the cylinder inlet via 3-way pneumatic valve 1-TV-4673, upon sensing a low inlet temperature. For additional protection, a self-actuated temperature control valve in the compressor CC discharge line throttles the flow down when temperature drops. The cooling supply for the spare reciprocating compressor and associated aftercooler is provided by the TPCW system.

The unit rotary compressor packages are cooled via the same CC supply header that provides flow to the reciprocating compressors. Once inside the compressor package, the CC flow is split into two headers. One header supplies the oil cooler and intercooler; the other header supplies the aftercooler. The cooling supply for the spare rotary compressor package is provided by the TPCW system.

The unit compressors are powered from associated Class 1E 480V MCCs. The spare compressors are powered from non-1E 480V MCCs. The unit compressors are automatically loaded onto their respective 480V buses after a "BOS". The compressors are then started manually or automatically upon receipt of a low pressure signal from their associated air receiver. The unit compressors are tripped by an "S" signal, thereby, requiring operator action to re-establish the system.

During normal operation, the lead compressor train is continuously in service. If the plant usage exceeds the capacity of the lead compressor, the backup will automatically load when the pressure setpoint is reached in its dedicated air receiver. The common spares are used as follows:

- When a lead compressor is inoperable, the common rotary train is used as the lead compressor for that unit.
- When a backup compressor is inoperable, the common reciprocating compressor is used as the backup for that unit.

4.3.2.1-15 Safety Chilled Water System

System Description

The simplified diagram of the Safety Chilled Water (CH) system is shown in Figure 4.3.2.1.15. The system consists of two separate, independent, and full capacity pump trains. Each train contains a pump, a chiller unit, associated piping, valves, and instrumentation.

Each CH train supplies chilled water to the cooling coils of the fan-coil units provided to ventilate rooms housing ESF equipment. The CH trains are closed loop, with chilled water in continuous circulation. The CH pumps take suction from the loop return header and discharge to the chiller unit's evaporator section. Upon discharge from the chiller unit evaporator, flow is routed to the supply header for distribution to the various fan-coil units. Three normally closed cross-tie lines are provided at the pump suction, pump discharge, and chiller unit discharge. Each cross-tie line contains two redundant manual isolation valves.

The CH pumps are powered from separate Class 1E 480V MCCs. The pump seals and bearings are self-cooled. Technical specifications require the pumps to be tested quarterly; however, the test does not disable the pump. The chiller units are powered by Class 1E 480V buses. The units are automatically started upon actuation of their respective CH pumps. The chiller unit condensers reject heat to the respective safeguards loops of the CC system. The CC flow rate through the condenser is controlled automatically by Water Regulating Valves (WRVs) 1-PV-4552,4553. The WRVs are pneumatically operated, fail-open valves which are modulated according to chiller unit condenser pressure measured by 1-PT-4552,4553. The WRVs are required to be throttled such that the condensing pressure does not drop below a certain value. An accumulator is provided for each WRV to ensure remote throttling capability following a loss of instrument air.

Surge tank CP1-CHATST-01 is provided to accommodate system expansion or contraction. Makeup to the tank is supplied automatically by the Reactor Makeup Water or Demineralized Water systems. The tank is separated into two train related compartments which provide a surge line to their associated CH pump suction line.

During normal operation, one pump will be in service providing chilled water to its respective loop; the other pump is placed in standby. The pumps are operated on a bi-weekly rotation schedule. The pumps are started by any of the following signals:

- "S" signal
- "BOS"
- Start-up of respective CC pump

Success criteria for the CH system is that of providing chilled water to the fan-coil units of the following components:

- 6.9KV switchgear (2 per train)
- MDAFWP
- SIP
- RH pump
- CCP
- CC pump

Figure 4.3.2.1.1: Component Cooling Water System
Sheet 1 of 1

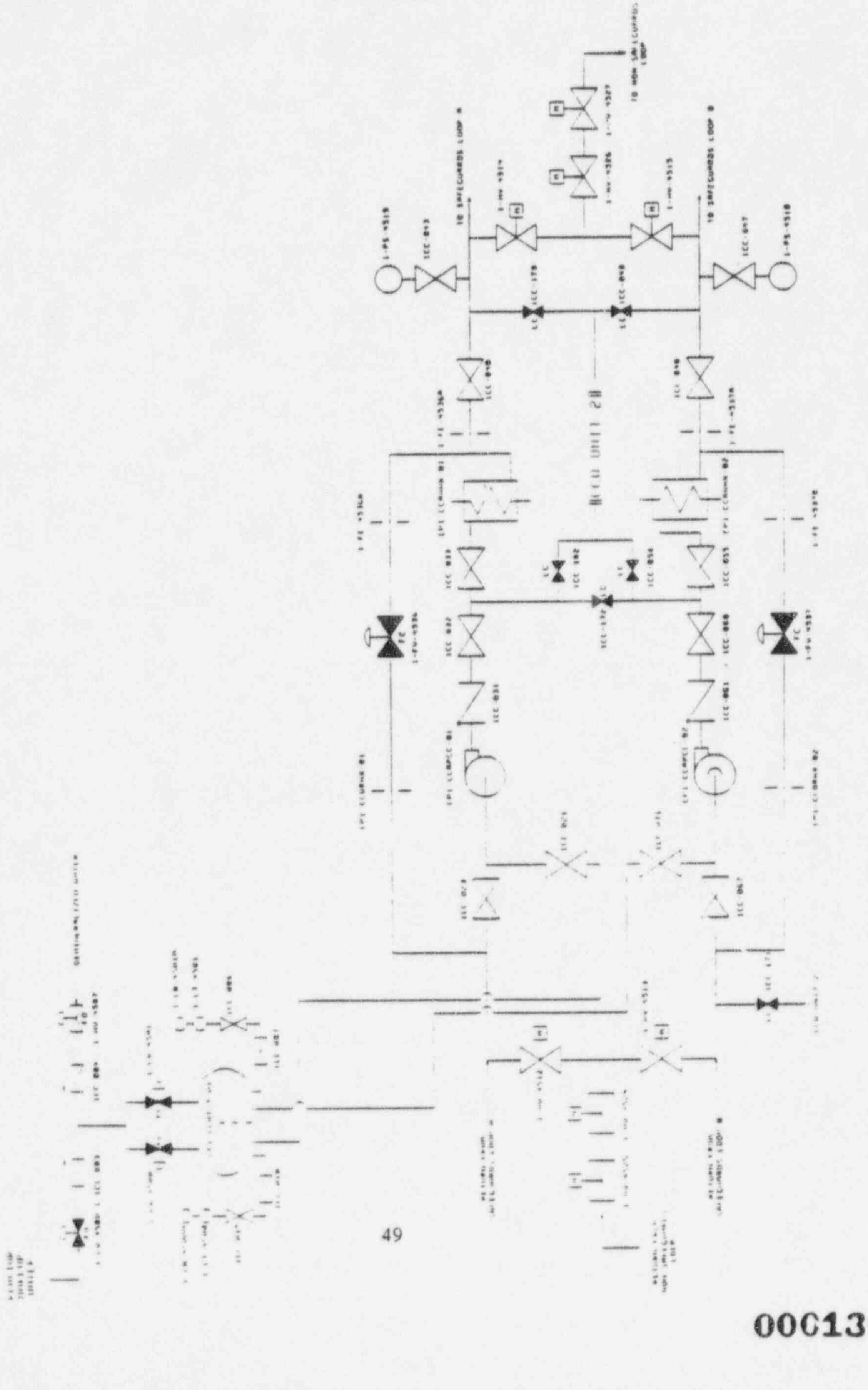


Figure 4.3.2.1.2: Auxiliary Feedwater System
Sheet 1 of 2

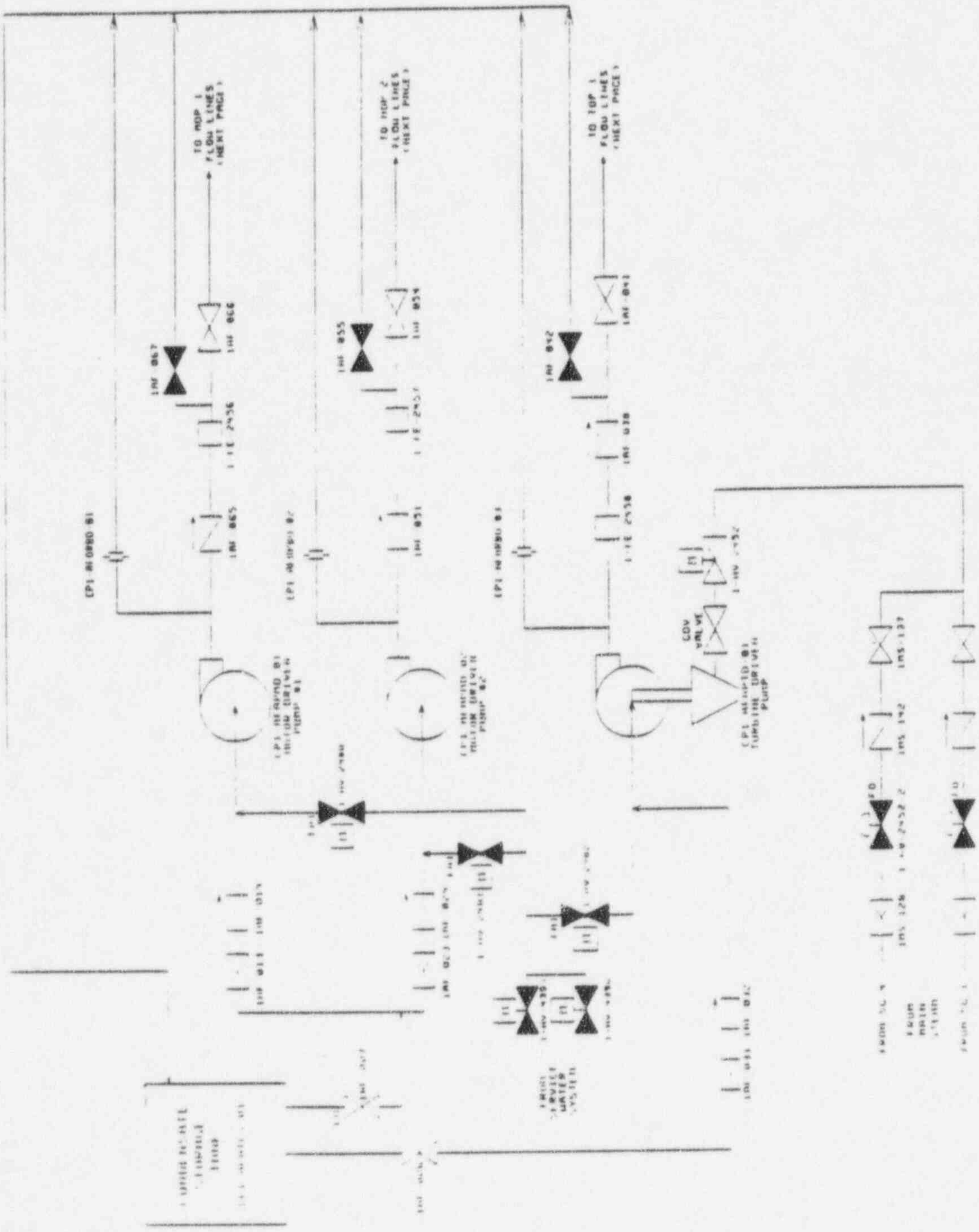


Figure 4.3.2.1.2: Auxiliary Feedwater System
Sheet 2 of 2

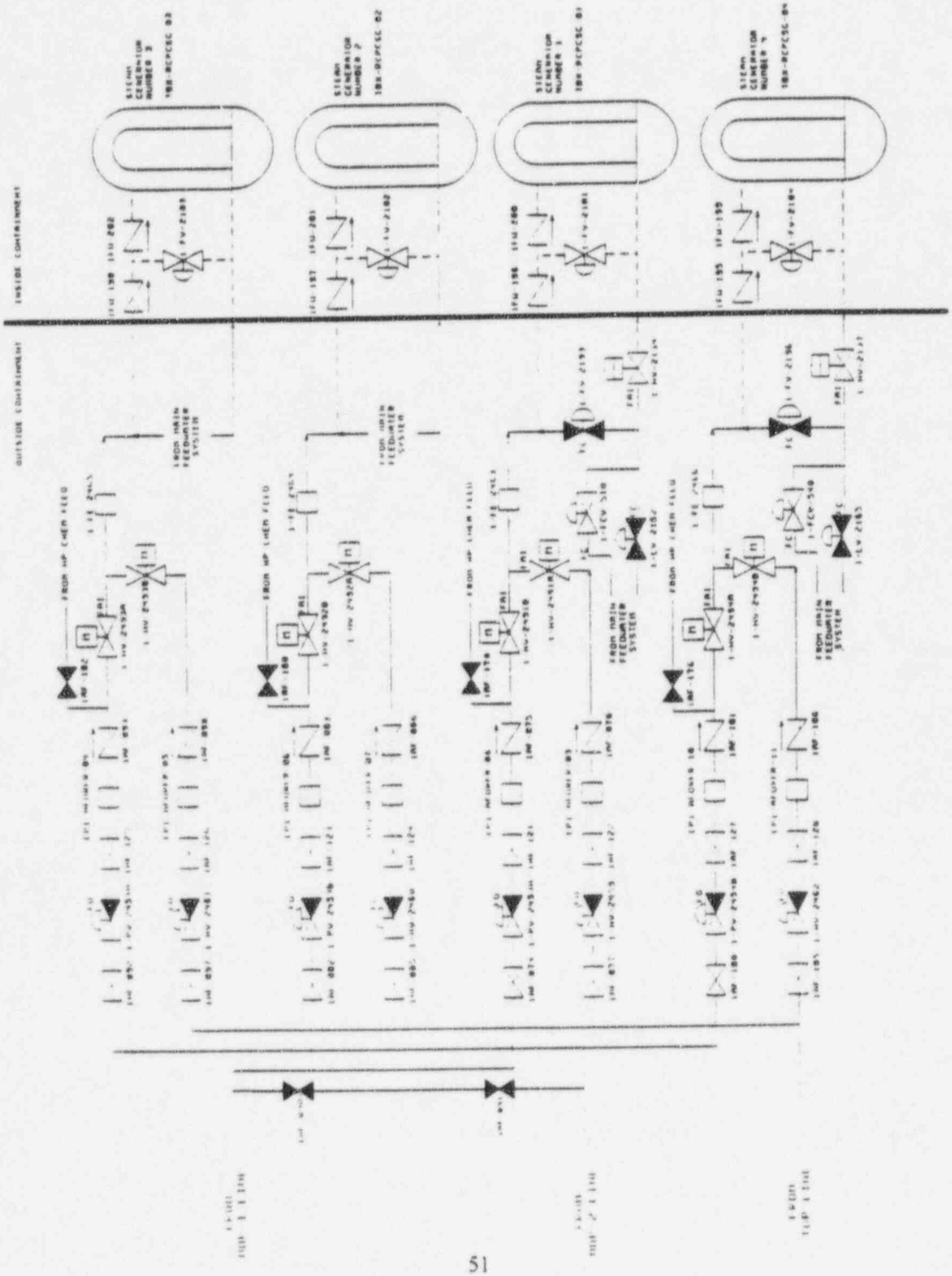


Figure 4.3.2.1.3: Residual Heat Removal System
Sheet 1 of 1

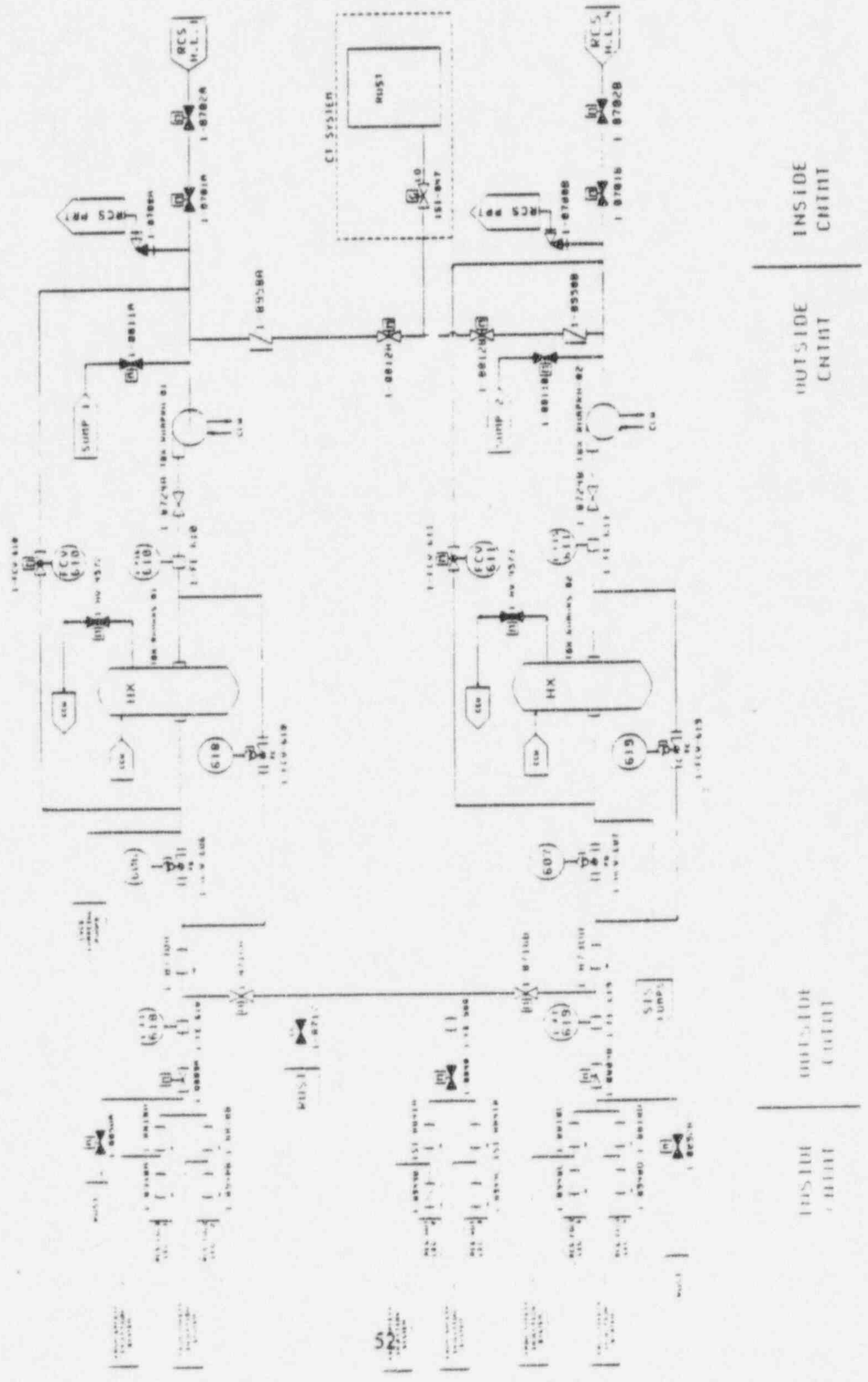


Figure 4.3.2.1.4: Station Service Water System
Sheet 1 of 1

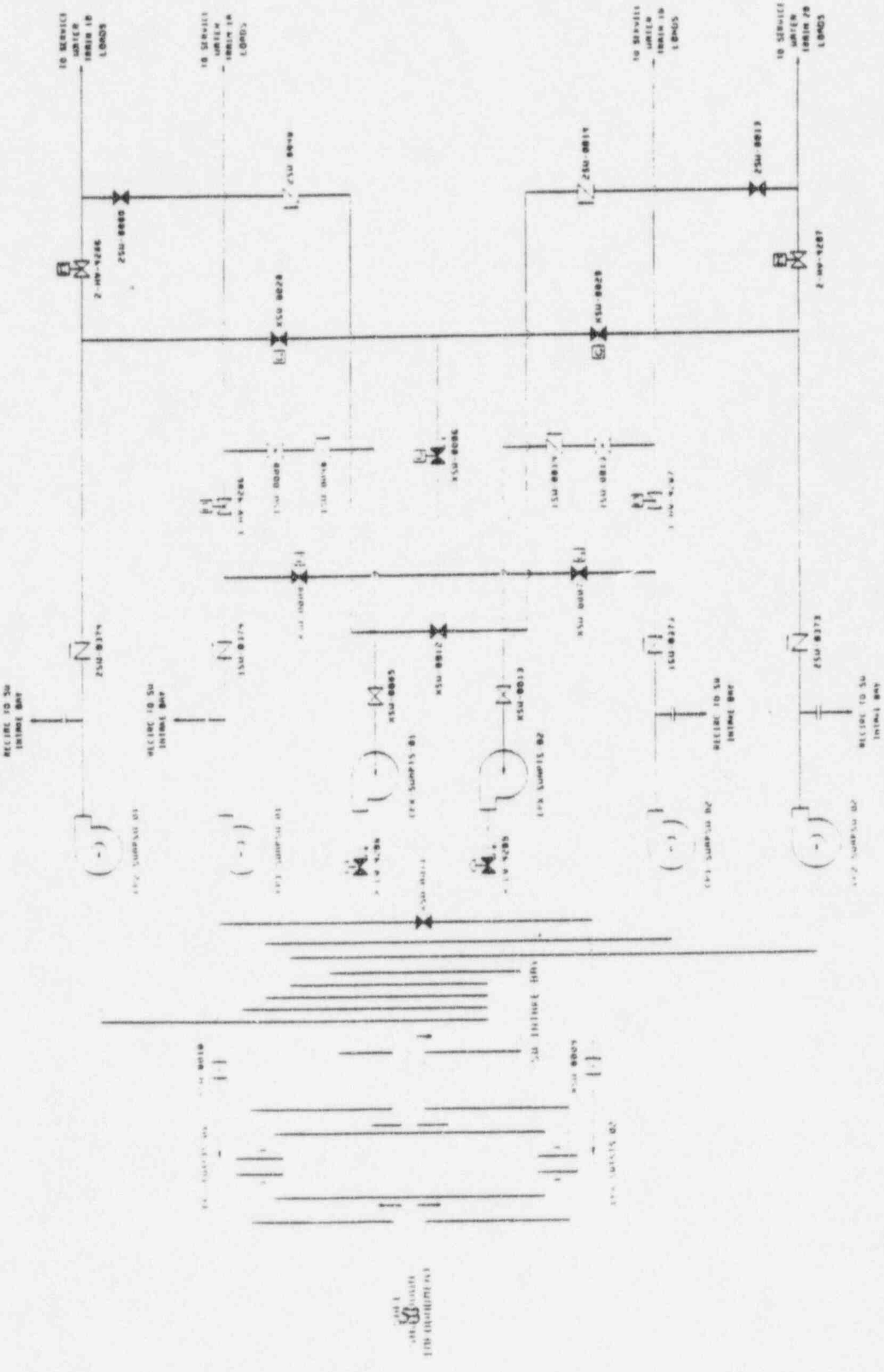


Figure 4.3.2.1.5: Containment Spray System
Sheet 1 of 1

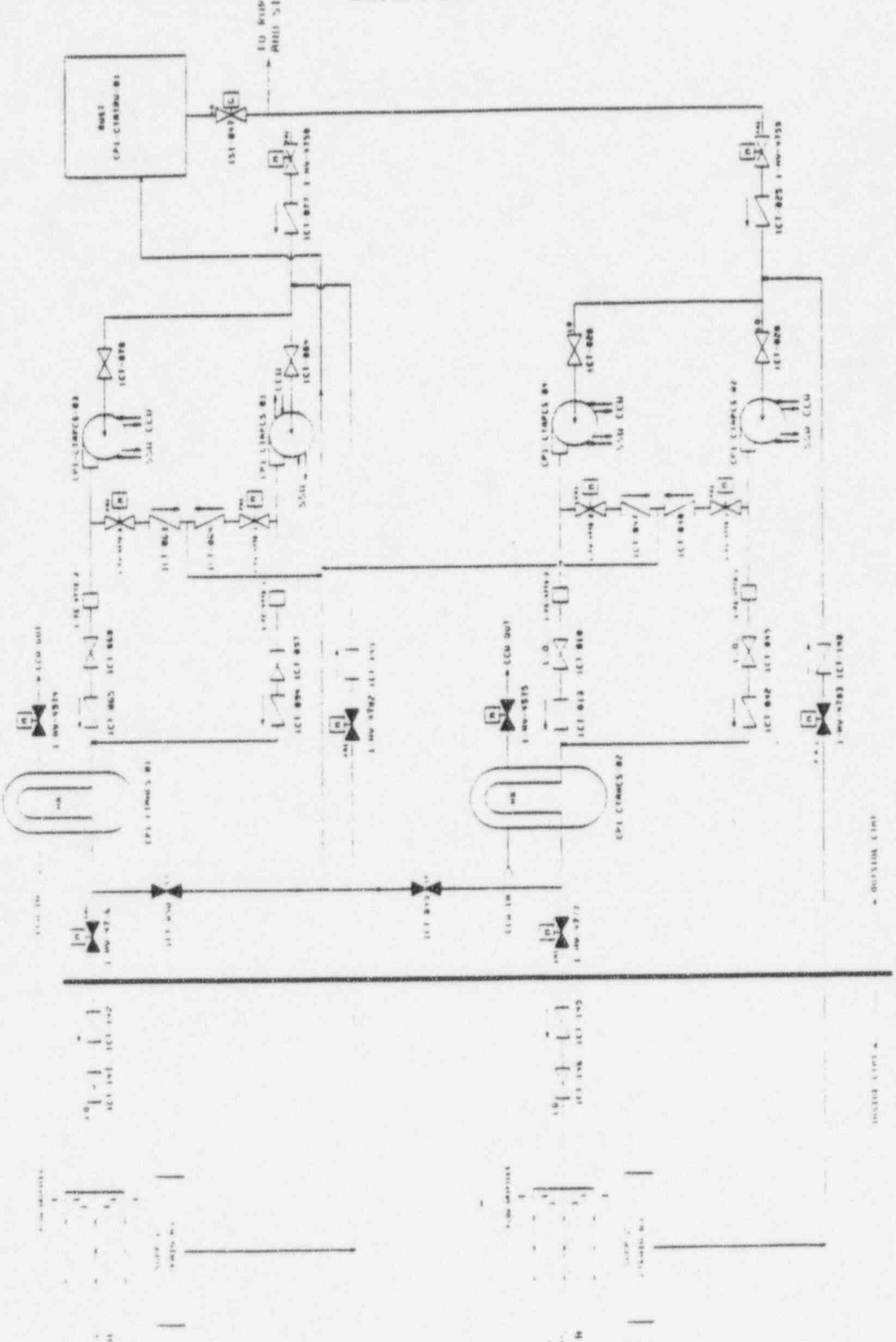


Figure 4.3.2.1.6: Chemical and Volume Control System
Sheet 1 of 1

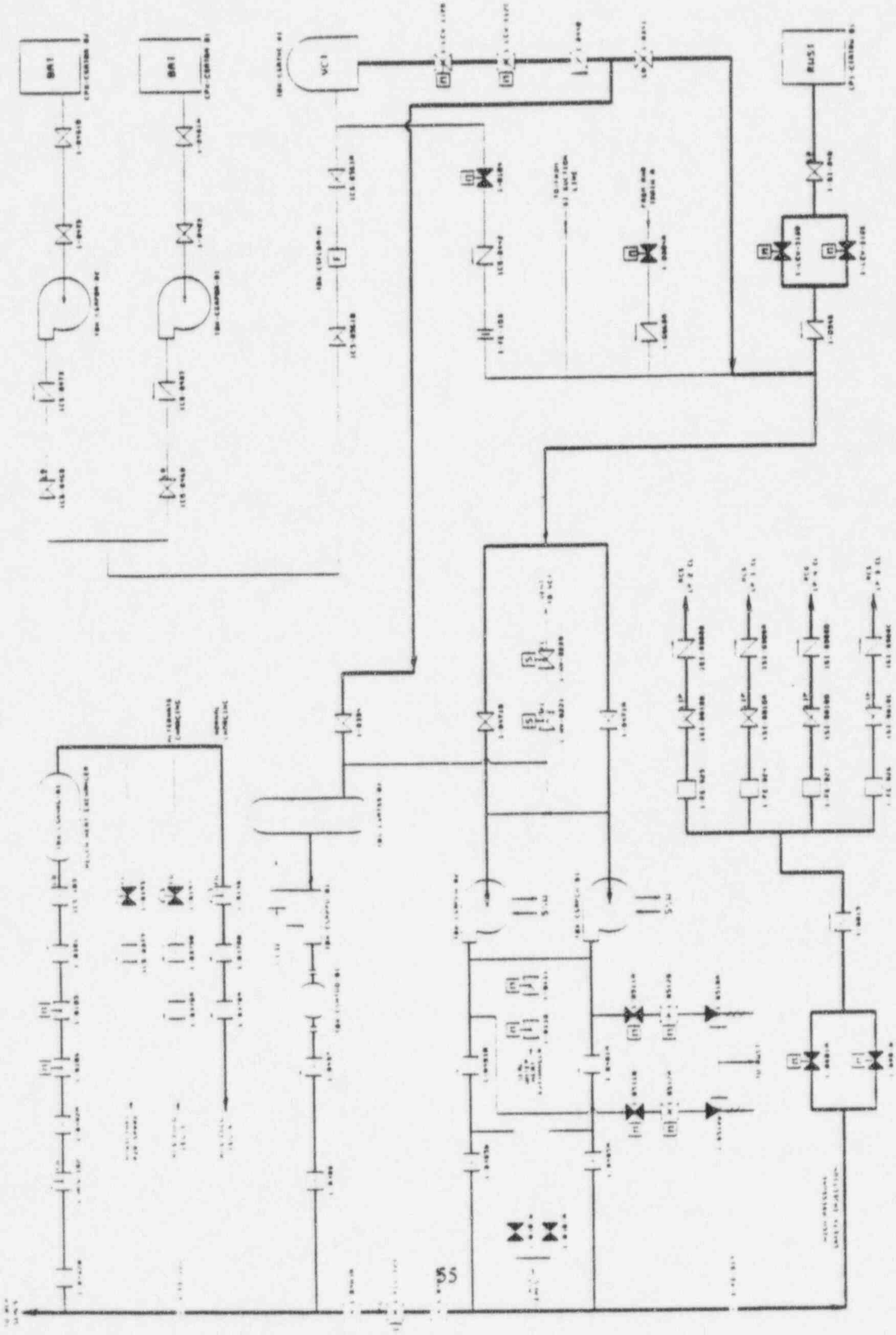


Figure 4.3.2.1.7: Reactor Coolant System
Sheet 1 of 1

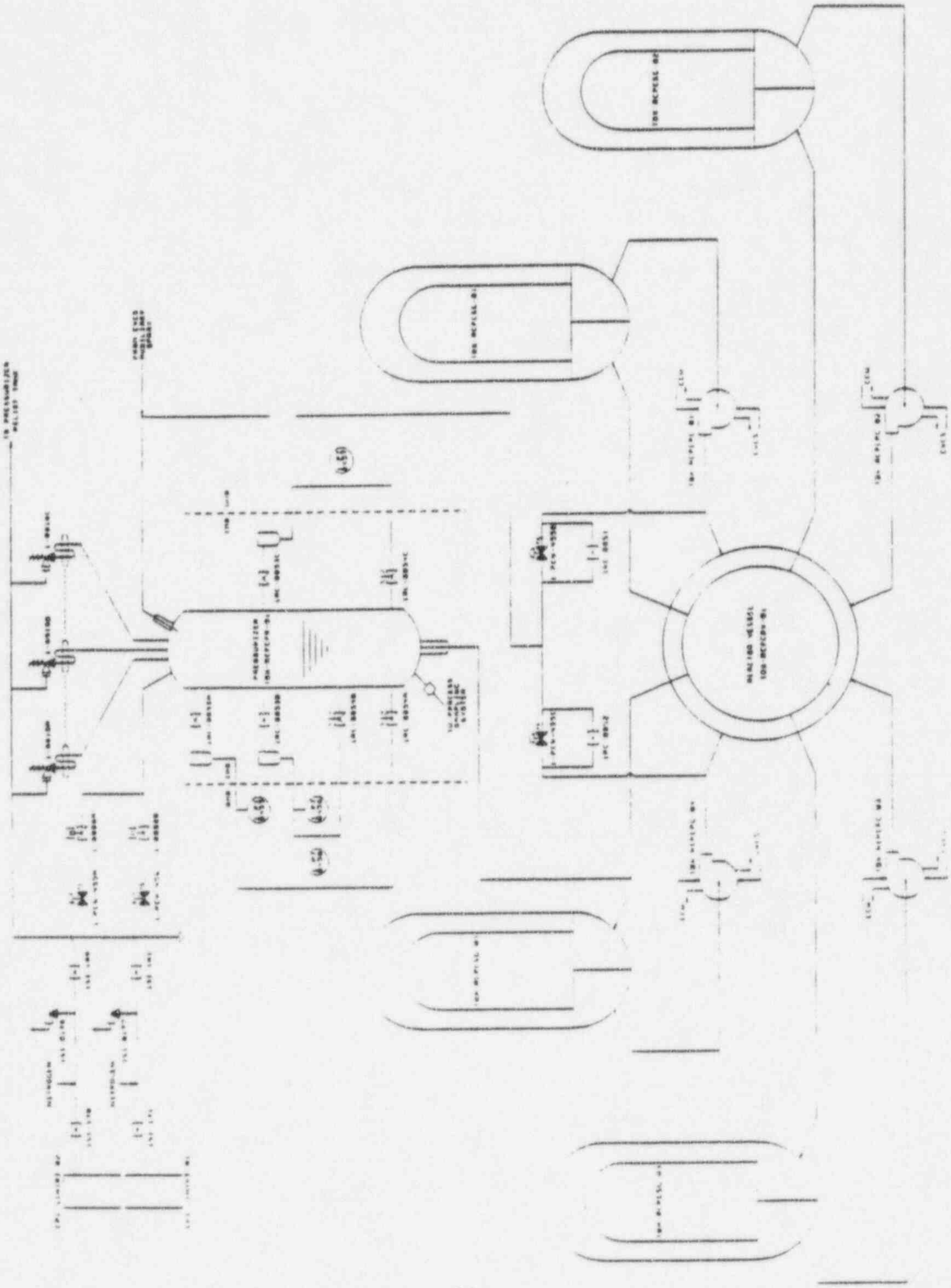


Figure 4.3.2.1.8-1: Safety Injection System
Sheet 1 of 1

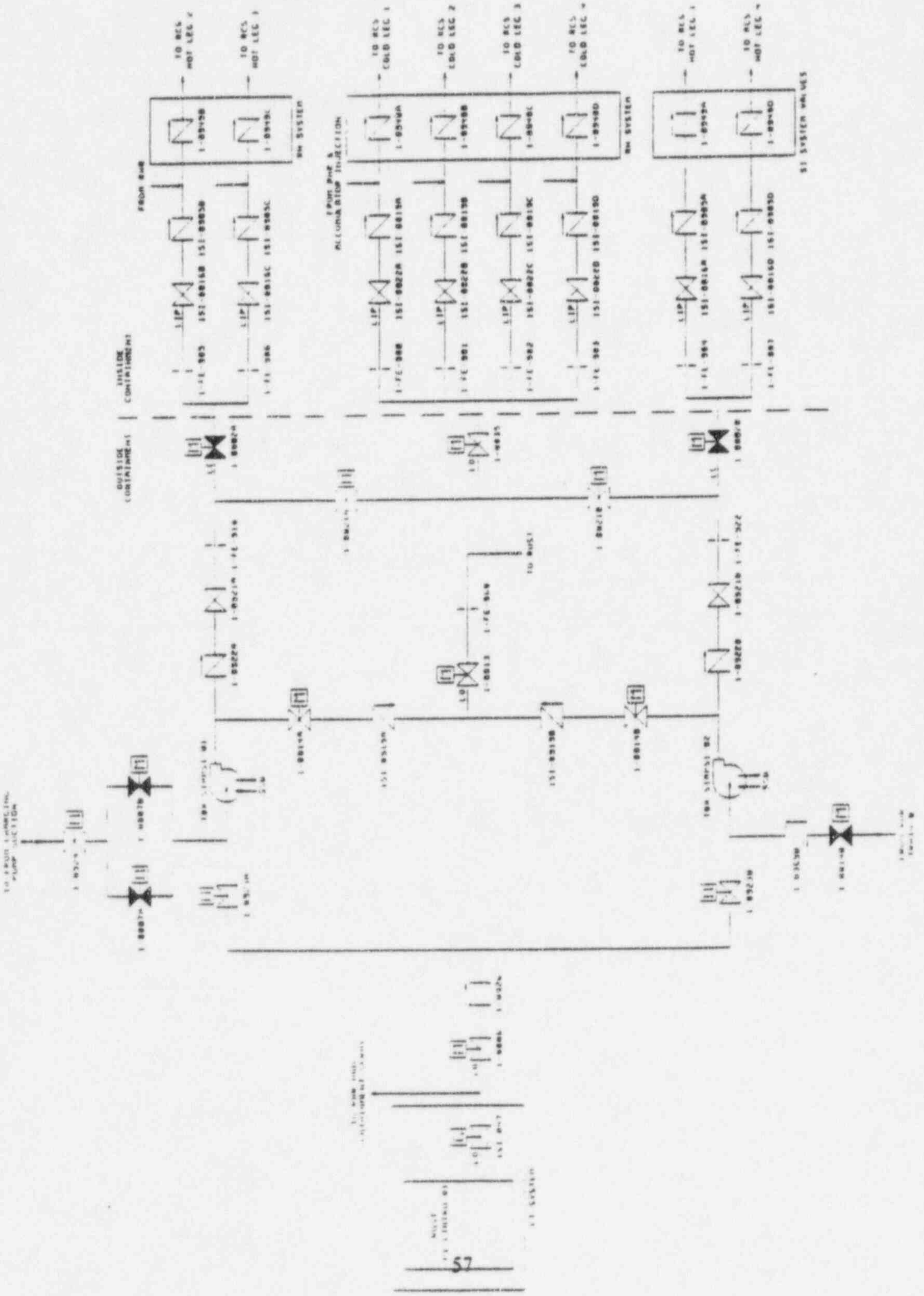


Figure 4.3.2.1.8-2: Accumulator Injection System
Sheet 1 of 1

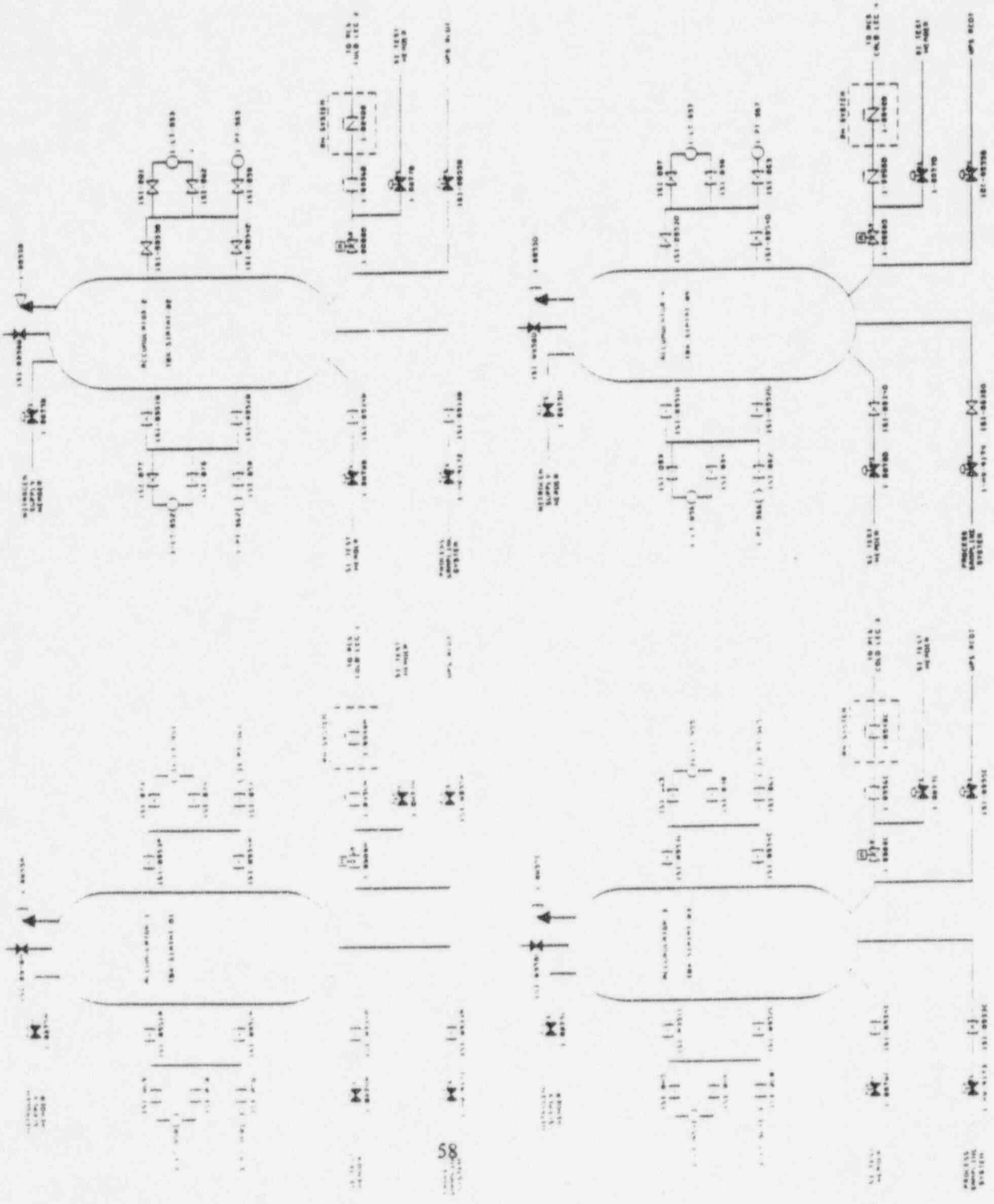


Figure 4.3.2.1.9: Condensate and Feedwater System
Sheet 1 of 2

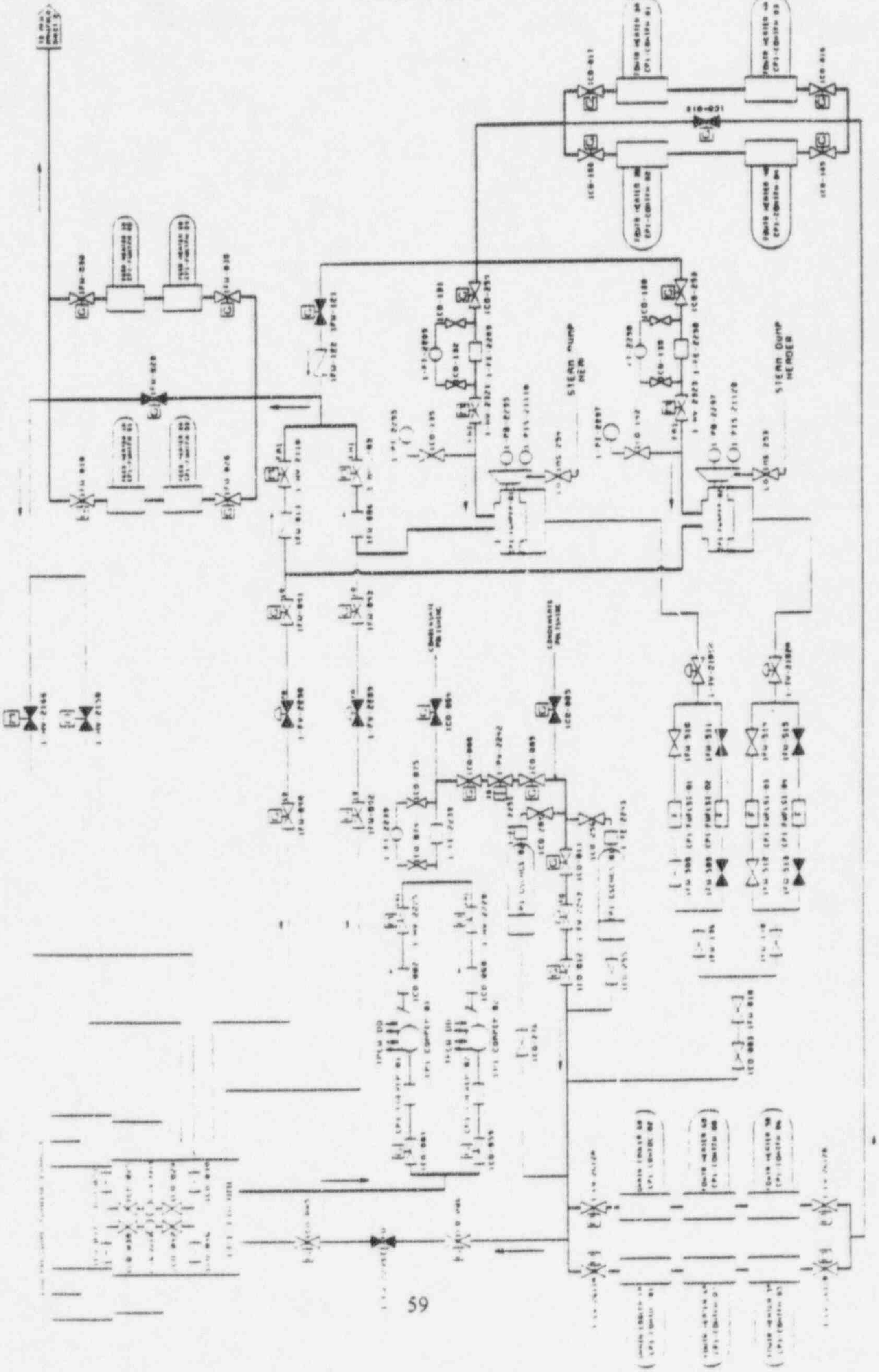


Figure 4.3.2.1.9: Condensate and Feedwater System
Sheet 2 of 2

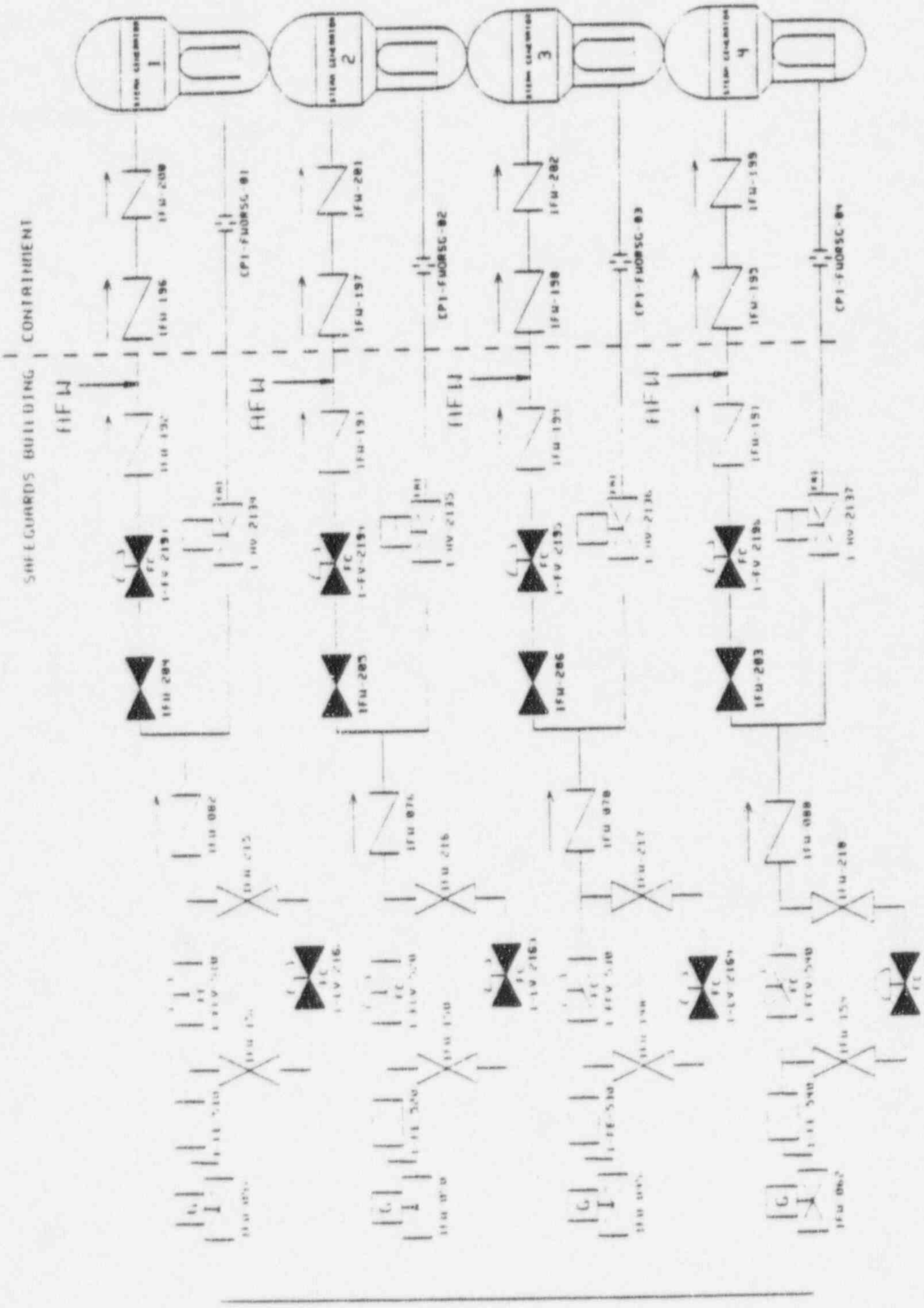
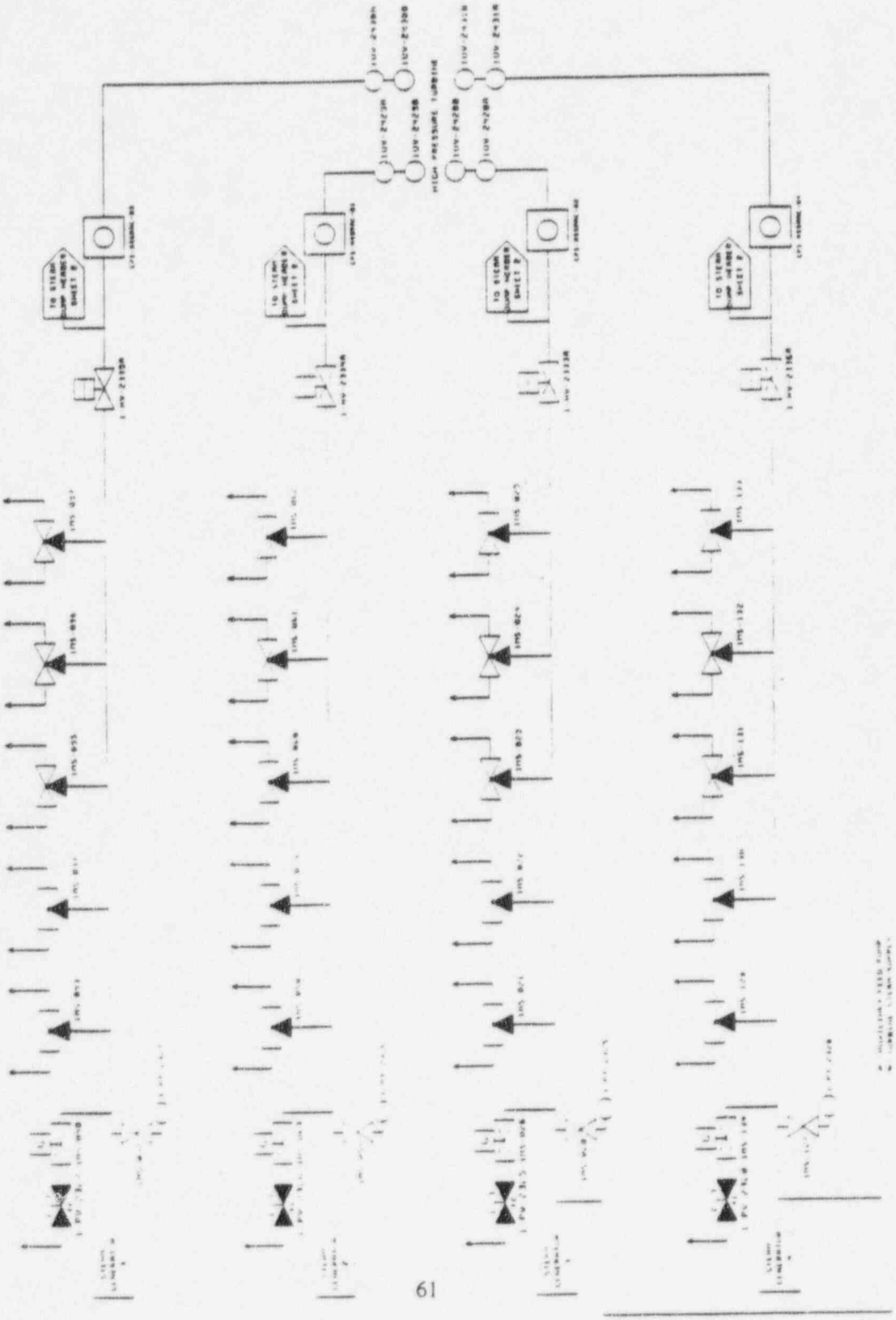


Figure 4.3.2.1.10: Main Steam System
Sheet 1 of 2



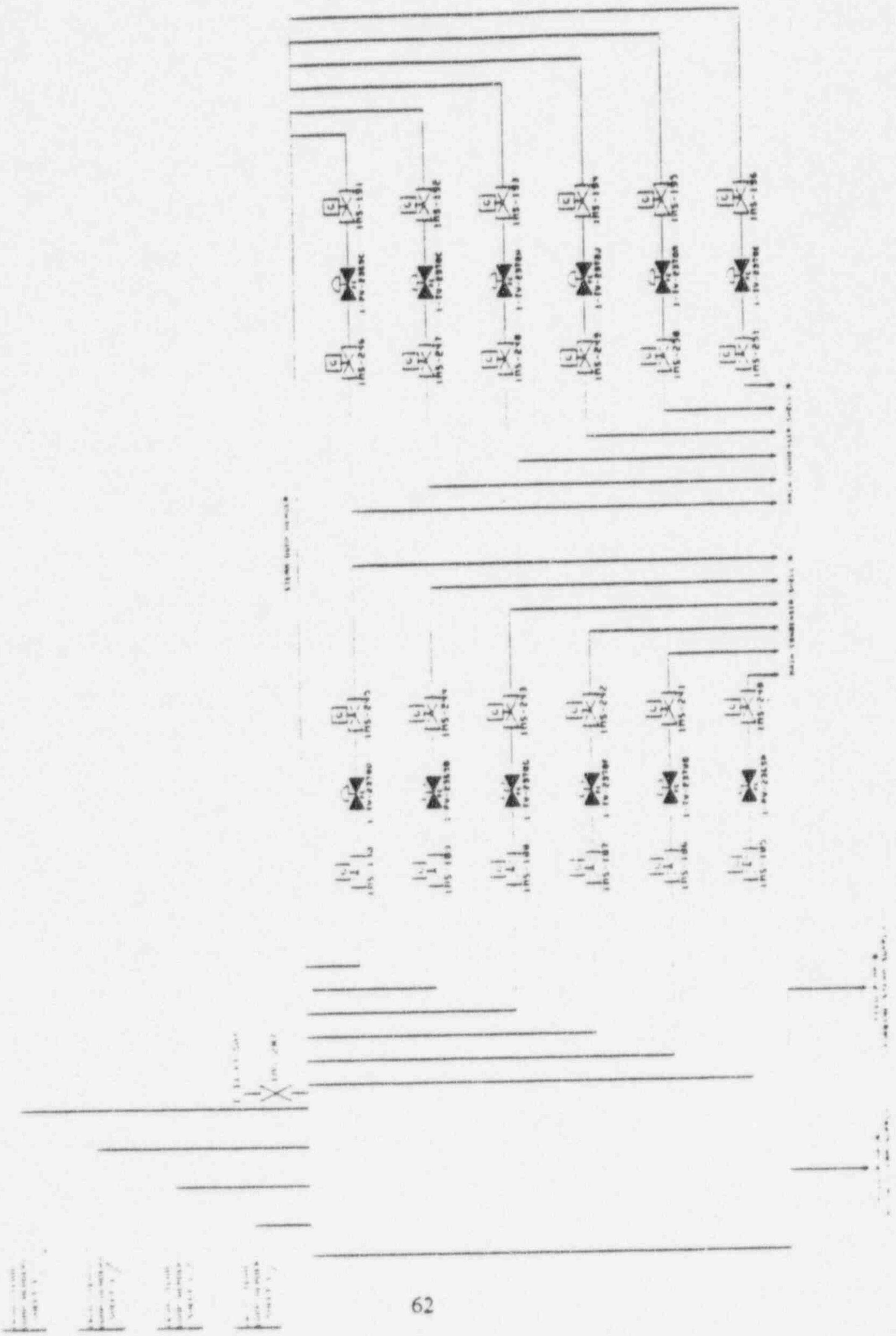


Figure 4.3.2.1.10: Main Steam System
Sheet 2 of 2

Figure 4.3.2.1.11: Circulating Water System
Sheet 1 of 1

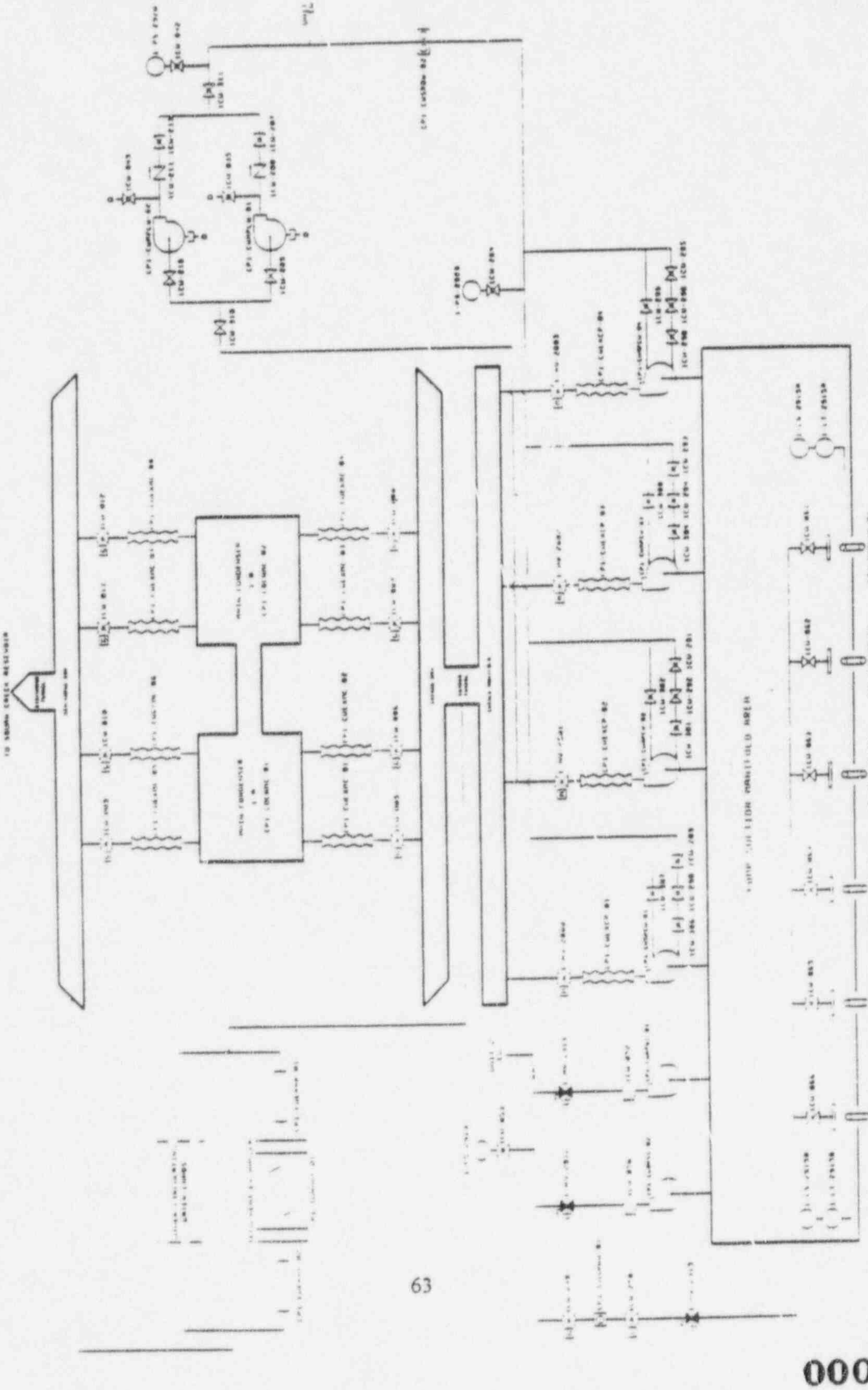


Figure 4.3.2.1.12: Reactor Protection System
Sheet 1 of 2

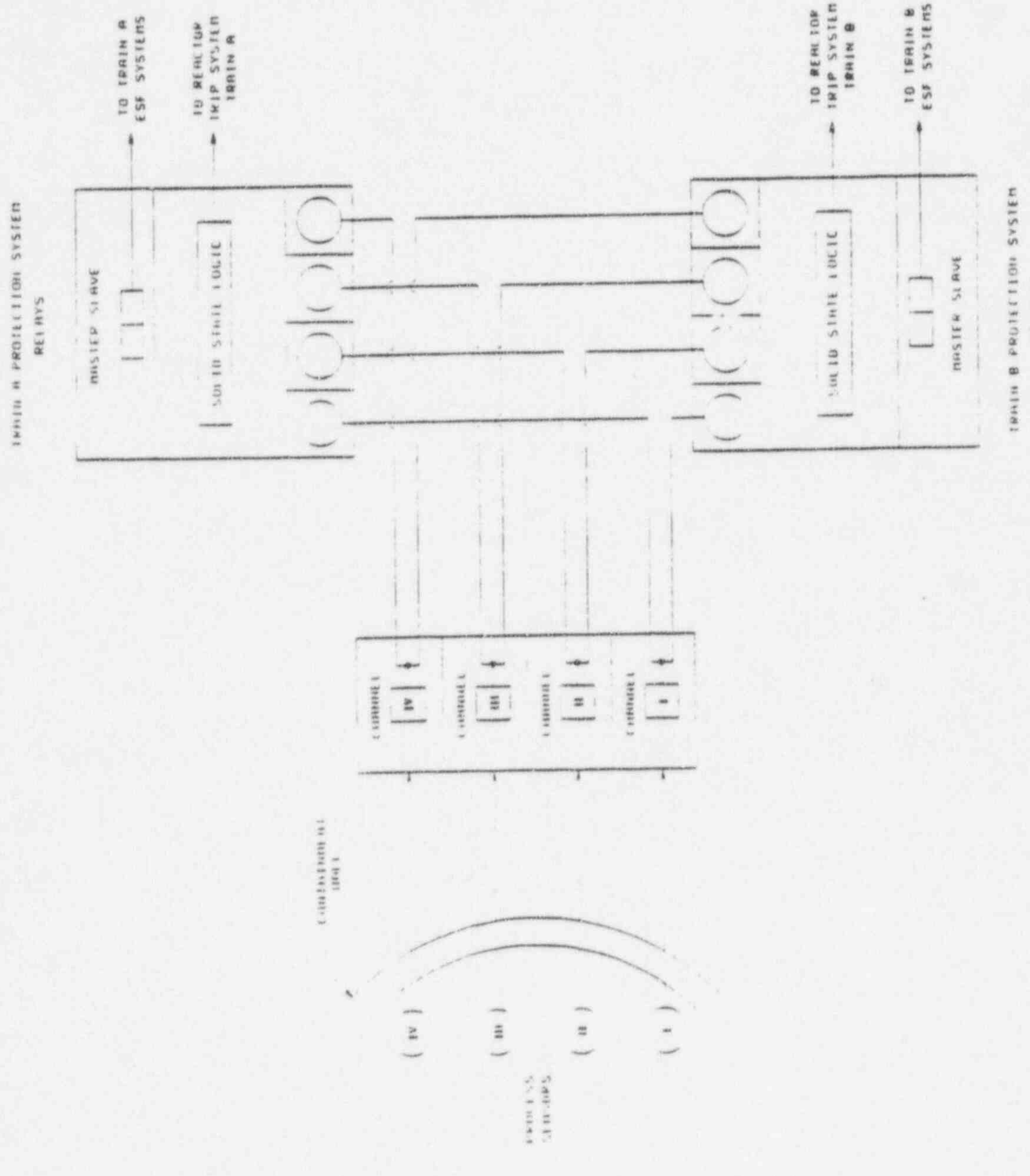


Figure 4.3.2.1.12: Reactor Protection System
Sheet 2 of 2

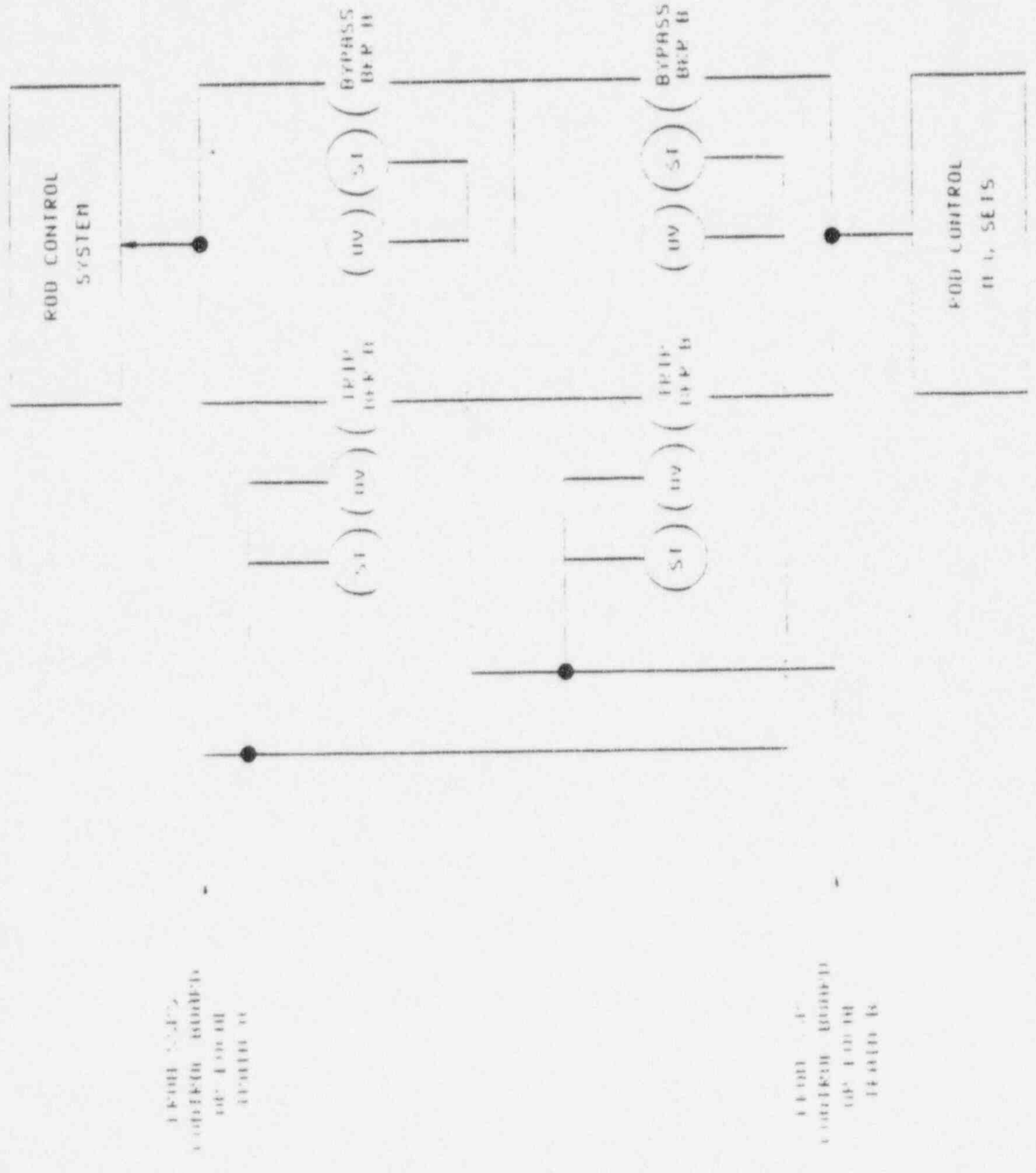


Figure 4.3.2.1.13-1: Off-site Power Distribution System
Sheet 1 of 1

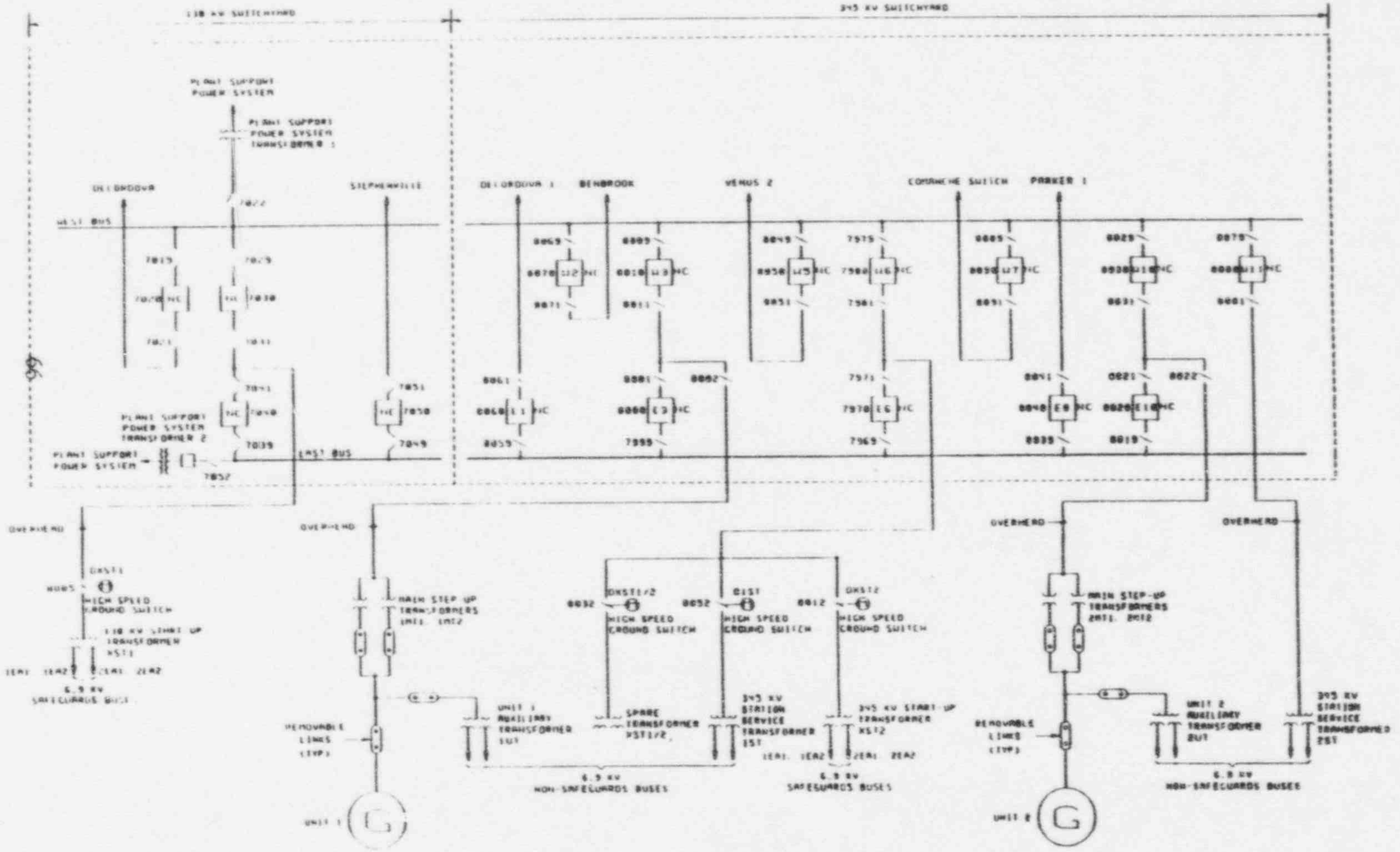
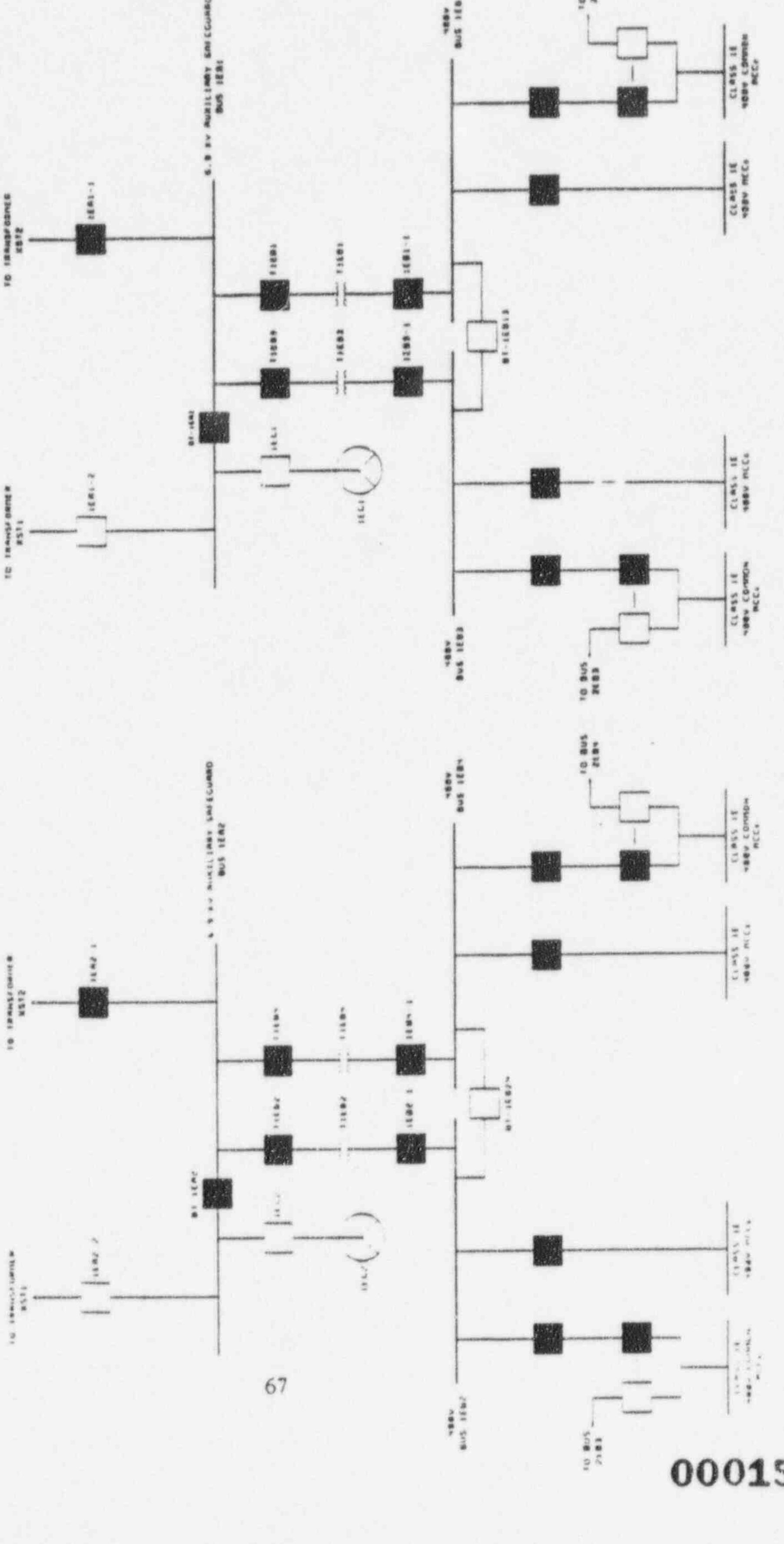


Figure 4.3.2.1.13-2: AC Inside Power Distribution System
Sheet 1 of 2 (Class 1E)



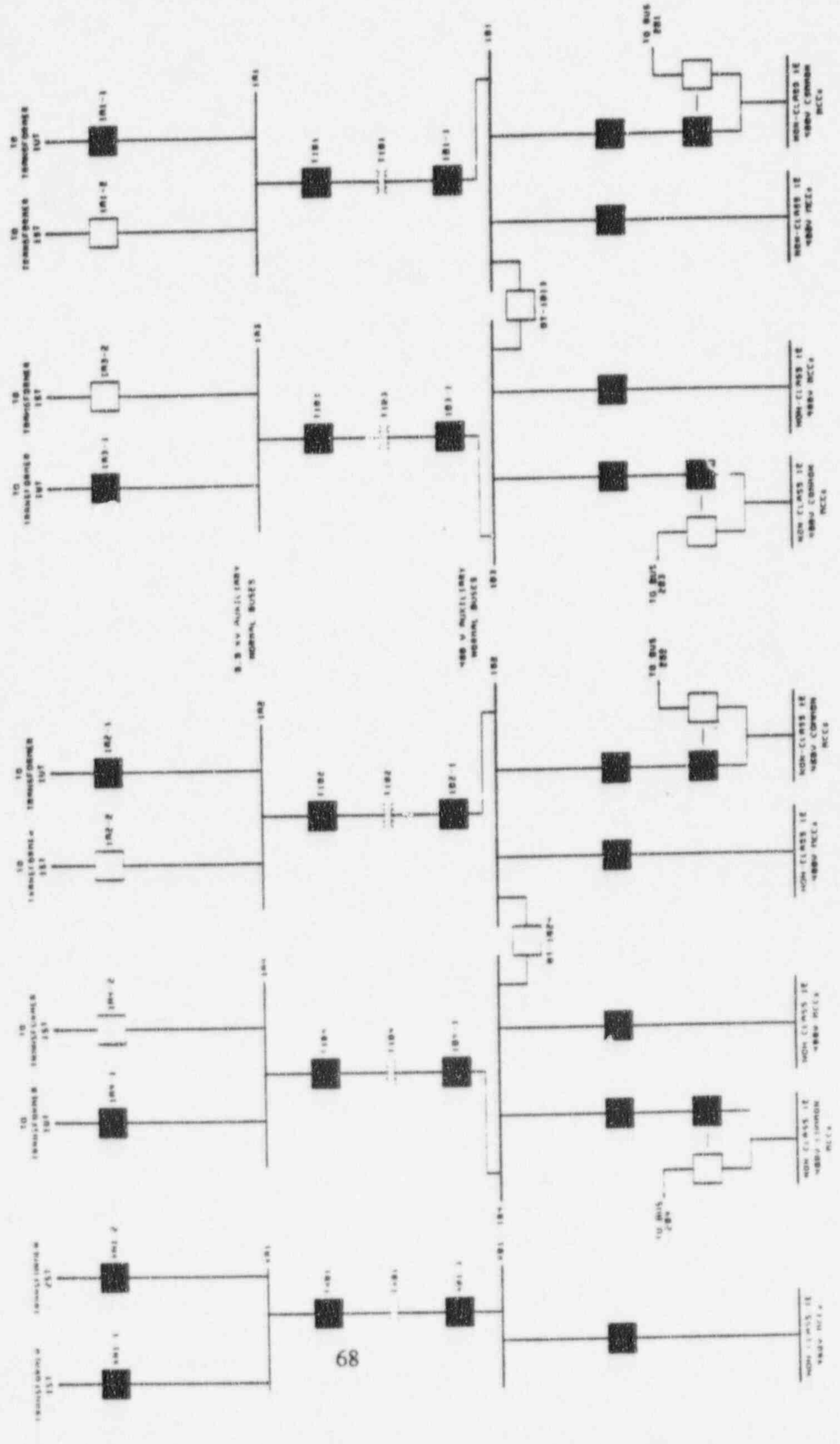


Figure 4.3.2.1.13-2: AC Inside Power Distribution System
Sheet 2 of 2 (Non-Class 1E)

Figure 4.3.2.1.13-3: 125V DC & 118V AC Inside Power Distribution System
Sheet 1 of 2 (Class 1E)

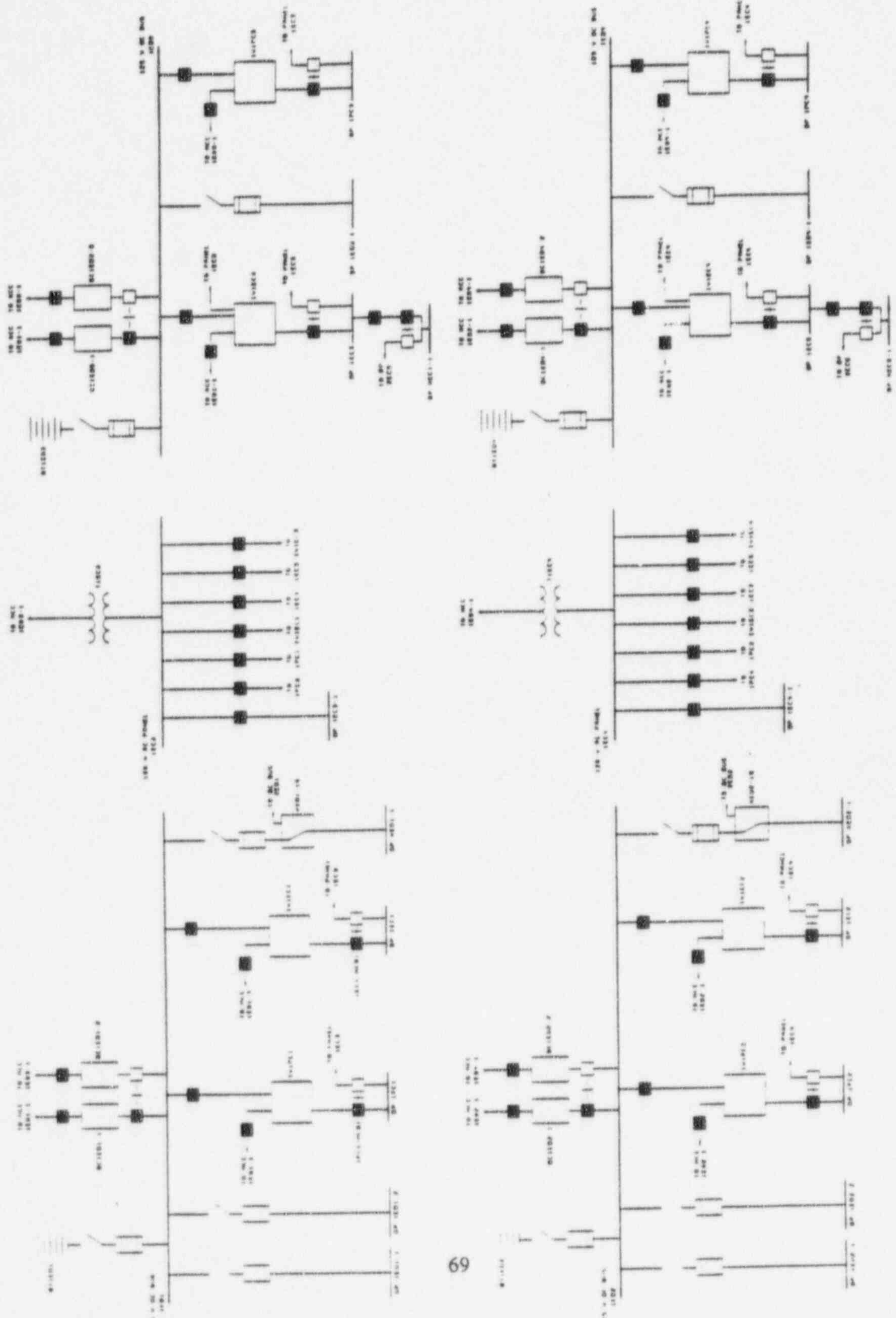


Figure 4.3.2.1.13-3 125V DC & 118V AC Inside Power Distribution System
Sheet 2 of 2 (Non-Class 1E)

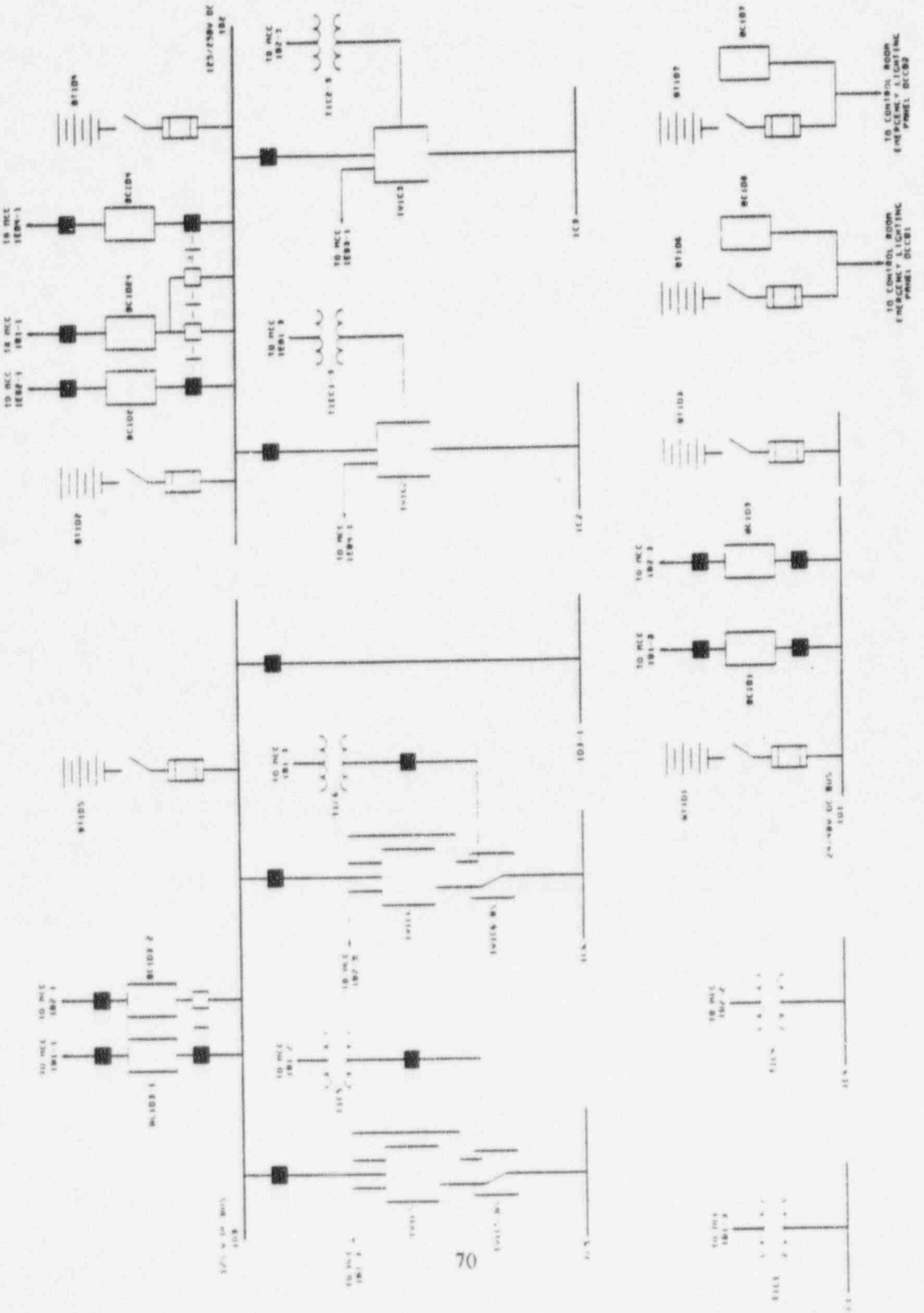


Figure 4.3.2.1.14: Instrument Air System
Sheet 1 of 2

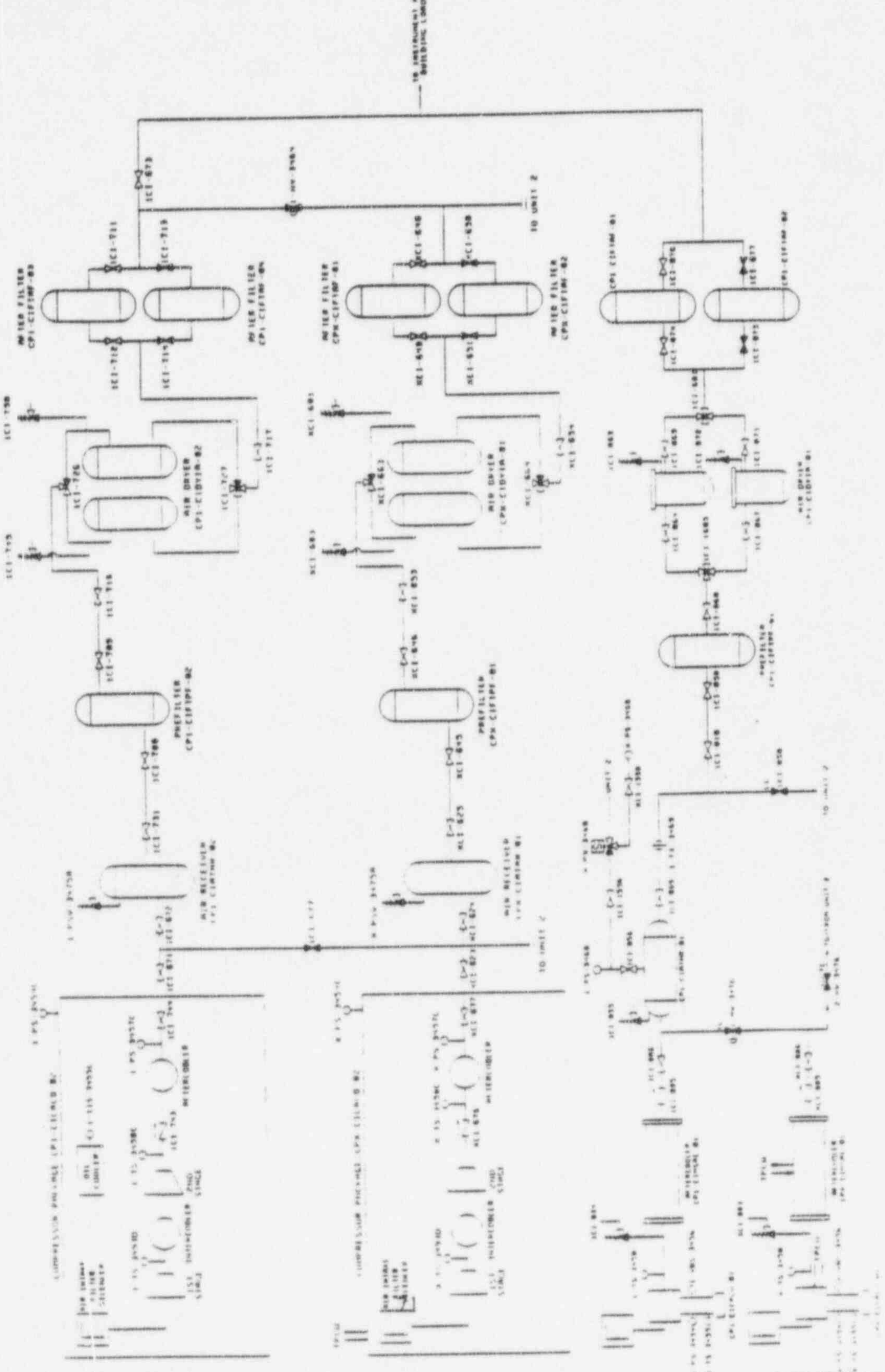


Figure 4.3.2.1.14: Instrument Air System
Sheet 2 of 2

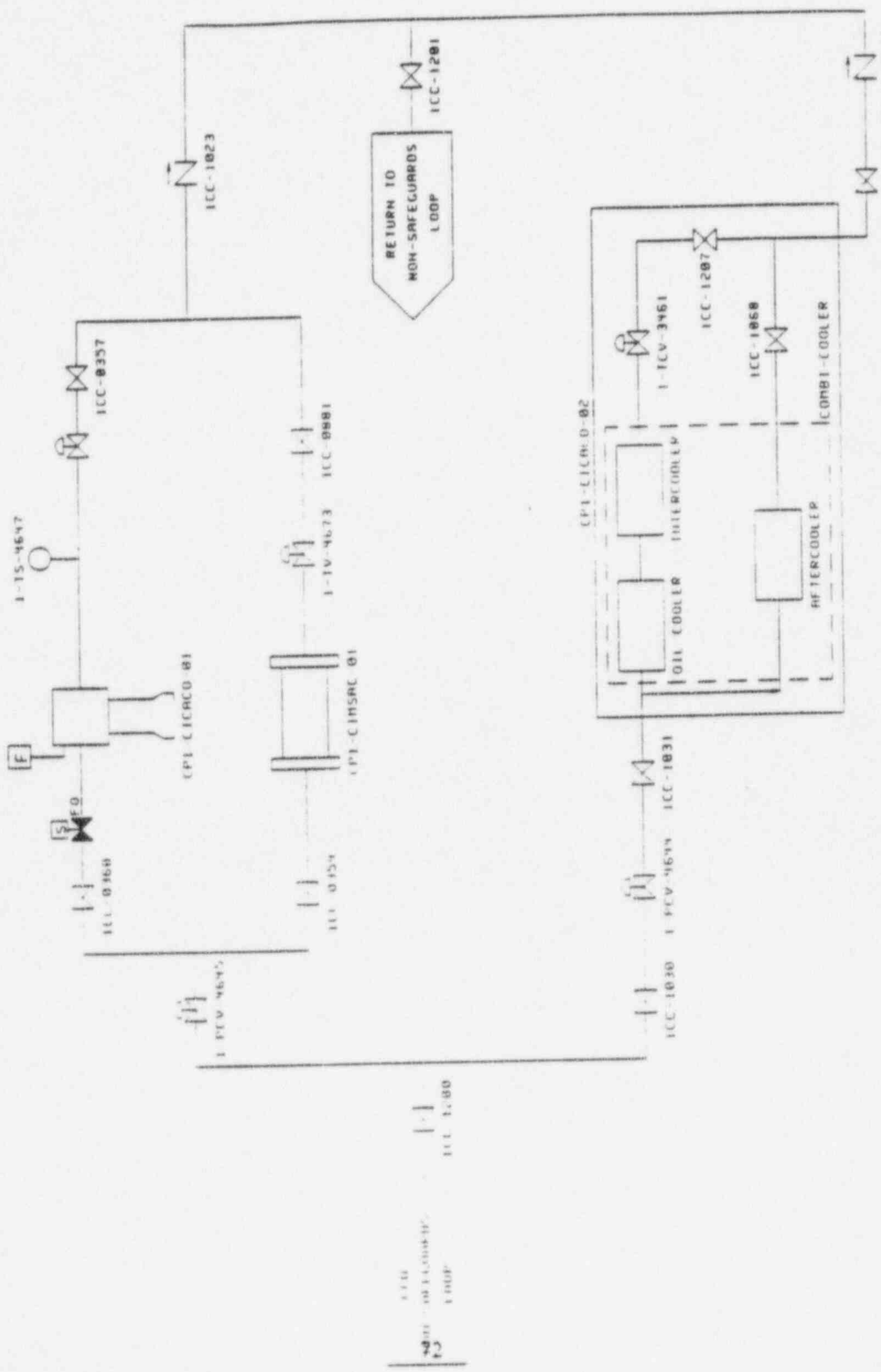
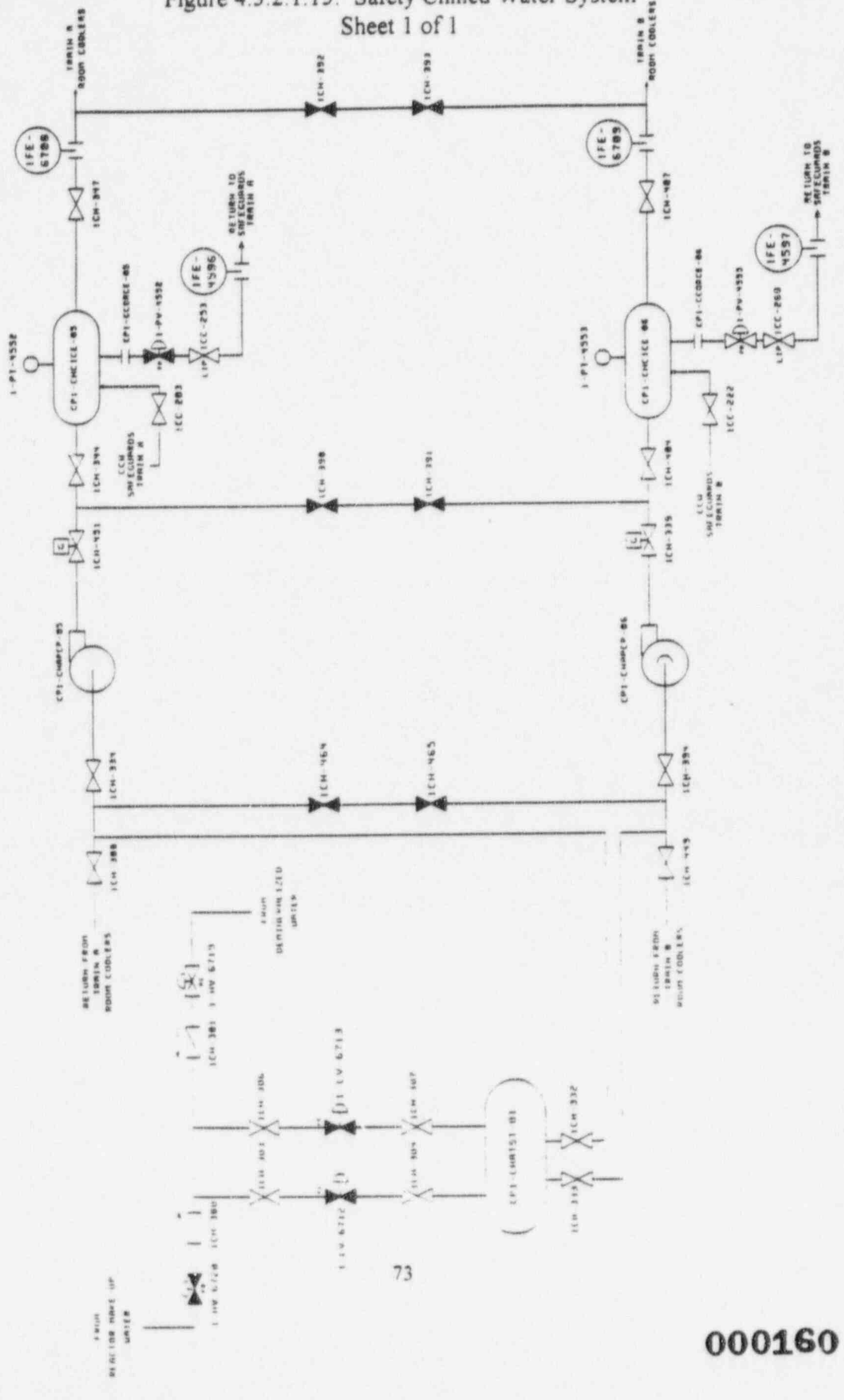


Figure 4.3.2.1.15: Safety Chilled Water System
Sheet 1 of 1



4.3.3 Discussion of Systems Dependencies

These systems are both frontline and support systems, using the terminology of the IPE. A system dependency matrix was developed as part of the IPE and is provided below for information. A system-by-system description of these dependencies is also provided. Each system notebook contains a section that lists all system dependencies and interfaces and indicates the segment in which these are modeled. Not all of these dependencies need to be maintained for recovery from the seismically-induced LOOP and VSBLOCA.

Table 4.3.2.3-1: CPSES System Dependency Matrix

		FRONTLINE SYSTEMS								SUPPORT SYSTEMS						
		RC	CS	SI	RH	CT	AF	FW	MS	SW	CC	CH	EP	ES	CI	CW
SUPPORT SYSTEMS	SW		1	1		1	6			–	4		1			
	CC	1	1		1,4	1,4					–	4	2	2	1	
	CH		2	2	2	2	2				2	–	2			
	EP	3	3	3	3	3	3	3	3	3	3	3	–	3	3	3
	ES		5	5	5	5	5	5	5	5	5	5	5	–	5	
	CI	3	3		3		3	3	3			3			–	3
	CW							1,4	4							-
	MS						3	3	–							

1 = Equipment cooling
2 = Room cooling
3 = Motive power
4 = Heat removal
5 = Signal
6 = Alternate water supply

COMPONENT COOLING WATER SYSTEM (CC):

System Dependencies

The CC system receives motive power from the Electric Power System (Class 1E 6.9kV).

The CC room cooler units are powered from Class 1E 480V MCCs and are cooled by CH.

The CC system receives control signals from ES and the SW system.

The CC system interfaces with the following systems:

CT - CT pump seal cooling and CT heat exchanger
RH - RH pump seal cooler and RH heat exchanger
CH - CH chiller unit condenser
UPS - UPS air conditioning condenser
CS - Positive Displacement Pump bearing oil cooler
RC - RCP bearing oil, motor air and thermal barrier coolers
CI - Instrument Air Compressor Package Cooling
ES - Control Room A/C units

The CC Heat Exchangers are cooled by Station Service Water.

Shared System Dependencies (including Unit to Unit)

Piping connections are provided at the discharge of each pump and at the discharge of each heat exchanger that allow the Unit 1 and Unit 2 systems to be cross-tied. In addition, a third cross-tie line allows the Unit 1 Train B pump suction and the Unit 2 Train A pump suction to be cross-ties.

AUXILIARY FEEDWATER SYSTEM (AF):

System Dependencies

The MDAFW Pumps receive electric power from the Electric Power System (Class 1E 6.9kV).

The room cooler unit are powered by 480V Class 1E power and cooled by CH.

The TDAFW Pump receives motive power (steam) from the MS system.

The AF system receives control signals from ES and FW.

The AF system flow control and isolation valves receive motive power (air) from the CI system.

Shared Systems

A portion of the main feedwater bypass system piping connected to the steam generator auxiliary nozzle is shared with the AF system.

RESIDUAL HEAT REMOVAL (RH):

System Dependencies

The RH pumps receive motive power from the Electric Power System (Class 1E 6.9kV). The room cooler units are powered by Class 1E 480V and cooled by the CH system.

The RH Heat Exchangers are cooled by CC.

The RH system receives control signals from ES.

The CI system provides motive power to RH system components.

Shared Systems

The RH system shares the Refueling Water Storage Tank (RWST) with the SI, CS and CT systems.

The RH system shares the RWST Isolation Valve 1SI-047 with the SI and CT systems.

The RH and SI systems share the downstream check valve in each cold leg injection line and the downstream check valve in each hot leg injection line.

The RH and CT systems share the two containment sumps, but have individual flowpaths from the sumps.

The RCS pressure relief tank is used by valves 8708A and B.

STATION SERVICE WATER SYSTEM (SW):

System Dependencies

The SW pumps receive motive power from the Electric Power System (Class 1E 6.9kV). SWIS cooling is provided by Class 1E 480V exhaust fans.

The SW pumps are actuated by signals from the ES and train-related CC system.

The SW system provides cooling water to the following systems.

CC - CC heat exchangers
CS - CC pump lube oil coolers

SI - SI pump lube oil coolers
CT - CT pump bearing coolers
EP - Diesel Generator Jacket water cooler
AF - Emergency AF Water Supply

The CW system provides makeup water to the SWIS.

Unit to Unit Shared System Dependencies

Both Unit Service Water systems share the Service Water Intake Structure located on the Safe Shutdown Impoundment.

Both Unit systems share a common screen wash system with multiple suction and discharge cross-ties.

Cross tie connections in each unit system enable either train in one unit to be connected to either train in the other unit.

CONTAINMENT SPRAY SYSTEM (CT):

System Dependencies and Interfaces

The CT pumps receive motive power from the Electric Power System (class 1E 6.9 kV)

The CT pump seals are cooled by the CC system.

The CT pump bearings are cooled by the SW system.

The CT pump room cooler units are powered by Class 1E 480V and cooling supplied by the CH system.

The CT system receives control signals from the ES system

Shared System Dependencies

The CT system shares the RWST with the SI, RH and CS systems.

The CT system shares RWST Isolation Valve 1SI-047 with the SI and RH systems.

The CT and RH systems share the containment sumps.

CHEMICAL AND VOLUME CONTROL SYSTEM (CS):

System Dependencies and Interfaces

The Centrifugal Charging Pumps (CCPs) (Class 1E 6.9kV) and the Positive Displacement Pump (PDP) (Class 1E 480V) receive motive power from the Electric Power System.

The CS system provides seal water to the Reactor Coolant Pumps. The seal water flow control valve receives air from the CI system.

The PDP bearings are cooled by the CC system.

The CCP bearings are cooled by the SW system.

The CCP room cooler units are powered from Class 1E 480V and cooling water is supplied by the CH system.

The PDP room cooler unit is powered from non 1E 480V and cooling water is supplied by ventilation chilled water.

The pumps receive control signals from ES.

The CS system maintains RC system level during normal operation.

The CCPs provide high head flow to the RC system on an "S" signal.

The Boric Acid Transfer systems, a sub system of the CS, provides emergency boration of the RC system.

Shared System Dependencies

The CS system shares the RWST with the RH, SI and CT systems.

REACTOR COOLANT SYSTEM (RC):

System Dependencies and Interfaces

The RCPs, (Non Class 1E 6.9kV) the PORV black valves (Class 1E 480V) and the pressurizer heaters (Class 1E 480V) receive power from the Electric Power System.

The PORVs receive motive power from the Nitrogen Gas System.

The CC System provides cooling the RCP motor air coolers, upper and lower bearing lube oil coolers, and the thermal barrier.

The CS system provides seal injection to the RCP seals.

The pressurizer spray valves receive motive power from the instrument air system.

The RCS interfaces with the ECCS system, the main steam system and main and auxiliary feedwater.

SAFETY INJECTION SYSTEM (SI):

System Dependencies and Interfaces

The SI pumps receive motive power from the Electric Power System (Class 1E 6.9kV).

The SI pump room coolers are powered by Class 1E 480V supplied by CH.

The SI pump bearings are cooled by the SW System.

The pumps receive control signals from ES.

The SI pump provide intermediate lead injection and recirculation flow to the RC system.

The class 1E 125 VDC system provides control power to the SI system.

Shared System Dependencies

The SI system shares the RWST with the RH, CS, and CT system.

The SI system shares RWST Isolation Valves 1SI-047 with the RH and CT systems.

The SI system shares the downstream check valve in each cold leg injection line with the RH system.

The SI system shares downstream check valves in hot legs 2 and 3 with the RH system.

CONDENSATE AND FEEDWATER SYSTEM (CF):

System Dependencies

The Condensate Pumps receive motive power from the Electric Power System. (Non Class 1E 6.9kV)

The Main Feed Pump Turbines receive motive power (Steam) from the Main Steam System.

The condensate pump bearings are cooled by the Turbine Plant Cooling Water system (TPCW).

Each MFP turbine is supported by AC and DC lube oil pumps and its lube oil cooler is cooled by TPCW.

The MFP seal injection is provided by the Condensate System.

The FW system receives control signals from ES.

The FW control valves receive motive power from the CI system.

MAIN STEAM SYSTEM (MS):

System Dependencies and Interfaces

The main steam system provides steam to the TDAFW pumps via connections to main steamlines 1 and 4.

The ARVs receive motive power from the CI system and dedicated accumulators

The Steam Dump System receives modulation signals from the RC system T_{avg}, and motive power from the CI system.

The turbine stop and control valves receive closure signals from ES.

The Steam Dump System uses the CW system as a support system for condenser availability.

The class 1E 125 VDC system provides control power to system valves.

CIRCULATING WATER SYSTEM (CW):

System Dependencies and Interfaces

The CW pump motors and associated screen wash receive motive power from the Electric Power System (Non Class 1E 6.9 kV and non class 1E 480V MCC respectively).

The Circulating Water system provides cooling water to the main condensers and the auxiliary condensers associated with the main feed pump turbines.

The CW system provides cooling the Condenser Exhausting Vacuum Pump Heat Exchanges.

The non-1E 125 VDC system provides control power to the CW system.

Shared System Dependencies

The CW systems of the two units share the CWIS.

The Unit 1 CW system can be cross connected to the Unit 2 system through various branch lines.

REACTOR PROTECTION SYSTEM (ES):

System Dependencies and Interfaces

The ES system is powered by the Electric Power System, for functions that require power. Most ES functions are fail safe (power independent).

The ES system provides the Safety Injection signal that

- actuates ECCS (CCPs, SIPs, RH Pumps and associated valves)
- actuates the ECCS support systems (SW, CC, CH)
- starts the MDAFWPs
- starts the Diesel Generators
- starts the CT pumps

The ES system initiates phase A and B Containment Isolation.

The ES system isolates Main Steam and Main Feedwater Systems.

The ES system provides a confirmation start signal to the CT pumps and opens the CT spray header isolation valves upon high containment pressure.

The ES system closes the main turbine stop and control valves and trips the FW pump turbines.

The ES system opens the containment sump to RH pump suction valves upon low level in the RWST.

The ES system provides a Blackout Signal (BOS) that actuates the following equipment.

- Centrifugal Charging pumps in CS system
- SW, CC and CH pumps
- AF pumps
- CI compressors
- 6.9 kV switchgear room coolers
- Battery Room Exhaust Fans

The ES system initiates Containment Ventilation Isolation.

The ES system initiates Control Room Emergency Recirculation.

ELECTRIC POWER SYSTEM (EP):

System Dependencies and Interfaces

The 138kV and 345kV switchyards provide preferred and alternate power to EP.

The CH system provides cooling to the 6.9kV and 480V switchgear rooms.

The ES system provides load shedding and re-energizing of various electrical loads.

UPS room cooling is provided by the CC system.

The Diesel Generator jacket water is cooled by Station Service Water.

Shared System Dependencies

Automatic transfer units (ATU) provide automatic powering of shared electrical buses by either unit.

INSTRUMENT AIR (CI) SYSTEM:

System Dependencies and Interfaces

The Instrument Air compressors are powered by the Electrical System. (Class 1E 480V).

The spare compressors are powered by Non Class 1E 480V.

The air compressors are cooled by CC.

The cooling supply to the spare compressors is provided by the TPCW system.
The Unit compressors are tripped by an "S" signal. They are loaded into their respective buses after a "BOS".

The CI system provides air to the following components pertinent to the IPE study:

- Pressurizer Spray Valves
- RCP Seal Water Pressure Control Valve
- AF Control Valves
- ARVs
- TDAFWP Steam Admission Valves
- RHR Hx Flow Control Valves
- Steam Dump valves.
- CH System chiller unit water regulating valves.
- FW Control valves.

SAFETY CHILLED WATER (CH) SYSTEM:

System Dependencies and Interfaces

The CH pumps are powered from the (Class 1E 480V) Electric Power System.
The CH Chiller units reject heat to their respective safeguards loop of the CC system.
Instrument air provides motive power to the valves that control of CC through the Condenser units.
Makeup water to the Chilled Water system is from the Reactor Makeup Water System or the Demineralized Water System.
The CH Pumps receive control signals from the ES system on start of the respective CC pump.

4.4 Preferred and Alternate Success Paths

The objective of this step is to develop the Success Path Logic Diagram and identify both the preferred and alternate success paths for the initiating events, taking into account both operational and systems considerations. From the safety function and event tree discussions and the system analysis, it can be seen that there are at least two safe shutdown paths available following the seismically-induced LOOP and VSBLOCA.

EPRI NP-6041 provides that for multi-train systems, only one train should be used in a given path. Further, it provides that if a train is used in one success path, the other train should not be used in the alternate path; rather a different system should be used. In general this approach was used for developing the SSEL. Typically Train A of multi-train systems was used as the path and no credit was taken for the other train. However it should be noted that the safety systems for CPSES Units 1 and 2 are dual-train systems and as such, they provide additional success paths. These Train B paths are qualified by similarity considerations as a result of qualifying the Train A path. In addition the design of CPSES includes a Turbine Driven Auxiliary Feedwater Pump train with Station Service Water as the long-term water supply. The turbine-driven train is not included in the safe shutdown path but is shown in the SPLD to show that there are multiple paths for safe shutdown for CPSES.

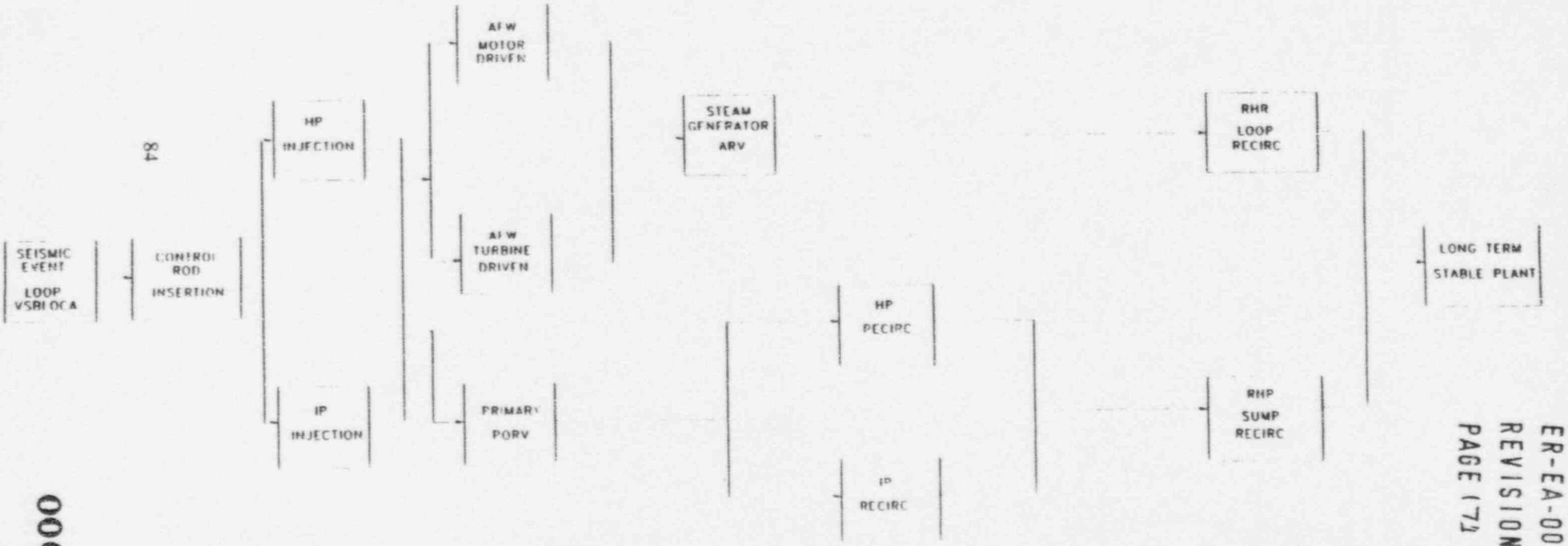
The paths that were chosen are the following:

> The preferred path is High Pressure (HP) injection via the CCPs in conjunction with secondary heat removal via the Motor Driven Auxiliary Feedwater train and Steam Generator ARVs, followed by RHR Loop Recirculation.
>
> The Alternate Path is Intermediate Pressure (IP) injection via the SIPs followed by Feed and Bleed decay heat removal cooling via the Reactor Coolant System PORVs, followed by IP recirculation and finally RHR sump recirculation.

These paths are shown in Figure 4.4-1.

CPSES SUCCESS PATH LOGIC DIAGRAM

FIGURE 4.4-1



4.5 Seismic Safe Shutdown Systems Evaluation

The objective of this step is to identify the important components within the systems used for both the primary and alternate paths. This step consists of three separate steps.

- Examine the fault tree models and reliability block diagrams for each of the systems and determine which success criteria are necessary for each of the functions for both the primary and alternate paths.
- Identify which system segments must be successful in order to achieve the particular system success criteria. These segments are 'super components' that include several components grouped together to reduce the size of fault trees and to make them easier to understand. Typically, these system segments contain both components associated with the particular frontline system and components of the support systems that are required for success. The reliability block diagrams for these systems which indicate the related system segments are included under Tab 5.
- Identify all frontline and support system components that are required to achieve a particular success criteria and safety function. The components identified for each system are presented in the Table 5.1.

System fault trees were developed for each train of multi-train systems as part of the IPE system analysis. For the present work, only Train A of multi-train systems was used as the path and no credit was taken for the other train. As noted above, the safety systems for CPSES Units 1 and 2 are dual-train systems and as such, they provide additional success paths.

Instrumentation required to support safe shutdown is discussed in sections 7.3, 7.4 and 7.5 of the FSAR. These instruments provide timely protective and control functions and provide the operators with the information required to monitor and control the course of an event. For the IPE, some of the instrumentation functions were modeled in the systems and others were accounted for in the dynamic actions and recovery actions of the operators. To the extent that the instruments are included in the system segments that support the functions, they are included in the safe shutdown equipment list. Instrumentation used by the control room operators in recovering from the seismically-induced LOOP and VSBLOCA is discussed in detail in section 4.6 of this report.

For each of the frontline or support systems listed below, the system functions and success criteria and the segments from the system logic models that are required in order to achieve these criteria are listed. In addition the support systems required are also listed. In some instances, a segment from the system logic may be ommited from the required segment list if the component in that segment is duplicated in a segment already included in the list.

4.5.1 Frontline System: Auxiliary Feedwater System

System Functions:

- Provide 300 GPM to steam generator 1 when main feedwater is unavailable/isolated-Top Gate AF1000
- Provide AF flow control to steam generator 1-Top Gate AF2000

For this function, the plant has two configurations - Motor Driven Trains A & B and Turbine Driven Train.

The path for success in the primary path is Motor Driven Train A. The Turbine Driven Train is not included in the walkdown even though it is designed for the LOOP event. However, because the Turbine Driven Pump is less reliable than the redundant Motor Driven trains, the Motor Driven train was chosen as the primary path. (Feed and bleed decay heat removal is the alternative to secondary heat removal via Feedwater)

Segments Required:

AF SEG A1	AF SEG A2	AF SEG A2A
AF SEG A3	AF SEG X01	AF SEG X5
AF SEG X03	AF SEG X14	[FW SEG Z1]
[FW SEG Z7]	[FW SEG Z2]	[FW SEG Z8]
[CF SEG X8]	[CF SEG X9]	

[Bracketed segments from other systems are included here that provide feedwater isolation.]

Support Systems Required:

ESFAS-Gates ES1010 and ES5000
Electric Power-EPA, EPB, EPD-Gates EP1000,EP1110,EP0110 and EP0120
Safety Chilled Water Train A-Gate CH1000

4.5.2 Frontline System: Chemical and Volume Control System

System Functions:

- Maintain seal water injection to the Reactor Coolant Pumps-Gates CSG10,CSG20,CSG30 and CS40
- Provide HP Injection to the RCS on actuation of the ECCS-Gate CSG1000
- Provide HP Recirculation to the RCS-Gate CSG2000

Success of ECCS is assumed to be RHR A to Loops 1 and 2 CL Recirculation, and to Loops 2 and 3 HL Recirculation; SIP A to Loops 1 and 2 IP CL Injection and to Loops 2 and 3 IP HL Injection; CCP A to Loops 1 and 2 Cold Leg Injection. Where only one "intact" loop is required for success, only one loop will be identified for the SSEL.

Segments Required:

CS SEG A1
CS SEG X14
CS SEG W3
CS SEG X20
CS SEG W6
CS SEG X26
CS SEG X4
CS SEG X7
CS SEG X1
CS SEG R1
CS SEG X18
CS SEG W4
CS SEG W7
CS SEG W9
CS SEG X5
CS SEG W8
CS SEG A1L
CS SEG X17
CS SEG W31
CS SEG X21
CS SEG X24
CS SEG X3
CS SEG X6

Support Systems Required:

ESFAS-Gates ES1010,ES1020,ES1030 and ES9000
Electric Power - EPA, EPB, EPD, EPC-Gates EP1000,EP1310,EP1110, EP1PC1-1 and EP0120
Safety Chilled Water - Train A-Gate CH1000
Service Water - Train A-Gate SW1000

4.5.3 Frontline System: Safety Injection System

System Functions:

- Provide Intermediate Head Safety Injection Flow-Gate SI1000
- Provide Intermediate Head Cold Leg Recirculation Flow-Gate SI2000
- Provide Intermediate Head Hot Leg Recirculation Flow-Gate SI3000

Success of ECCS is assumed to be RHR A to Loops 1 and 2 CL Recirculation, and to Loops 2 and 3 HL Recirculation; SIP A to Loops 1 and 2 IP CL Injection and to Loops 2 and 3 IP HL Injection; CCP A to Loops 1 and 2 Cold Leg Injection. Where only one "intact" loop is required for success, only one loop could be identified for the SSEL.

The SI system also has passive injection via the accumulators. These are not included in the SPLD because they are not necessary for success with a VSBLOCA.

Segments Required:

SI SEG BI5
SI SEG BR5
SI SEG CR5
SI SEG AI0
SI SEG XI1
SI SEG AI1
SISEG X12
SI SEG AI2
SI SEG X13
SI SEG AI4
SI SEG AI5
SI SEG XR3
SI SEG AI6
SI SEG XR5
SI SEG AL1
[CT SEG X1]
SI SEG AR6
[CT SEG X2]
SI SEG XR1

[Bracketed segments are from other systems.]

Support Systems Required:

Electric Power - EPA, EPB, EPD-Gates EP1000,EP1110 and EP0120
ESFAS-Gate ES1030
Service Water - Train A-Gate SW1000
Safety Chilled Water - Train A-Gate CH1000

4.5.4 Frontline System: Residual Heat Removal System

System Functions:

- Serves as part of ECCs during Cold Leg LP Recirculation-Gate RHG100
- Serves as part of ECCS during Hot Leg LP Recirculation-Gate RHG201
- Removes heat from the Core and RCS during shutdown-Gate RHG300
- Feeds the suction side of the high head portion of ECCS recirculation-Gate RHA2000

RHR LP Injection was not included as one of the system functions for safe shutdown.

Success of ECCS is assumed to be RHR A to Loops 1 and 2 CL Recirculation, and to Loops 2 and 3 HL Recirculation; SIP A to Loops 1 and 2 IP CL Injection and to Loops 2 and 3 IP HL Injection; CCP A to Loops 1 and 2 Cold Leg Injection. Where only one "intact" loop is required for success, only one loop could be identified for the SSEL.

Segments Required:

RH SEG A1
RH SEG X7
RH SEG X8
RH SEG A13
RH SEG A15
RH SEG A7
RH SEG A2
RH SEG X2
RH SEG A10
RH SEG A11
RH SEG A12
RH SEG A9
RH SEG A5
RH SEG A18
RH SEG X11
RH SEG A2L
RH SEG A3
RH SEG A3C
RH SEG X10
RH SEG A14
RH SEG A16
RH SEG A19
RH SEG A20
RH SEG X20

Support Systems Required:

Electric Power-Gates EP1000,EP1110,EP1310,EP1320,EP1PC1-1 and EP0120
Component Cooling Water System Train A-Gate CC1000
Safety Chilled Water System Train A-Gate CH1000
ESFAS-Gates ES1010,ES1030 and ES23000

4.5.5 Frontline System: Reactor Coolant System

System Functions:

- Reactor Coolant System pressure relief on high RCS pressure
  - one of two PORVs-Gate RC1000
  - two of three safety valves-Gate RC4000
- Reactor Coolant System integrity (following pressure relief)
  - closing of all PORVs and/or block valves-Gate RC3000
  - closing of all safety valves-Gate RC5000
- Reactor Coolant System pressure relief (manual actuation)
  - manual opening of at least one PORV-Gate RC2000

Segments Required:

RC SEG A01
RC SEG A03
RC SEG X1
RC SEG X4A
RC SEG X1A
RC SEG C1
RC SEG C2
RC SEG A3
RC SEG X2

Support Systems Required:

Electric Power - EPB, EPD-Gates EP1320,EP0110,EP1117 EP0010 and EP0040

4.5.6 Support System: Main Steam System

System Functions:

- Isolate steam flow from faulted steam generator via MSIVs-Gate MSG025
- Depressurize/cooldown via the Atmospheric Relief Valves (ARV)-Gate MSG075

The Main Steam Isolation Valves do not close on an 'S' signal or 'BOS'. Steam flow is normally terminated by closure of the Main Turbine Stop/Control valves. The main steam piping downstream of the MISVs is Class 5 and thus is not required to function following the SSE. The procedures for loss of off-site power require the operator to close the MSIVs.

The assumption is that either the Stop/Control Valves close, the operator subsequently closes the MSIVs per procedure following the complete LOOP or the instrumentation for MSLB functions. In the case of MSLB, instrumentation senses the break and closes the MSIVs. This instrumentation is included in the SSEL.

Segments Required:

MS SEG W2
MS SEG X12
MS SEG X27
MS SEG X11
MS SEG W6
MS SEG X10
MS SEG X23
MS SEG X19
MS SEG X9

Support System Required:

Electric Power-EPD-Gate EP0110
ESFAS-Gate ES11000

4.5.7 Support System: Electric Power System

System Functions:

- Provide AC power at rated voltages and frequencies
- Provide DC power at rated voltages

For the scenario under consideration, there is a loss of offsite power for an extended period of time. Emergency Diesel Generators and batteries provide the required AC and DC power to support the various frontline and support systems.

Segments Required:

EPSEG A03
EPSEG A04
EPSEG A05
EPSEG A06
EPSEG A07
EPSEG A08
EPSEG A09
EPSEG A10
EPSEG A11
EPSEG A12
EPSEG A13
EPSEG A14
EPSEG A15
EPSEG A18
EPSEG A19
EPSEG A20
EPSEG P05
EPSEG P10
EPSEG E23
EPSEG E25
EPSEG C01
EPSEG E02
EPSEG E03
EPSEG E06
EPSEG E07
EPSEG E08
EPSEG E10
EPSEG E11
EPSEG E13
EPSEG E14
EPSEG E16
EPSEG E17
EPSEG E18
EPSEG E22
EPSEG P09
EPSEG E33
EPSEGA28
EPSEGA29
EPSEG E35
EPSEG E37
EPSEG E38
EPSEG E40
EPSEG E42
EPSEG G01
EPSEG E32
EPSEG I01
EPSEG K01
EPSEG K02
EPSEG K04
EPSEG N01
EPSEG E27
EPSEG P03
EPSEG E28

Support Systems Required:

ESFAS-Gates ES9000 and ES1010
Component cooling water system - Train A-Gate CC1000
Safety chilled water system - Train A-Gate CH1000

4.5.8 Support System: Reactor Protection System

System Functions:

- Provide ESFAS 'S' signal to ESF equipment-Gates ES1010,1020 and 1030
- Provide actuation signal to MDAFW pump-Gate ES5000
- Provide main steam isolation actuation-Gate ES11000
- Open Trip Breakers on automatic signal-Gate RT 3000
- Open Trip Breakers on manual remote or manual local demand-Gates RT1000 and 2000
- Provide RWST/CT sump valves with automatic open signal-Gate ES23000
- Provide BOS actuation Train A-Gate ES9000

Segments Required:

ESSEG A1
ESSEG D32
ESSEG D42
ESSEG A18
ESSEG A2
ESSEG A29
ESSEG A23
ESSEG A24
ESSEG A25
ESSEG A27
ESSEG A28
ESSEG A3
ESSEG A35
ESSEG D96
ESSEG A5
ESSEG A53
ESSEG A54
ESSEG A55
ESSEG A56
ESSEG A59
ESSEG D47
ESSEG A7
ESSEG A8
ESSEG A83
ESSEG A84
ESSEG A97
ESSEG Y19
ESSEG Y39
ESSEG D16
ESSEG D17
ESSEG D19
ESSEG D22
ESSEG D24
ESSEG D41
ESSEG D43
ESSEG D45
ESSEG D46
ESSEG D91
ESSEG D93
ESSEG D95
ESSEG D48
ESSEG Y40
ESSEG RT3
ESSEG X19
ESSEG RT7
ESSEG X17
ESSEG RT1
ESSEG Y40
ESSEG Y1
ESSEG X39
ESSEG X40
ESSEG X91
ESSEG X93
ESSEG Y17
ESSEG Y93
ESSEG Y91

Support Systems Required:

Electric Power-Gates EP1117,EP1115 and EP0010
Control Room HVAC-Gate VACRAC,VAC100

4.5.9 Support System: Station Service Water

System Functions:

- Provide Cooling to Train 1A Heat Loads-Gates SW1000,SW1100 and SW1150
  - success is operation of one SW pump, one train of SW pump house exhaust fans and appropriate flow path

Segments Required:

SW SEG A1
SW SEG A2
SW SEG A6
SW SEG A4
SW SEG A4B
SW SEG A5
SW SEG X1

Support Systems Required:

Electric Power-ECA, ECB, ECD-Gates EP1000,EP0120 and EP1320
ESFAS-Gate ES9000

4.5.10 Support System: Safety Chilled Water

System Functions:

- Supply chilled water to ESF Train A room coolers-Gate CH1000
  - success is operation of the train A pump, surge tank and associated piping

Segments Required:

CHSEG A1	CHSEG A3
CHSEG A2	CHSEG X1

Support Systems Required:

Electric Power-Gates EP1100 and EP1310
ESFAS-Gates ES9000,ES1030 and ES1010
Component Cooling Water Train A-Gate CC1000

4.5.11 Support System: Component Cooling Water System

System Functions:

- Provide cooling to Safeguards Loop A loads-Gate CC1000

Segments Required:

CCSEG A1	CCSEG A7
CCSEG A3	CCSEG A8
CCSEG X1	CCSEG X3

Support Systems Required:

Service Water System Train A-Gate SW1000
Electric Power EPA, EPB, EPD-Gates EP1000,EP1310 and EP0120
ESFAS-Gates ES1030 and ES9000
Safety Chilled Water System-Gate CH1000

4.5.12 Support System: Control Room HVAC

System Functions:

- Provide cooling to the Control Room-Gates VACRAC and VA100
  - success is one of two trains providing cooling to the Control Room

Segments Required:

VASEG A1 VASEG C1

Support Systems Required:

Electric Power EPB-Gate EP1160
ESFAS-Gates ES9000 and ES1010
Component Cooiing Water-Gate CC1000

4.6 Review of Instrumentation and Human Interactions

As part of this evaluation, a study was done to determine the effect of a seismic event (SSE) on the availability of control room instrumentation and control functions and on the required human interactions. In considering human interactions for purposes of the seismic evaluation, the ground work laid by the IPE work was used. For the seismic evaluation, the human interactions identified in the IPE following the LOOP and VSBLOCA Initiating Events (and other human interactions as well) were evaluated to determine whether the seismic event would impact the ability of the operator to respond adequately to the event, or result in some new situation or require some additional action. That review is summarized here.

4.6.1 Evaluation of Human Interactions

As part of the IPE, a detailed and comprehensive analysis of human interactions was done to assess the failure probability of the human actions required to mitigate an accident or event. The analysis of human actions was based heavily on discussions with operators, review of existing procedures, and interviews of training personnel. The human actions were identified and modeled as appropriate based on a review of the emergency procedures used by operators for the event. Most of the dynamic actions were included in the system fault tree models or in the functional fault trees as part of the accident sequence analysis. This is described in CPSES Calculation No. RXE-SY-CP1/1-020, 'Human Reliability Analysis', and other IPE-related calculations.

Each system notebook that was prepared for the IPE system analysis includes a section titled Operator Interface. That section discusses the operator actions, including dynamic actions and, in some cases, recovery actions, related to operation of the systems under the anticipated accident conditions. These actions include such tasks as operating a valve or starting a pump after an auto-start failure.

For the IPEEE seismic evaluation, this work was used as a starting point. The evaluation was done by the system analyst and an operations representative who is qualified as Senior Reactor Operator (SRO). This operations representative had participated in the IPE work in both the systems analysis and human reliability analysis. The method used was straightforward. The SRO reviewed each of the dynamic actions considered in the IPE and made a qualitative statement as to whether or not the operator could be expected to perform that action following the seismic event. [It should be noted that some of these dynamic actions are required to recover from random failure events, such as a pump failing to automatically start. EPRI NP-6041 provides that for the seismic margins evaluation, random equipment failures(i.e., non-seismically induced failures) need not be assumed to occur during the recovery.]

It was concluded that the operators can be expected to take the required human actions. These actions are included in various plant operating procedures and operators are regularly trained in the use of the procedures. Procedural guidance for mitigating a wide range of situations is provided in the Emergency Operating Procedures, Abnormal Conditions Procedures and System Operating Procedures, among others.

4.6.2 Evaluation of Control Room Instrumentation

The availability of control room instrumentation and controls following a seismic event was also evaluated. This was based on a review of the primary procedures used by control room operators to respond to a seismically-induced LOOP or VSBLOCA initiating event. Each procedure was reviewed step-by-step and the availability of control room instruments and controls necessary to effect the particular step of the recovery was determined based on the seismic qualification of the control/ instrument. Non-seismic instruments were assumed to be unavailable and the availability of other instruments to provide the equivalent information was determined. It was also determined when the indication/control was not required for mitigation of the specific event under consideration.

The procedures that were reviewed include the following:

EOP-0.0A/B, Reactor Trip or Safety Injection

EOP-1.0A/B, Loss of Reactor or Secondary Coolant

EOS-1.2A/B, Post LOCA Cooldown and Depressurization

EOS-0.1A/B, Reactor Trip Response

EOS-0.2A/B, Natural Circulation Cooldown

This procedure review is documented in Attachment A. The result of this effort is a list of control room instruments available to the operator following the seismic event. A partial listing (essentially train A related) is shown in Table 5-3. Most of the primary indications and controls indicated in the procedures to be used by the operators to monitor and control the event are directly available. Some indications are not directly available to the operators but the required information is available indirectly from other instruments. Local indications and controls are also available to outside-of-control-room operators for many functions.

Based on the evaluation of human interactions considered in the IPE and the evaluation of control room instrumentation, it is concluded that the operators can monitor plant functions following a seismic event and operate the systems and equipment identified in the primary and alternate safe shutdown paths to control the course of the event.

[For purposes of the walkdown, Control Room benchboards and cabinets and associated instruments will be treated as bulk items and will be walked down on a sample basis. Part of this walkdown will be a paper walkdown.]

5. Results

The results of this work are presented in three parts: 1) the CPSES Seismic Safe Shutdown Equipment List, shown in Tables 5-1 and 5-4, 2) the CPSES Walkdown Equipment List, shown in Table 5-2, and the ERG Control Room Instrument List, shown in Table 5-3. Each of these is discussed below.

CPSES Seismic Safe Shutdown Equipment List

Once the segments that are required to provide the system functions and associated success criteria were determined, the individual components related to these segments were determined. The results of this relation is provided in Tables 5-1 and 5-4. In Table 5-4, the components are listed by system and the segment with which it is associated is listed.

There are some components for which there are no associated segments. In general, these are instruments that are associated with operator interface that were not modeled with the system. They were identified in the Operator Interface section of the system notebooks and added to the list. These instruments provide information to the operators in the form of indication and alarms. In other instances, the instrument listed includes a sub-component that was modeled but the associated segment is not necessarily listed. Many of the instruments that provide protective and control functions that were modeled in the IPE are relays and relay-type components or sub-components located in control room cabinets. These are not included per se in the SSEL consistent with the guidelines for the reduced-scope plant. The control room was walked down. Instrumentation cabinets that house these relays and instruments were a primary focus of this walkdown. In all, the instruments that are included in the SSEL provide a fairly representative sample of instrument types used at CPSES.

There are other components for which there are no associated segments. These have to do with the Service Water System valves that provide a long term water source to Auxiliary Feedwater and Valves associated with feedwater isolation.

CPSES Walkdown Equipment List

The Walkdown Equipment List, Table 5-2, is a subset of the SSEL. The SSEL includes components that were excluded from walkdown consistent with the guidelines. In general, where a component type was similar to others in the SSEL, only one of those components was walked down. Valves that are locked in place or not required to change position, manual valves and flow elements were walked down with the piping. Certain components, in particular large circuit breakers, were walked down with the switchgear cabinet using the rule of the box. A notable exception to the rule of the box is the walkdown of the Emergency Diesel Generators. The walkdown list shows the DG as a single item. In fact, the DG includes many associated components. These were identified by tag number and a large number of these components were walked down for anchorage and spacial interaction. These associated components are not included in the SSEL.

ERG Control Room Instrument List

The instruments that are used by the control room operators to monitor and control the course of the seismically-induced LOOP and VSBLOCA were identified as discussed in section 4.6 of this report. A list of those instruments is provided in Table 5-3. These instruments were walked-by as part of the control room walk down; however, they are not necessarily included in the SSEL. The basis for this list is discussed in detail in Attachment A.

Results Tables

The tables that present the results of the work are included here. These tables are as follows:

Table 5-1	CPSES Seismic Safe Shutdown Equipment List (SSEL)
Table 5-2	CPSES Seismic Walkdown Equipment List
Table 5-3	ERG Control Room Instrument List-Seismic Margin Evaluation
Table 5-4	Seismic Safe Shutdown Equipment List (SSEL) Listed by Segment

6. References

1. U.S. Nuclear Regulatory Commission, "Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities," NUREG-1407, Final Report, June 1991.

2. Electric Power Research Institute, "A Methodology for Assessment of Nuclear Power Plant Seismic Margin (Revision 1)," EPRI NP-6041-SL, Project 2722-23, Final Report, August 1991.

3. TU Electric, "Individual Plant Examination-Comanche Peak Steam Electric Station," RXE-92-01, Volumes I and II, 1992.

4. TU Electric, "Comanche Peak Steam Electric Station (CPSES) Final Safety Analysis Report," As Revised Through Amendment 91, April 1994.

7. Attachments

Attachment A	Evaluation of the Availability of Instrumentation and Control Functions for Control Room Operators and Evaluation of Human Interactions given the Safe Shutdown Earthquake for the IPEEE Seismic Margin Evaluation
Attachment B	Containment Review for Comanche Peak Steam Electric Station-Seismic IPEEE

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
** SYSTEM AF					
1-FT-2463A	STEAM GENERATOR 1-01 AUXILIARY FEEDWATER FLOW TRANSMITTER 2463A	1-100B	SB	0852	I
1-HV-2480	MD AFW PUMP 1-01 SSW SUCTION ISOLATION VALVE	1-072	SG	790	I
1-HV-2491B	MD AFW PMP 1-01 DISCH TO SG 1-01 ISOL VLV	1-100B	SG	0852	I
1-PT-2453	MD AUXILIARY FEEDWATER PUMP 1-01 DISCHARGE PRESS TRANSMITTER	1-072	SG	0790	I
1-PT-2475	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 1-01 SUCTION PRESS TRANSMITTER	1-072	SG	0790	I
1-PV-2453A	MD AFW PMP 1-01 DISCH TO SG 1-01 CTRL VLV	1-072	SG	0790	I
1AF-0007	CST 1-01 TO MD AFW PMP 1-01/1-02 ISOL VLV	1-085D	SG	0796	I
1AF-0013	CST TO MD AFW PMP 1-01 SUCT VLV	1-071	SG	0790	I
1AF-0014	CST TO MD AFW PMP 1-01 SUCT CHK VLV	1-072	SG	0790	I
1AF-0065	MD AFW PMP 1-01 DISCH CHK VLV	1-072	SG	0790	I
1AF-0066	MD AFW PMP 1-01 DISCH ISOL VLV	1-072	SG	0790	I
1AF-0074	MD AFW PMP 1-01 DISCH TO SG 1-01 UPSTRM ISOL VLV	1-072	SG	0790	I
1AF-0075	MD AFW PMP 1-01 DISCH TO SG 1-01 CHK VLV	1-100B	SG	0852	I
1AF-0121	MD AFW PMP 1-01 DISCH TO SG 1-01 DNSTRM ISOL VLV	1-072	SG	0790	I
1AF-0215	MD AFW PMP 1-01 FCV TO SG 1-01 AIR SPLY UPSTRM CHK VLV	1-072	SG	0790	I
1AF-0216	MD AFW PMP 1-01 FCV TO SG 1-01 AIR SPLY DNSTRM CHK VLV	1-072	SG	0790	I
CP1-AFAPMD-01	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 1-01	1-072	SG	0790	I
CP1-AFATCS-01	CONDENSATE STORAGE TANK 1-01	X-YARD	YD	0810	I
CP1-CIATAF-07	MD AFW PUMP 1-01 DISCHARGE TO SG 1-01 FCV AIR ACCUMULATOR 1-07	1-072	SG	0790	I
CP1-CIATAF-14	MD AFW PUMP 1-01 DISCHARGE TO SG 1-01 FCV AIR ACCUMULATOR 1-14	1-072	SG	0790	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
** SYSTEM CC					
1-FT-4536A	CCW HEAT EXCHANGER 1-01 OUTLET FLOW TRANSMITTER	X-175	AB	0790	I
1-FT-4556	RHR HEAT EXCHANGER 1-01 CCW RETURN FLOW TRANSMITTER	1-070	SG	0790	I
1-HV-4512	U1 SFGD LOOP A CCW RET VLV	X-207	AB	0810	I
1-HV-4514	U1 SFGD LOOP A CCW SPLY VLV	X-175	AB	0790	I
1-HV-4524	U1 NON-SFGD LOOP CCW DNSTRM RET VLV	X-207	AB	0810	I
1-HV-4525	U1 NON-SFGD LOOP CCW UPSTRM RET VLV	X-207	AB	0810	I
1-HV-4526	U1 NON-SFGD LOOP CCW UPSTRM SPLY VLV	X-198	AB	0810	I
1-HV-4527	U1 NON-SFGD LOOP CCW DNSTRM SPLY VLV	X-198	AB	0810	I
1-HV-4572	RHR HX 1-01 CCW RET VLV	1-070	SG	0790	I
1-LB-4500A-1	CCW SURGE TK LVL EMPTY/INTERLOCK BISTABLE	X-135	CB	0830	I
1-LT-4500	COMPONENT COOLING WATER SURGE TANK 1-01 TRAIN A LEVEL TRANSMITTER	X-245	AB	0874	I
1-PT-4520	COMPONENT COOLING WATER PUMP 1-01 DISCHARGE PRESSURE TRANSMITTER	X-205	AB	0810	I
1-PT-4552	SAFETY CHILLER 1-05 CHILLER GAS PRESSURE TRANSMITTER	X-115A	CB	0778	I
1-PV-4552	SFTY CHLR 1-05 CCW RET PCV	X-115A	CB	0778	I
1-PV-4552	SFTY CHLR 1-05 CCW RET PCV	X-115A	CB	0778	I
1-TE-4530	CCW HEAT EXCHANGER 1-01 OUTLET TEMPERATURE ELEMENT 4530	X-175	AB	0790	I
1-TE-4557	RHR HEAT EXCHANGER 1-01 CCW RETURN TEMPERATURE ELEMENT	1-070	SG	0790	I
1CC-0021	CCW SRG TK 1-01 TRN A OUT ISOL VLV	X-245	AB	0874	I
1CC-0023	CCW PMP 1-01 SUCT ISOL VLV	X-205	AB	0810	I
1CC-0031	CCW PMP 1-01 DISCH CHK VLV	X-205	AB	0810	I
1CC-0032	CCW PMP 1-01 DISCH ISOL VLV	X-205	AB	0810	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1CC-0033	CCW HX 1-01 IN ISOL VLV	X-205	AB	0810	I
1CC-0040	CCW HX 1-01 OUT ISOL VLV	X-175	AB	0790	I
1CC-0099	RHR PMP 1-01 SL CLR CCW RET ISOL VLV	1-056B	SG	0773	I
1CC-0102	RHR PMP 1-01 SL CLR CCW SPLY ISOL VLV	1-056B	SG	0773	I
1CC-0109	RHR HX 1-01 CCW SPLY ISOL VLV	1-070	SG	0790	I
1CC-0203	SFTY CHLR 1-05 CCW SPLY ISOL VLV	X-115A	CB	0778	I
1CC-0207	CR A\C UNIT X-01 CCW SPLY ISOL VLV	X-150	CB	0854	I
1CC-0253	SFTY CHLR 1-05 CCW RET ISOL VLV	X-115A	CB	0778	I
1CC-0256	CR A\C UNIT X-01 CCW RET ISOL VLV	X-150	CB	0854	I
1CC-0282	RHR PMP 1-01 SL CLR CCW RET FLO IND SW UPSTRM 4548 ISOL VLV	1-056B	SG	0773	I
1CC-0283	RHR PMP 1-01 SL CLR CCW RET FLO IND SW DNSTRM 4548 ISOL VLV	1-056B	SG	0773	I
1CC-0976	UPS A\C UNIT X-01 U1 CCW SPLY HDR UPSTRM ISOL VLV	X-115A	CB	0778	I
1CC-0994	CR A\C UNIT X-01/X-02 CCW RET ISOL VLV	X-241	AB	0852	I
1CC-0995	CR A\C UNIT X-01/X-02 CCW SPLY ISOL VLV	X-241	AB	0852	I
1CC-1079	CIRCLE SEAL CHECK VALVE 1/2" FNPT	X-115A	CB	0778	I
1CC-1080	CIRCLE SEAL CHECK VALVE 1/2" FNPT	X-115A	CB	0778	I
CP1-CCAHHX-01	COMPONENT COOLING WATER HEAT EXCHANGER 1-01	X-175	AB	0790	I
CP1-CCAPCC-01	COMPONENT COOLING WATER PUMP 1-01	X-205	AB	0810	I
CP1-CCATST-01	COMPONENT COOLING WATER SURGE TANK 1-01	X-245	AB	0874	I
CP1-CIATCC-01	SAFETY CHILLER 1-05 CCW RETURN PCV AIR ACCUMULATOR 1-01	X-115A	CB	0778	I
XCC-0232	UPS A\C UNIT X-01 CCW SPLY DNSTRM ISOL VLV	X-113	CB	0778	I
XCC-0233	UPS A\C UNIT X-01 CCW RET ISOL VLV	X-115	CB	0778	I
** SYSTEM CHS					
1-LS-6712	SAFETY CHILLED WATER SURGE TANK 1-01 LEVEL SWITCH 6712	X-245	AB	0874	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1CH-0332	SFTY CH WTR SRG TK 1-01 TRN A ISOL VLV	X-245	AB	0874	I
1CH-0334	SFTY CH WTR RECIRC PMP 1-05 SUCT ISOL VLV	X-115A	CB	0778	I
1CH-0347	SFTY CHLR 1-05 CH WTR RET ISOL VLV	X-115A	CB	0778	I
1CH-0355	CCW PMP EMER FN COIL UNIT 1-09 CH WTR SPLY ISOL VLV	X-205	AB	0810	I
1CH-0356	CCW PMP EMER FN COIL UNIT 1-09 CH WTR RET ISOL VLV	X-205	AB	0810	I
1CH-0357	CCP EMER FN COIL UNIT 1-03 CH WTR SPLY ISOL VLV	X-200	AB	0810	I
1CH-0358	CCP EMER FN COIL UNIT 1-03 CH WTR RET ISOL VLV	X-200	AB	0810	I
1CH-0368	RHR PMP EMER FN COIL UNIT 1-01 CH WTR SPLY ISOL VLV	1-056B	SG	0773	I
1CH-0369	RHR PMP EMER FN COIL UNIT 1-01 CH WTR RET ISOL VLV	1-056B	SG	0773	I
1CH-0373	AFW PMP EMER FN COIL UNIT 1-07 SPLY ISOL VLV	1-072	SG	0790	I
1CH-0374	AFW PMP EMER FN COIL UNIT 1-07 RET ISOL VLV	1-072	SG	0790	I
1CH-0378	ELEC AREA EMER FN COIL UNIT 1-17 CH WTR SPLY ISOL VLV	1-085A	SG	0810	I
1CH-0379	ELEC AREA EMER FN COIL UNIT 1-17 CH WTR RET ISOL VLV	1-085A	SG	0810	I
1CH-0380	ELEC AREA EMER FN COIL UNIT 1-18 CH WTR SPLY ISOL VLV	1-085A	SG	0810	I
1CH-0381	ELEC AREA EMER FN COIL UNIT 1-18 CH WTR RET ISOL VLV	1-085A	SG	0810	I
1CH-0388	SFTY U1 CH WTR TRN A RET HDR ISOL VLV	X-207	AB	0810	I
1CH-0451	SFTY CH WTR RECIRC PMP 1-05 DISCH ISOL VLV	X-115A	CB	0778	I
CP1-CHAPCP-05	SAFETY CHILLED WATER RECIRC PUMP 1-05	X-115A	CB	0778	I
CP1-CHATST-01	SAFETY CHILLED WATER SURGE TANK 1-01	X-245	AB	0874	I
CP1-CHCICE-05	SAFETY CHILLER 1-05	X-115A	CB	0778	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
CP1-CHFHCH-01	RHR PUMP RM EMER FAN COIL UNIT 1-01 CHILLED WATER SPLY FLEX HOSE 1-01	1-053	SG	0773	I
CP1-CHFHCH-02	RHR PUMP RM EMER FAN COIL UNIT 1-01 CHILLED WATER RET FLEX HOSE 1-02	1-053	SG	0773	I
CP1-CHFHCH-05	CCP RM EMER FAN COIL UNIT 1-03 CHILLED WATER RET FLEX HOSE 1-05	X-200	AB	0810	I
CP1-CHFHCH-06	CCP RM EMER FAN COIL UNIT 1-03 CHILLED WATER SPLY FLEX HOSE 1-06	X-200	AB	0810	I
CP1-CHFHCH-09	SI PUMP RM EMEP FAN COIL UNIT 1-05 CHILLED WATER SPLY FLEX HOSE 1-09	1-062	SG	0773	I
CP1-CHFHCH-10	SI PUMP RM EMER FAN COIL UNIT 1-05 CHILLED WATER RET FLEX HOSE 1-10	1-062	SG	0773	I
CP1-CHFHCH-13	AFW PUMP RM EMER FAN COIL UNIT 1-07 CHILLED WATER SPLY FLEX HOSE 1-13	1-072	SG	0790	I
CP1-CHFHCH-14	AFW PUMP RM EMER FAN COIL UNIT 1-07 CHILLED WATER RET FLEX HOSE 1-14	1-072	SG	0790	I
CP1-CHFHCH-17	CCW PUMP RM EMER FAN COIL UNIT 1-09 CHILLED WATER RET FLEX HOSE 1-17	X-205	AB	0810	I
CP1-CHFHCH-18	CCW PUMP RM EMER FAN COIL UNIT 1-09 CHILLED WATER SPLY FLEX HOSE 1-18	X-205	AB	0810	I
CP1-CHFHCH-33	ELEC AREA EMERGENCY FAN COIL UNIT 1-17 CH WATER SPLY FLEX HOSE 1-33	1-085A	SG	0810	I
CP1-CHFHCH-34	ELEC AREA EMERGENCY FAN COIL UNIT 1-17 CH WATER RET FLEX HOSE 1-34	1-085A	SG	0810	I
CP1-CHFHCH-35	ELEC AREA EMERGENCY FAN COIL UNIT 1-18 CH WATER SPLY FLEX HOSE 1-35	1-085A	SG	0810	I
CP1-CHFHCH-36	ELEC AREA EMERGENCY FAN COIL UNIT 1-18 CH WATER RET FLEX HOSE 1-36	1-085A	SG	0810	I
** SYSTEM CS					
1-8100	U1 RCP SL WTR RET ISOL VLV	1-077A	SG	0810	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1-8106	U1 CHRG PMP TO RCS CNTMT ISOL VLV	1-077B	SG	0810	I
1-8110	CCP 1-01/1-02 DNSTRM MINIFLOW VLV	X-203	AB	0810	I
1-8112	U1 RC PMP SEAL WTR RET ISOL VLV	1-154D	RB	0808	I
1-8152	U1 LTDN CNTMT ORC ISOL VLV	1-077B	SG	0810	I
1-8160	U1 LTDN CNTMT IRC ISOL VLV	1-154A	RB	0808	I
1-8351A	RC PMP 1-01 SL WTR INJ VLV	1-077B	SG	0810	I
1-8351B	RC PMP 1-02 SL WTR INJ VLV	1-077B	SG	0810	I
1-8351C	RC PMP 1-03 SL WTR INJ VLV	1-077A	SG	0810	I
1-8351D	RC PMP 1-04 SL WTR INJ VLV	1-077A	SG	0810	I
1-8471A	CCP 1-01 SUCT VLV	X-203	AB	0810	I
1-8481A	CCP 1-01 DISCH CHK VLV	X-203	AB	0810	I
1-8485A	CCP 1-01 DISCH VLV	X-203	AB	0810	I
1-8511A	CCP 1-01 ALT MINIFLO ISOL VLV	X-209	AB	0822	I
1-8512A	CCP 1-02 ALT MINIFLO ISOL VLV	X-209	AB	0822	I
1-8546	RWST 1-01 TO CHRG PMP SUCT CHK VLV	X-203	AB	0810	I
1-8801A	CCP 1-01/1-02 SI ISOL VLV 8801A	1-077B	SG	0810	I
1-8804A	RHR PMP 1-01 TO CCP SUCT VLV	1-067	SG	0790	I
1-8969A	RHR TO CCP 1-01/1-02 SUCT CHK VLV	1-062F	SG	0785	I
1-8969B	RHR TO SI PMP 1-01/1-02 SUCT CHK VLV	1-062E	SG	0785	I
1-HCV-0182	U1 RC PMP SL WTR PRESS CTRL VLV	X-203	AB	0810	I
1-HV-8220	U1 CHARGE PMP SUCT HI PNT VNT VLV 8220	1-077A	SG	0810	I
1-LCV-0112B	VCT 1-01 TO CHRG PMP SUCT VLV 0112B	X-203	AB	0810	I
1-LCV-0112D	RWST 1-01 TO CHRG PMP SUCT VLV 0112D	X-207	AB	0810	I
1CS-8345	U1 RC PMP SL WTR INJ ISOL VLV	X-203	AB	0810	I
1CS-8350A	RC PMP 1-01 SL WTR INJ CHK VLV	1-154I	RB	0808	I
1CS-8350B	RC PMP 1-02 SL WTR INJ CHK VLV	1-154J	RB	0812	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1CS-8350C	RC PMP 1-03 SL WTR INJ CHK VLV	1-154K	RB	0812	I
1CS-8350D	RC PMP 1-04 SL WTR INJ CHK VLV	1-154L	RB	0812	I
1CS-8352A	RC PMP 1-01 SL WTR INJ ISOL VLV	1-154D	RB	0808	I
1CS-8352B	RC PMP 1-02 SL WTR INJ ISOL VLV	1-154A	RB	0808	I
1CS-8352C	RC PMP 1-03 SL WTR INJ ISOL VLV	1-154D	RB	0808	I
1CS-8352D	RC PMP 1-04 SL WTR INJ ISOL VLV	1-154D	RB	0808	I
1CS-8367A	RC PMP 1-01 SL INJ IMB CHK VLV	1-154I	RB	0808	I
1CS-8367B	RC PMP 1-02 SL INJ IMB CHK VLV	1-154J	RB	0812	I
1CS-8367C	RC PMP 1-03 SL INJ IMB CHK VLV	1-154K	RB	0812	I
1CS-8367D	RC PMP 1-04 SL INJ IMB CHK VLV	1-154L	RB	0812	I
1CS-8368A	RC PMP 1-01 SL INJ IRC CHK VLV	1-154A	RB	0808	I
1CS-8368B	RC PMP 1-02 SL INJ IRC CHK VLV	1-154A	RB	0808	I
1CS-8368C	RC PMP 1-03 SL INJ IRC CHK VLV	1-154D	RB	0808	I
1CS-8368D	RC PMP 1-04 SL INJ IRC CHK VLV	1-154D	RB	0808	I
1CS-8369A	RC PMP 1-01 SL INJ ISOL VLV	1-077B	SG	0810	I
1CS-8369B	RC PMP 1-02 SL INJ ISOL VLV	1-077B	SG	0810	I
1CS-8369C	RC PMP 1-03 SL INJ ISOL VLV	1-077A	SG	0810	I
1CS-8369D	RC PMP 1-04 SL INJ ISOL VLV	1-077A	SG	0810	I
1CS-8382B	RC PMP SL WTR INJ FILT 1-02 OUT ISOL VLV UVG-34	X-230	AB	0842	I
1CS-8384B	RC PMP SL WTR INJ FILT 1-02 IN ISOL VLV UVG-34	X-230	AB	0842	I
1CS-8387A	CCP 1-01 ALTERNATE SEAL INJECTION VALVE	X-203	AB	0810	I
TBX-CSAPCH-01	CENTRIFUGAL CHARGING PUMP 1-01	X-200	AB	0810	I
TBX-CSFLSI-02	REACTOR COOLANT PUMP SEAL WATER INJECTION FILTER 1-02	X-230	AB	0842	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
** SYSTEM DG					
1EG1	DG 1-01 TO 6.9 KV SWGR 1EA1 EMERGENCY FEEDER BREAKER	1-083	SG	0810	I
CP1-MEDGEE-01	DIESEL GENERATOR 1-01	1-084	SG	0810	I
** SYSTEM DO					
1-LS-3375A	DIESEL GENERATOR 1-01 FUEL OIL DAY TANK 1-01 LEVEL SWITCH 3375A	1-099D	SG	0844	I
1DO-0002	DG 1-01 FO XREF PMP 1-01 DISCH VLV	1-084	SG	0810	I
1DO-0004	DG 1-01 FO XFER PMP 1-01 DISCH CHK VLV	1-084	SG	0810	I
1DO-0029	DG 1-01 FO DAY TK 1-01 OUT VLV	1-099B	SG	0844	I
1DO-0049	DG 1-01 FO DAY TK 1-01 XFER HDR CHK VLV	1-099B	SG	0844	I
CP1-DOAPFT-01	DIESEL GENERATOR 1-01 FUEL OIL TRANSFER PUMP 1-01	1-084	SG	0810	I
CP1-DOATDT-01	DIESEL GENERATOR 1-01 FUEL OIL DAY TANK 1-01	1-099D	SG	0844	I
CP1-DOATST-01	DIESEL GENERATOR 1-01 FUEL OIL STORAGE TANK 1-01	X-YARD	YD	0810	I
CP1-DOSRTP-01	DIESEL GENERATOR 1-01 FUEL OIL TRANSFER PUMP STRAINER 1-01	1-084	SG	0810	I
** SYSTEM ECI					
1EB1-1/2HR/BKR	118 VAC SAFEGUARDS BOP INVERTER IV1EC1 SUPPLY BREAKER	1-083	SG	0810	I
1EB1-1/9JR/BKR	118 VAC SAFEGUARDS BOP INVERTER IV1EC3 SUPPLY BREAKER	1-083	SG	0810	I
1EC1/00/BKR-1	IV1EC1 TO 118 VAC INSTRUMENT DISTR PANEL 1EC1 PREFERRED FEEDER BREAKER	X-133	CB	0807	I
1EC5/11/BKR	CIRCUIT BREAKER FOR POWER TO INSTR PNL BD XEC1-1	X-133	CB	0807	I
1ED1/2-10/BKR	118 VAC REACTOR PROTECTION SYSTEM (CH I) INVERTER IV1PC1 SUPPLY BREAKE	X-121	CB	0792	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1ED3/2-11/BKR	118 VAC REACTOR PROCTECTION SYSTEM (CH III) INVERTER IV1PC3 SUPPLY BKR	X-121	CB	0792	I
1PC1/00/BKR-1	IV1PC1 TO 118 VAC INSTRUMENT DISTR PANEL 1PC1 PREFERRED FEEDER BREAKER	X-133	CB	0807	I
1PC3/00/BKR-1	IV1PC3 TO 118 VAC INSTRUMENT DISTR PANEL 1PC3 PREFERRED FEEDER BREAKER	X-133	CB	0807	I
CP1-ECDPEC-01	1EC1 118V AC INST DIST PNLBD TRAIN A	X-133	CB	0807	I
CP1-ECDPEC-11	1EC5 118VAC DIST PNL	X-133	CB	0807	I
CP1-ECDPPC-01	1PC1 118VAC INST DP CH1 GROUP 1	X-133	CB	0807	I
CP1-ECDPPC-03	1PC3 118VAC INST DP CH3 GROUP 3	X-133	CB	0807	I
CP1-ECIVEC-01	118 VAC SAFEGUARDS BALANCE OF PLANT INVERTER IV1EC1	X-121	CB	0792	I
CP1-ECIVEC-03	118 VAC SAFEGUARDS BALANCE OF PLANT INVERTER IV1EC3	X-121	CB	0792	I
CPX-ECDPEC-01	118V AC INST DIST PNLBD XEC1-1	X-133	CB	0807	I
TBX-ESELIV-01	118 VAC REACTOR PROTECTION SYSTEM INVERTER IV1PC1	X-121	CB	0792	I
TBX-ESELIV-03	118 VAC REACTOR PROTECTION SYSTEM INVERTER IV1PC3	X-121	CB	0792	I
** SYSTEM EI					
1-CR01/15Q	+15V (ESFAS) POWER SUPPLY	X-135	CB	0830	I
1-CR01/48Q	48V (ESFAS) POWER SUPPLY	X-135	CB	0830	I
** SYSTEM EPA					
1EA1/27-1A	PROTECTIVE RELAY	1-083	SG	0810	I
1EA1/27-1B	PROTECTIVE RELAY	1-083	SG	0810	I
1EA1/27-1C	PROTECTIVE RELAY	1-083	SG	0810	I
27-2A/1EA1	PROTECTIVE RELAY	1-083	SG	0810	I
27-2B/1EA1	PROTECTIVE RELAY	1-083	SG	0810	I
27-2X1/1EA1	TIME DELAY RELAY	1-083	SG	0810	I
272A1EA1112	UNDER-VOLTAGE RELAY 27-2A/1EA1 CONTACT	1-083	SG	0810	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
272B1EA1112	UNDER-VOLTAGE RELAY 27-2A/1EA1 CONTACT	1-083	SG	0810	I
272X11EA115	UNDER-VOLTAGE RELAY 27-2A/1EA1 CONTACT	1-083	SG	0810	I
272X11EA126	UNDER-VOLTAGE RELAY 27-2A/1EA1 CONTACT	1-083	SG	0810	I
BT-1EA1	6.9 KV SWGR 1EA1 INNER BUS TIE BREAKER	1-083	SG	0810	I
CP1-EPSWEA-01	6.9 KV SWITCHGEAR 1EA1	1-083	SG	0810	I
PT/1EA1-1	POTENTIAL TRANSFORMER BUS (1EA1-1)	1-083	SG	0810	I
PT/1EA1-2	POTENTIAL TRANSFORMER (BUS 1EA1-2)	1-083	SG	0810	I
** SYSTEM EPB					
1EB1-1	T1EB1 TO 480 VAC SWITCHGEAR 1EB1 PREFERRED FEEDER BREAKER	1-083	SG	0810	I
1EB1/3C/BKR	1EB1 TO 480 VAC MCC XEB1-2 FEEDER BREAKER	1-083	SG	0810	I
1EB1/3C/COMP	480V SWGR BUS 1EB1 COMPARTMENT	1-083	SG	0810	I
1EB1/3D/BKR	1EB1 TO 480 VAC MCC 1EB1-1 FEEDER BREAKER	1-083	SG	0810	I
1EB1/3D/COMP	480V SWGR BUS 1EB1 COMPARTMENT	1-083	SG	0810	I
1EB3-1	T1EB3 TO 480 VAC SWITCHGEAR 1EB3 PREFERRED FEEDER BREAKER	1-083	SG	0810	I
1EB3/7C/BKR	1EB3 TO 480 VAC MCC XEB3-3 FEEDER BREAKER	1-083	SG	0810	I
1EB3/7C/COMP	480V SWGR BUS 1EB3 COMPARTMENT	1-083	SG	0810	I
1EB3/7D/BKR	1EB3 TO 480 VAC MCC 1EB3-4 FEEDER BREAKER	1-083	SG	0810	I
1EB3/8C/BKR	1EB3 TO 480 VAC MCC 1EB3-2 FEEDER BREAKER	1-083	SG	0810	I
1EB3/8D/BKR	1EB3 TO 480 VAC MCC 1EB3-3 FEEDER BREAKER	1-083	SG	0810	I
1EB3/9D/BKR	1EB3 TO 480 VAC MCC 1EB3-1 FEEDER BREAKER	1-083	SG	0810	I
CP1-EPSWEB-01	480 VAC SWITCHGEAR 1EB1	1-083	SG	0810	I
CP1-EPSWEB-03	480 VAC SWITCHGEAR 1EB3	1-083	SG	0810	I
CP1-EPTRET-01	6900/480 VAC TRANSFORMER (1EA1/1EB1) T1EB1	1-083	SG	0810	I
CP1-EPTRET-03	6900/480 VAC TRANSFORMER (1EA1/1EB3) T1EB3	1-083	SG	0810	I
T1EB1	6900/480 VAC TRANSFORMER TIEB1 (1EA1/1EB1) FEEDER	1-083	SG	0810	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
T1EB3	1EA3 TO 6900/480 VAC TRANSFORMER T1EB3 FEEDER BREAKER	1-083	SG	0810	I
** SYSTEM EPC					
1EB3-3/2E/COMP	480V MCC BUS 1EB3-3 COMPARTMENT	X-275	SI	0796	I
CP1-EPMCEB-01	480 VAC MOTOR CONTROL CENTER 1EB1-1	1-083	SG	0810	I
CP1-EPMCEB-03	480 VAC MOTOR CONTROL CENTER 1EB3-1	1-070	SG	0790	I
CP1-EPMCEB-05	480 VAC MOTOR CONTROL CENTER 1EB3-2	1-083	SG	0810	I
CP1-EPMCEB-07	480 VAC MOTOR CONTROL CENTER 1EB3-3	X-275	SI	0796	I
CP1-EPMCEB-09	480 VAC MOTOR CONTROL CENTER 1EB3-4	1-084	SG	0810	I
CPX-EPMCEB-01	480 VAC MOTOR CONTROL CENTER XEB1-2	X-241	AB	0852	I
CPX-EPMCEB-03	480 VAC MOTOR CONTROL CENTER XEB3-2	X-241	AB	0852	I
XEB1-2/1M/BKR-2	SWGR 2EB1 TO 480 VAC MCC XEB1-2 ALTERNATE FEEDER BREAKER	X-241	AB	0852	I
** SYSTEM EPD					
1EB1-1/2M/BKR	125 VDC BATTERY CHARGER BC1ED1-1 SUPPLY BREAKER	1-083	SG	0810	I
1EB1-1/9G/BKR	125 VDC BATTERY CHARGER BC1ED3-1 SUPPLY BREAKER	1-083	SG	0810	I
1ED1/1-1/DSW	125 VDC STATION BATTERY BT1ED1 FUSED DISCONNECT SWITCH	X-121	CB	0792	I
1ED1/1-5/DSW	125 VDC DISTRIBUTION PANEL 1ED1-2 FUSED DISCONNECT SWITCH	X-121	CB	0792	I
1ED1/1-7/DSW	125 VDC DISTRIBUTION PANEL 1ED1-1 FUSED SWITCH	X-121	CB	0792	I
1ED1/2-8/BKR	125 VDC BATTERY CHARGER BC1ED1-1 FEEDER BREAKER	X-121	CB	0792	I
1ED3/1-1/DSW	125 VDC BATTERY BT1ED3 FUSED DISCONNECT SWITCH	X-121	CB	0792	I
1ED3/2-8/BKR	125 VDC BATTERY CHARGER BC1ED3-1 FEEDER BREAKER	X-121	CB	0792	I
CP1-ECDPED-01	125 VDC DISTRIBUTION PANEL 1ED1-1	X-133	CB	0807	I
CP1-ECDPED-03	125 VDC DISTRIBUTION PANEL 1ED1-2	1-083	SG	0810	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
CP1-EPBCED-01	125 VDC BATTERY CHARGER BC1ED1-1	X-121	CB	0792	I
CP1-EPBCED-05	125 VDC BATTERY CHARGER BC1ED3-1	X-121	CB	0792	I
CP1-EPBTED-01	125 VDC STATION BATTERY BT1ED1	X-124	CB	0792	I
CP1-EPBTED-03	125 VDC STATION BATTERY BT1ED3	X-124	CB	0792	I
CP1-EPSWED-01	125 VDC SWITCHBOARD 1ED1	X-121	CB	0792	I
CP1-EPSWED-03	125 VDC SWITCHBOARD 1ED3	X-121	CB	0792	I
** SYSTEM ES					
1-A203-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A203-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A204-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A213-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A307-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A308-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A313-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A315-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A316-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A416-A	UNIVERSAL LOGIC BOARD/SSPS	X-135	CB	0830	I
1-A516-A	SAFEGUARDS OUTPUT/SSPS	X-135	CB	0830	I
1-A517-A	SAFEGUARDS OUTPUT/SSPS	X-135	CB	0830	I
1-A518-A	SAFEGUARDS OUTPUT/SSPS	X-135	CB	0830	I
1-A518-A	SAFEGUARDS OUTPUT/SSPS	X-135	CB	0830	I
1-K110-A	INPUT RELAY/RWST LO-LO LEVEL (I)	X-135	CB	0830	I
1-K110-A	INPUT RELAY/RWST LO-LO LEVEL (I)	X-135	CB	0830	I
1-K122-A	INPUT RELAY/STM GEN LO-LO WATER LEVEL BISTABLE-LOOP 1	X-135	CB	0830	I
1-K131-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (I)	X-135	CB	0830	I
1-K131-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (I)	X-135	CB	0830	I
1-K131-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (I)	X-135	CB	0830	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1-K133-A	INPUT RELAY/LOW STEAMLINE PRESS BISTABLE-LOOP 1	X-135	CB	0830	I
1-K133-A	INPUT RELAY/LOW STEAMLINE PRESS BISTABLE-LOOP 1	X-135	CB	0830	I
1-K247-A	INPUT RELAY/LOW STEAMLINE PRESS BISTABLE-LOOP 1	X-135	CB	0830	I
1-K247-A	INPUT RELAY/LOW STEAMLINE PRESS BISTABLE-LOOP 1	X-135	CB	0830	I
1-K341-A	INPUT RELAY/RWST LO-LO LEVEL (III)	X-135	CB	0830	I
1-K341-A	INPUT RELAY/RWST LO-LO LEVEL (III)	X-135	CB	0830	I
1-K350-A	INPUT RELAY/NIS HI NEUT POS FLUX RATE BISTABLE (III)	X-135	CB	0830	I
1-K444-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (IV)	X-135	CB	0830	I
1-K444-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (IV)	X-135	CB	0830	I
1-K444-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (IV)	X-135	CB	0830	I
1-K501-A	SSPS MASTER RELAY/SI	X-135	CB	0830	I
1-K502-A	SSPS MASTER RELAY/CONTAINMENT ISOL PHASE A	X-135	CB	0830	I
1-K503-A	SSPS MASTER RELAY/CONTAINMENT VENT ISOL	X-135	CB	0830	I
1-K504-A	SSPS MASTER RELAY/STEAMLINE STOP VALVES	X-135	CB	0830	I
1-K514-A	SSPS MASTER RELAY/RWST LO-LO LEAD	X-135	CB	0830	I
1-K514-A	SSPS MASTER RELAY/RWST LO-LO LEAD	X-135	CB	0830	I
1-K521-A	SSPS MASTER RELAY/SI	X-135	CB	0830	I
1-K522-A	SSPS MASTER RELAY/CONTAINMENT ISOL PHASE A	X-135	CB	0830	I
1-K525-A	SSPS MASTER RELAY/SI	X-135	CB	0830	I
1-K601-A	SSPS SLAVE RELAY/SI	X-135	CB	0830	I
1-K602-A	SSPS SLAVE RELAY/TEST	X-135	CB	0830	I
1-K603-A	SSPS SLAVE RELAY/SI	X-135	CB	0830	I
1-K604-A	SSPS SLAVE RELAY/SI	X-135	CB	0830	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1-K607-A	SSPS SLAVE RELAY/CONTAINMENT VENT ISOL	X-135	CB	0830	I
1-K608-A	SSPS SLAVE RELAY/SI	X-135	CB	0830	I
1-K609-A	SSPS SLAVE RELAY/SI	X-135	CB	0830	I
1-K610-A	SSPS SLAVE RELAY/SI	X-135	CB	0830	I
1-K611-A	SSPS SLAVE RELAY/SI	X-135	CB	0830	I
1-K614-A	SSPS SLAVE RELAY/CONTAINMENT VENT ISOL	X-135	CB	0830	I
1-K615-A	SSPS SLAVE RELAY/SI	X-135	CB	0830	I
1-K616-A	SSPS SLAVE RELAY/SI	X-135	CB	0830	I
1-K622-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	X-135	CB	0830	I
1-K623-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	X-135	CB	0830	I
1-K624-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	X-135	CB	0830	I
1-K627-A	SSPS SLAVE RELAY/STEAMLINE STOP VALVE	X-135	CB	0830	I
1-K629-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	X-135	CB	0830	I
1-K630-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	X-135	CB	0830	I
1-K631-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PAHSE A	X-135	CB	0830	I
1-K634-A	SSPS SLAVE RELAY/STEAMLINE STOP VALVES	X-135	CB	0830	I
1-K636-A	SSPS SLAVE RELAY/CONTAINMENT VENT ISOL	X-135	CB	0830	I
1-K740-A	SSPS SLAVE RELAY /NI	X-135	CB	0830	I
1-K741-A	SSPS SLAVE RELAY/RWST LO-LO LEVEL	X-135	CB	0830	I
1-K741-A	SSPS SLAVE RELAY/RWST LO-LO LEVEL	X-135	CB	0830	I
1-LS-0930E	LEVEL SWITCH	X-135	CB	0830	I
1-LS-0932E	LEVEL SWITCH	X-135	CB	0830	I
1-LY-930E	POWER SUPPLY	X-135	CB	0830	I
1-LY-932E	POWER SUPPLY	X-135	CB	0830	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1-PS-0455F	PRESSURIZER PRESSURE CONT 5 POSTON SWITCH	X-135	CB	0830	I
1/1-RT	CONTROL ROOM REACTOR TRIP HANDSWITCH	X-135	CB	0830	I
52/RTA	REACTOR TRIP BREAKER CONTACT	X-135	CB	0830	I
52/SHTRA	REACTOR TRIP BREAKER SHUNT TRIP COIL	X-135	CB	0830	I
CP1-ECPRCR-01	SOLID STATE SAFEGUARDS SYSTEM SEQUENCER CABINET 1-CR-01	X-135	CB	0830	I
CP1-ECPRCR-01	SOLID STATE SAFEGUARDS SYSTEM SEQUENCER CABINET 1-CR-01	X-135	CB	0830	I
CRHS1	CONTROL ROOM REACTOR TRIP HANDSWITCH	X-135	CB	0830	I
** SYSTEM FW					
1-FV-2193	SG 1-01 FW PREHTR BYP VLV	1-100B	SG	0852	I
1-FV-2194	SG 1-02 FW PREHTR BYP VLV	1-100C	1S	0852	I
1-FV-2195	SG 1-03 FW PREHTR BYP VLV	1-100D	SG	0852	I
1-FV-2196	SG 1-04 FW PREHTR BYP VLV	1-100A	SG	0852	I
1-HV-2134	SG 1-01 FW ISOL VLV	1-100B	SG	0852	I
1-HV-2135	SG 1-02 FW ISOL VLV	1-100C	SG	0852	I
1-HV-2136	SG 1-03 FW ISOL VLV	1-100D	SG	0852	I
1-HV-2137	SG 1-04 FW ISOL VLV	1-100A	SG	0852	I
1FW-0196	SG 1-01 FW PREHTR BYP IRC CHK VLV	1-155L	RB	0832	I
1FW-0200	SG 1-01 AFW NZL CHK VLV	1-155A	RB	0832	I
** SYSTEM MS					
1-HV-2333A	MSIV 1-01	1-108E	SG	0881	I
1-HV-2334A	MSIV 1-02	1-110#	SG	0881	I
1-HV-2335A	MSIV 1-03	1-110#	SG	0881	I
1-HV-2336A	MSIV 1-04	1-110#	SG	0881	I
1-PB-0514A	STEAM LINE PRESSURE (LOOP 1 PROT. SET I) SINGLE COMPARATOR	X-135	CB	0830	I
1-PQY-0514	LOOP POWER SUPPLY	X-135	CB	0830	I
1-PS-0514A	PRESSURE SWITCH	X-135	CB	0830	I
1-PT-0514	MAIN STEAM LINE 1-01 PRESSURE TRANSMITTER 0514 PROT CHAN I	1-100A	SG	0852	I
1-PT-0524	MAIN STEAM LINE 1-02 PRESSURE TRANSMITTER 0524 PROT CHAN I	1-100H	SG	0852	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1-PT-2325	MAIN STEAM LINE 1-01 PRESSURE TRANSMITTER 2325	1-100A#	SG	0852	I
1-PT-2327	MAIN STEAM LINE 1-03 PRESSURE TRANSMITTER 2327	1-100H	SG	0852	I
1-PV-2325	SG 1-01 ATMOS RLF VLV	1-109#	SG	0881	I
1-PV-2325	SG 1-01 ATMOS RLF VLV	1-109#	SG	0881	I
1-PY-0514B	LEAD LAG AMPLIFIER LOOP I PROT SET I	X-135	CB	0830	I
1MS-0026	SG 1-01 ATMOS RLF VLV UPSTRM ISOL VLV	1-109#	SG	0881	I
1MS-0681	SG 1-01 ATMOS RELIEF VALVE AIR SUPPLY DOWNSTREAM CHECK VALVE	1-107	SG	0874	I
1MS-0703	SG 1-01 ATMOS RLF VLV AIR ACCUM 1-02 ISOL VLV	1-112	SG	0896	I
CP1-MSATRT-02	STEAM GENERATOR 1-01 ATMOSPHERIC RELIEF VALVE AIR ACCUMULATOR 1-02	1-107	SG	0874	I
** SYSTEM RC					
1-8000A	PRZR 1-01 PORV 0455A BLK VLV	1-161A	RB	0862	I
1-8010A	PRZR 1-01 SFTY VLV A	1-161A	RB	0862	I
1-8010B	PRZR 1-01 SFTY VLV B	1-161E	RB	0862	I
1-PB-0405A	WIDE RANGE LP-1 HOT DUAL COMPARATOR	X-135	CB	0830	I
1-PB-0405B	WIDE RANGE LP-1 HOT DUAL COMPARATOR	X-135	CB	0830	I
1-PB-0455A	PRESSURIZER PRESSURE (PROT. SET I) - SINGLE COMPARATOR	X-135	CB	0830	I
1-PCV-0455A	PRZR 1-01 PORV 0455A	1-161E	RB	0905	I
1-PQY-0455	LOOP POWER SUPPLY	X-135	CB	0830	I
1-PT-0405	REACTOR COOLANT HOT LEG 1-01 PRESSURE TRANSMITTER 0405 (WIDE RANGE)	1-155A	RB	0832	I
1-PT-0455	PRESSURIZER 1-01 PRESSURE TRANSMITTER 0455 PROT CHAN I	1-155L	RB	0862	I
1-PT-0455	PRESSURIZER 1-01 PRESSURE TRANSMITTER 0455 PROT CHAN I	1-155L	RB	0862	I
1RC-8053A	PRZR 1-01 PT-0455/0455F/LT-0459/0459F UP RT VLV	1-161E	RB	0862	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1RC-8053B	PRZR 1-01 PT-0456/0458/LT-0460 UP RT VLV	1-161E	RB	0862	I
1SI-0170	PORV 0455A N2 ACCUM 1-02 ISOL VLV	1-160A	RB	0905	I
1SI-0180	N2 SPLY TO PORV 0455A ISOL VLV	1-160A	RB	0905	I
CP1-SIATRT-02	POWER OPERATED RELIEF VALVE 0455A NITROGEN ACCUMULATOR 1-02	1-160A	RB	0905	I
** SYSTEM RH					
1-8701A	RHR PMP 1-01 HL 1-01 RECIRC OMB ISOL VLV	1-154D	RB	0808	I
1-8702A	RHR PMP 1-01 HL 1-01 REICRC IMB ISOL VLV	1-154I	RB	0812	I
1-8708A	RHR PMP 1-01 SUCT RLF VLV	1-154B	RB	0808	I
1-8716A	RHR PMP 1-01 XTIE VLV	1-067	SG	0790	I
1-8717	U1 RHR PMPS DISCH TO RWST ISOL VLV	1-076	SG	0800	I
1-8724A	RHR PMP 1-01 DISCH ISOL VLV	1-062F	SG	0785	I
1-8730A	RHR HX 1-01 DISCH CHK VLV	1-067	SG	0790	I
1-8809A	RHR TO CL 1-01/1-02 INJ ISOL VLV	1-077B	SG	0810	I
1-8811A	CNTMT SMP TO RHR PMP 1-01 SUCT ISOL VLV	1-065	SG	0790	I
1-8811A	CNTMT SMP TO RHR PMP 1-01 SUCT ISOL VLV	1-065	SG	0790	I
1-8812A	RWST 1-01 TO RHR PMP 1-01 SUCT VLV	1-070	SG	0790	I
1-8812A	RWST 1-01 TO RHR PMP 1-01 SUCT VLV	1-070	SG	0790	I
1-8840	RHR TO HL 1-02/1-03 INJ ISOL VLV	1-077B	SG	0810	I
1-8958A	RWST 1-01 TO RHR PMP 1-01 CHK VLV	1-062F	SG	0785	I
1-FCV-0610	RHR PMP 1-01 MINIFLO VLV	1-067	SG	0790	I
1-FCV-0618	RHR HX 1-01 BYP FLO CTRL VLV	1-062F	SG	0785	I
1-FI-4556	RHR HX 1 CCW RET FLO	X-135	CB	0830	I
1-FIS-0610	RESIDUAL HEAT REMOVAL PUMP 1-01 DISCHARGE FLOW INDICATING SWITCH	1-054	SG	0773	I
1-HCV-0606	RHR HX 1-01 FLO CTRL VLV	1-067	SG	0790	I
1-LT-0930	REFUELING WATER STORAGE TANK 1-01 LEVEL TRANSMITTER 0930 PROT	1-085D	SG	0796	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1-LT-0932	REFUELING WATER STORAGE TANK 1-01 LEVEL TRANSMITTER 0932 PROT CHAN III	1-085D	SG	0796	I
1-LT-4779	CONTAINMENT RECIRCULATING SUMP 1-01 LEVEL TRANSMITTER	1-154B	RB	0808	I
1-TI-4557	RHR HX 1 CCW RET TEMP	X-135	CB	0830	I
SUMP#1	TRAIN A CONTAINMENT RECIRCULATION SUMP	1-154	RB	0808	I
TBX-RHAHRS-01	RESIDUAL HEAT REMOVAL HEAT EXCHANGER 1-01	1-069	SG	0790	I
TBX-RHAPRH-01	RESIDUAL HEAT REMOVAL PUMP 1-01	1-053	SG	0773	I
** SYSTEM SI					
1-8802A	SI PMP 1-01 TO HL 2 & 3 INJ ISOL VLV	1-077B	SG	0810	I
1-8804B	RHR PMP 1-02 TO SI PMPS SUCT VLV	1-062E	SG	0785	I
1-8806	RWST 1-01 TO SI PMPS SUCT VLV	1-070	SG	0790	I
1-8807A	U1 SIP/CCP SUCT HDR XTIE VLV 8807A	1-062F	SG	0785	I
1-8813	SI PMP 1-01/1-02 MINIFLO RET VLV	1-067	SG	0790	I
1-8814A	SI PMP 1-01 MINIFLO VLV	1-062F	SG	0785	I
1-8815	CCP 1-01/1-02 INJ CHK VLV	1-154A	RB	0808	I
1-8818A	RHR CL 1-01 INJ CHK VLV	1-154A	RB	0808	I
1-8821A	SI PMP 1-01 XTIE VLV	1-062F	SG	0785	I
1-8835	SI PMP 1-01/1-02 TO CL INJ ISOL VLV	1-077B	SG	0810	I
1-8841A	RHR TO RCS HL 1-02 UPSTRM CHK VLV	1-154B	RB	0808	I
1-8921A	SI PMP 1-01 DISCH ISOL VLV	1-062E	SG	0785	I
1-8922A	SI PMP 1-01 DISCH CHK VLV	1-062F	SG	0785	I
1-8923A	SI PMP 1-01 SUCT VLV	1-062F	SG	0785	I
1-8924	U1 SIP/CCP SUCT HDR XTIE ISOL VLV	1-067	SG	0790	I
1-8926	SI PMP 1-01/1-02 SUCT CHK VLV	1-062G	SG	0785	I
1-8948A	SI ACCUM 1-01 DNSTRM INJ CHK VLV	1-154I	RB	0808	I
1-8949B	RHR TO RCP HL 1-02 DNSTRM CHK VLV	1-154J	RB	0812	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1-8949C	RHR TO RCP HL 1-03 DNSTRM CHK VLV	1-154K	RB	0812	I
1-LB-0930E	REFUELING WATER STORAGE TANK LEVEL (PROTSET I) SINGLE COMPARATOR	X-135	CB	0830	I
1-LB-0932E	REFUELING WATER STORAGE TANK LEVEL (PROT. SET III) SINGLE COMPARATOR	X-135	CB	0830	I
1SI-0047	RWST 1-01 TO SI ISOL VLV	1-085D	SG	0796	I
1SI-0048	RWST 1-01 TO CCP ISOL VLV	1-085D	SG	0796	I
1SI-8810A	CCP TO CL 1-01 INJ THROT VALV	1-154A	RB	0808	I
1SI-8810B	CCP TO CL 1-02 INJ THROT VALV	1-154B	RB	0808	I
1SI-8816B	SI HL 1-02 INJ THROT VLV	1-154B	RB	0808	I
1SI-8816C	SI HL 1-03 INJ THROT VLV	1-154C	RB	0808	I
1SI-8819A	SI CL 1-01 CHK VLV	1-154A	RB	0808	I
1SI-8819B	SI CL 1-02 CHK VLV	1-154B	RB	0808	I
1SI-8822A	SI CL 1-01 INJ THROT VLV	1-154A	RB	0808	I
1SI-8822B	SI CL 1-02 INJ THROT VLV	1-154B	RB	0808	I
1SI-8900A	CCP 1-01/1-02 TO CL 1-01 CHK VLV	1-154A	RB	0808	I
1SI-8900B	CCP 1-01/1-02 TO CL 1-02 CHK VLV	1-154B	RB	0808	I
1SI-8905B	SI HL 1-02 INJ CHK VLV	1-154B	RB	0808	I
1SI-8905C	SI HL 1-03 INJ CHK VLV	1-154C	RB	0808	I
1SI-8919A	SI PMP 1-01 TO RWST CHK VLV	1-062F	SG	0785	I
CP1-CTATRW-01	REFUELING WATER STORAGE TANK 1-01	X-YARD	YD	0810	I
TBX-SIAPSI-01	SAFETY INJECTION PUMP 1-01	1-062	SG	0773	I
** SYSTEM SW					
1-FT-4258	STATION SERVICE WATER PUMP 1-01 DISCHARGE FLOW TRANSMITTER	X-275	SI	0796	I
1-HV-4286	SSW PMP 1-01 DISCH VLV	X-275	SI	0796	I
1-HV-4393	DG 1-01 JKT WTR CLR SSW RET VLV	1-082	SG	0810	I
1-HV-4395	SSW TRN A TO U1 AFW PUMP SUCTION VALVE	1-070	SG	0790	I
1-PT-4252	STATION SERVICE WATER PUMP 1-01 DISCHARGE PRESSURE TRANSMITTER	X-275	SI	0796	I
1SW-0001	U1 SSW TRN A RET HDR ISOL VLV	X-207	AB	0810	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
1SW-0002	U1 SSW TRN A TO SSW DISCH CNL ISOL VLV	X-162	AB	0785	I
1SW-0017	U1 SSW TRN A SPLY HDR IN CHK VLV	X-162	AB	0785	I
1SW-0017	U1 SSW TRN A SPLY HDR IN CHK VLV	X-162	AB	0785	I
1SW-0020	U1 SSW TRN A SPLY HDR IN ISOL VLV	X-207	AB	0810	I
1SW-0023	CCW HX 1-01 SSW OUT THROT VLV	X-175	AB	0790	I
1SW-0036	CCW HX 1-01 SSW IN ISOL VLV	X-175	AB	0790	I
1SW-0068	SSW PMP 1-01 BRG WTR STRN 1-02 OUT ISOL VLV	X-275	SI	0796	I
1SW-0074	SSW PMP 1-01 BRG WTR STRN 1-02 IN ISOL VLV	X-275	SI	0796	I
1SW-0084	SSW PMP 1-01 TO TRN A BRG WTR STRN CHK VLV	X-275	SI	0796	I
1SW-0335	DG 1-01 JKT WTR CLR SSW IN ISOL VLV	1-084	SG	0810	I
1SW-0350	DG 1-01 JKT WTR CLR SSW OUT THROT VLV	1-084	SG	0810	I
1SW-0358	CCP 1-01 L\O CLR SSW IN ISOL VLV	X-207	AB	0810	I
1SW-0359	CCP 1-01 L\O CLR SSW OUT THROT VLV	X-207	AB	0810	I
1SW-0374	SSW PMP 1-01 DISCH CHK VLV	X-275	SI	0796	I
1SW-0406	CCP 1-01 L\O CLR STRN 1-01 SSW IN ISOL VLV	X-200	AB	0810	I
1SW-0407	CCP 1-01 L\O CLR STRN 1-01 SSW OUT ISOL VLV	X-200	AB	0810	I
1SW-0422	SSW PMP 1-01 BRG WTR STRN 1-06 IN VLV	X-275	SI	0796	I
1SW-0423	SSW PMP 1-01 BRG WTR STRN 1-06 OUT VLV	X-275	SI	0796	I
1SW-0428	SSW PMP 1-01 BRG WTR STRN 05/06 BYPASS THROT VLV	X-275	SI	0796	I
CP1-SWAPSW-01	STATION SERVICE WATER PUMP 1-01	X-275	SI	0796	I
CP1-SWSRCH-01	CENTRIFUGAL CHARGING PUMP 1-01 LUBE OIL COOLER SSW INLET STRAINER	X-200	AB	0810	I
CP1-SWSRPL-02	STATION SERVICE WATER PUMP 1-01 BEARING WATER STRAINER 1-02	X-275	SI	0796	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
CP1-SWSRPL-06	STATION SERVICE WATER PUMP 1-01 BEARING WATER STRAINER 1-06	X-275	SI	0796	I
CP1-SWSRSI-01	SAFETY INJECTION PUMP 1-01 LUBE OIL COOLER SSW INLET STRAINER	1-062	SG	0773	I
** SYSTEM VAA					
CP1-VAAUSE-03	CENTRIFUGAL CHARGING PUMP 1-01 ROOM FAN COOLER FAN 1-03	X-200	AB	0810	I
CP1-VAAUSE-09	COMPONENT COOLING WATER PUMP 1-01 ROOM FAN COOLER FAN 1-09	X-205	AB	0810	I
** SYSTEM VAB					
CP1-VADPGU-42	BATTERY ROOM 1-1 EXHAUST FAN 1-08 DISCHARGE GRAVITY DAMPER	X-151A	CB	0854	I
CP1-VADPOU-04	BATTERY ROOM 1-1 EXHAUST FAN 1-08 INLET DAMPER	X-151A	CB	0854	I
CP1-VAFNID-08	BATTERY ROOM 1-A EXHAUST FAN 1-08	X-151A	CB	0854	I
** SYSTEM VAD					
CP1-VADPGU-48	DIESEL GENERATOR 1-01 ROOM VENT FAN 1-25 DISCHARGE GRAVITY DAMPER	1-099B	SG	0844	I
CP1-VADPGU-49	DIESEL GENERATOR 1-01 ROOM VENT FAN 1-26 DISCHARGE GRAVITY DAMPER	1-099B	SG	0844	I
CP1-VADPGU-50	DIESEL GENERATOR 1-01 ROOM VENT FAN 1-27 DISCHARGE GRAVITY DAMPER	1-099B	SG	0844	I
CP1-VADPGU-51	DIESEL GENERATOR 1-01 ROOM VENT FAN 1-28 DISCHARGE GRAVITY DAMPER	1-099B	SG	0844	I
CP1-VAFNAV-25	DIESEL GENERATOR 1-01 ROOM VENTILATION FAN 1-25	1-099B	SG	0844	I
CP1-VAFNAV-26	DIESEL GENERATOR 1-01 ROOM VENTILATION FAN 1-26	1-099B	SG	0844	I
CP1-VAFNAV-27	DIESEL GENERATOR 1-01 ROOM VENTILATION FAN 1-27	1-099B	SG	0844	I
CP1-VAFNAV-28	DIESEL GENERATOR 1-01 ROOM VENTILATION FAN 1-28	1-099B	SG	0844	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
** SYSTEM VAM					
CPX-VAFNWV-06	SWIS EXHAUST FAN X-06	X-275	SI	0796	I
CPX-VAFNWV-07	SWIS EXHAUST FAN X-07	X-275	SI	0796	I
** SYSTEM VAR					
CPX-VAACCR-01	CONTROL ROOM AIR CONDITIONING UNIT X-01	X-150	CB	0854	I
CPX-VAACCR-01B	CONTROL ROOM A/C COOLING COIL	X-150	CB	0854	I
CPX-VAACCR-01M	CONTROL ROOM AIR CONDITIONING UNIT X-01 FAN MOTOR	X-150	CB	0854	I
CPX-VADPGU-05	CR A/C UNIT 01 DISCHARGE GRAVITY DAMPER	X-150	CB	0854	I
CPX-VADPOU-10	CR A/C UNIT 02 INLET ISOL AIR-OPER DAMPER	X-150	CB	0854	I
CPX-VADPOU-48	CR A/C SYS SUPPLY-AIR FLOW BALANCING AIR OPER DAMPER	X-150	CB	0854	I
X-PV-3583	CR A\C UNIT X-01 CCW RET PCV	X-150	CB	0854	I
** SYSTEM VAS					
CP1-VAAUSE-01	RESIDUAL HEAT REMOVAL PUMP 1-01 ROOM FAN COOLER FAN 1-01	1-053	SG	0773	I
CP1-VAAUSE-05	SAFETY INJECTION PUMP 1-01 ROOM FAN COOLER FAN 1-05	1-062	SG	0773	I
CP1-VAAUSE-07	MD AUXILIARY FEEDWATER PUMP 1-01 ROOM FAN COOLER FAN 1-07	1-072	SG	0790	I
CP1-VAAUSE-17	ELECTRICAL AREA FAN COOLER FAN 1-17	1-085A	SG	0810	I
CP1-VAAUSE-18	ELECTRICAL AREA FAN COOLER FAN 1-18	1-085A	SG	0810	I
CP1-VADPGU-60	ELECTRICAL AREA FAN COOLER FAN 1-17 DISCHARGE GRAVITY DAMPER 1-60	1-085A	SG	0810	I
CP1-VADPGU-61	ELECTRICAL AREA FAN COOLER FAN 1-18 DISCHARGE GRAVITY DAMPER 1-61	1-085A	SG	0810	I
** SYSTEM VAU					
CPX-VAACUP-01	UNINTERRUPTIBLE POWER SUPPLY AIR CONDITIONING UNIT X-01	X-115C	CB	0778	I

TABLE 5-1
CPSES SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)

TAG	NOUN NAME	ROOM	BLDG	ELEV	CAT
CPX-VADPGU-34	UPS A/C UNIT 01 DISCHARGE GRAVITY DAMPER	X-115C	CB	0778	I
CPX-VAFNAV-42	UNINTERRUPTIBLE POWER SUPPLY AND DISTR ROOM BOOSTER RETURN FAN X-42	X-115C	CB	0778	I
X-PCV-H116A	UPS A\C UNIT X-01 CCW RET PCV	X-115C	CB	0778	I

TABLE 5-2
CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
1-053	SG	0773	CP1-CHFHCH-01	RHR PUMP RM EMER FAN COIL UNIT 1-01 CHILLED WATER SPLY FLEX HOSE 1-01	I
1-053	SG	0773	CP1-CHFHCH-02	RHR PUMP RM EMER FAN COIL UNIT 1-01 CHILLED WATER RET FLEX HOSE 1-02	I
1-053	SG	0773	CP1-VAAUSE-01	RESIDUAL HEAT REMOVAL PUMP 1-01 ROOM FAN COOLER FAN 1-01	I
1-053	SG	0773	TBX-RHAPRH-01	RESIDUAL HEAT REMOVAL PUMP 1-01	I
1-054	SG	0773	1-FIS-0610	RESIDUAL HEAT REMOVAL PUMP 1-01 DISCHARGE FLOW INDICATING SWITCH	I
1-062	SG	0773	CP1-SWSRSI-01	SAFETY INJECTION PUMP 1-01 LUBE OIL COOLER SSW INLET STRAINER	I
1-062	SG	0773	CP1-VAAUSE-05	SAFETY INJECTION PUMP 1-01 ROOM FAN COOLER FAN 1-05	I
1-062	SG	0773	TBX-SIAPSI-01	SAFETY INJECTION PUMP 1-01	I
1-062E	SG	0785	1-8804B	RHR PMP 1-02 TO SI PMPS SUCT VLV	I
1-062E	SG	0785	1-8969B	RHR TO SI PMP 1-01/1-02 SUCT CHK VLV	I
1-062F	SG	0785	1-8807A	U1 SIP/CCP SUCT HDR XTIE VLV 8807A	I
1-062F	SG	0785	1-8814A	SI PMP 1-01 MINIFLO VLV	I
1-062F	SG	0785	1-8821A	SI PMP 1-01 XTIE VLV	I
1-062F	SG	0785	1-8922A	SI PMP 1-01 DISCH CHK VLV	I
1-062F	SG	0785	1-8958A	RWST 1-01 TO RHR PMP 1-01 CHK VLV	I
1-062F	SG	0785	1-8969A	RHR TO CCP 1-01/1-02 SUCT CHK VLV	I
1-062F	SG	0785	1-FCV-0618	RHR HX 1-01 BYP FLO CTRL VLV	I
1-062G	SG	0785	1-8926	SI PMP 1-01/1-02 SUCT CHK VLV	I
1-065	SG	0790	1-8811A	CNTMT SMP TO RHR PMP 1-01 SUCT ISOL VLV	I
1-067	SG	0790	1-8730A	RHR HX 1-01 DISCH CHK VLV	I
1-067	SG	0790	1-8804A	RHR PMP 1-01 TO CCP SUCT VLV	I
1-067	SG	0790	1-8813	SI PMP 1-01/1-02 MINIFLO RET VLV	I

TABLE 5-2
CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
1-067	SG	0790	1-FCV-0610	RHR PMP 1-01 MINIFLO VLV	I
1-067	SG	0790	1-HCV-0606	RHR HX 1-01 FLO CTRL VLV	I
1-069	SG	0790	TBX-RHAHRS-01	RESIDUAL HEAT REMOVAL HEAT EXCHANGER 1-01	I
1-070	SG	0790	1-8806	RWST 1-01 TO SI PMPS SUCT VLV	I
1-070	SG	0790	1-8812A	RWST 1-01 TO RHR PMP 1-01 SUCT VLV	I
1-070	SG	0790	1-FT-4556	RHR HEAT EXCHANGER 1-01 CCW RETURN FLOW TRANSMITTER	I
1-070	SG	0790	1-HV-4395	SSW TRN A TO U1 AFW PUMP SUCTION VALVE	I
1-070	SG	0790	1-HV-4572	RHR HX 1-01 CCW RET VLV	I
1-070	SG	0790	1-TE-4557	RHR HEAT EXCHANGER 1-01 CCW RETURN TEMPERATURE ELEMENT	I
1-072	SG	790	1-HV-2480	MD AFW PUMP 1-01 SSW SUCTION ISOLATION VALVE	I
1-072	SG	0790	1-PT-2453	MD AUXILIARY FEEDWATER PUMP 1-01 DISCHARGE PRESS TRANSMITTER	I
1-072	SG	0790	1-PT-2475	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 1-01 SUCTION PRESS TRANSMITTER	I
1-072	SG	0790	1-PV-2453A	MD AFW PMP 1-01 DISCH TO SG 1-01 CTRL VLV	I
1-072	SG	0790	1AF-0014	CST TO MD AFW PMP 1-01 SUCT CHK VLV	I
1-072	SG	0790	1AF-0065	MD AFW PMP 1-01 DISCH CHK VLV	I
1-072	SG	0790	1AF-0215	MD AFW PMP 1-01 FCV TO SG 1-01 AIR SPLY UPSTRM CHK VLV	I
1-072	SG	0790	1AF-0216	MD AFW PMP 1-01 FCV TO SG 1-01 AIR SPLY DNSTRM CHK VLV	I
1-072	SG	0790	CP1-AFAPMD-01	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 1-01	I
1-072	SG	0790	CP1-CIATAF-07	MD AFW PUMP 1-01 DISCHARGE TO SG 1-01 FCV AIR ACCUMULATOR 1-07	I
1-072	SG	0790	CP1-VAAUSE-07	MD AUXILIARY FEEDWATER PUMP 1-01 ROOM FAN COOLER FAN 1-07	I
1-077A	SG	0810	1-8100	U1 RCP SL WTR RET ISOL VLV	I
1-077A	SG	0810	1-8351C	RC PMP 1-03 SL WTR INJ VLV	I

TABLE 5-2
CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
1-077A	SG	0810	1-8351D	RC PMP 1-04 SL WTR INJ VLV	I
1-077A	SG	0810	1-HV-8220	U1 CHARGE PMP SUCT HI PNT VNT VLV 8220	I
1-077B	SG	0810	1-8106	U1 CHRG PMP TO RCS CNTMT ISOL VLV	I
1-077B	SG	0810	1-8152	U1 LTDN CNTMT ORC ISOL VLV	I
1-077B	SG	0810	1-8351A	RC PMP 1-01 SL WTR INJ VLV	I
1-077B	SG	0810	1-8351B	RC PMP 1-02 SL WTR INJ VLV	I
1-077B	SG	0810	1-8801A	CCP 1-01/1-02 SI ISOL VLV 8801A	I
1-077B	SG	0810	1-8802A	SI PMP 1-01 TO HL 2 & 3 INJ ISOL VLV	I
1-077B	SG	0810	1-8809A	RHR TO CL 1-01/1-02 INJ ISOL VLV	I
1-077B	SG	0810	1-8835	SI PMP 1-01/1-02 TO CL INJ ISOL VLV	I
1-077B	SG	0810	1-8840	RHR TO HL 1-02/1-03 INJ ISOL VLV	I
1-083	SG	0810	1EB1-1	T1EB1 TO 480 VAC SWITCHGEAR 1EB1 PREFERRED FEEDER BREAKER	I
1-083	SG	0810	1EB1-1/2HR/BKR	118 VAC SAFEGUARDS BOP INVERTER IV1EC1 SUPPLY BREAKER	I
1-083	SG	0810	1EB1-1/2M/BKR	125 VDC BATTERY CHARGER BC1ED1-1 SUPPLY BREAKER	I
1-083	SG	0810	1EB1/3C/COMP	480V SWGR BUS 1EB1 COMPARTMENT	I
1-083	SG	0810	1EB1/3D/COMP	480V SWGR BUS 1EB1 COMPARTMENT	I
1-083	SG	0810	1EB3-1	T1EB3 TO 480 VAC SWITCHGEAR 1EB3 PREFERRED FEEDER BREAKER	I
1-083	SG	0810	1EB3/7C/COMP	480V SWGR BUS 1EB3 COMPARTMENT	I
1-083	SG	0810	1EG1	DG 1-01 TO 6.9 KV SWGR 1EA1 EMERGENCY FEEDER BREAKER	I
1-083	SG	0810	BT-1EA1	6.9 KV SWGR 1EA1 INNER BUS TIE BREAKER	I
1-083	SG	0810	CP1-EPMCEB-01	480 VAC MOTOR CONTROL CENTER 1EB1-1	I
1-083	SG	0810	CP1-EPSWEA-01	6.9 KV SWITCHGEAR 1EA1	I
1-083	SG	0810	CP1-EPSWEB-01	480 VAC SWITCHGEAR 1EB1	I
1-083	SG	0810	CP1-EPTRET-01	6900/480 VAC TRANSFORMER (1EA1/1EB1) T1EB1	I

TABLE 5-2
CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
1-083	SG	0810	T1EB1	6900/480 VAC TRANSFORMER TIEB1 (1EA1/1EB1) FEEDER BREAKER	I
1-084	SG	0810	1DO-0002	DG 1-01 FO XREF PMP 1-01 DISCH VLV	I
1-084	SG	0810	1DO-0004	DG 1-01 FO XFER PMP 1-01 DISCH CHK VLV	I
1-084	SG	0810	CP1-DOAPFT-01	DIESEL GENERATOR 1-01 FUEL OIL TRANSFER PUMP 1-01	I
1-084	SG	0810	CP1-DOSRTP-01	DIESEL GENERATOR 1-01 FUEL OIL TRANSFER PUMP STRAINER 1-01	I
1-084	SG	0810	CP1-MEDGEE-01	DIESEL GENERATOR 1-01	I
1-085A	SG	0810	CP1-VAAUSE-17	ELECTRICAL AREA FAN COOLER FAN 1-17	I
1-085A	SG	0810	CP1-VADPGU-60	ELECTRICAL AREA FAN COOLER FAN 1-17 DISCHARGE GRAVITY DAMPER 1-60	I
1-085D	SG	0796	1-LT-0930	REFUELING WATER STORAGE TANK 1-01 LEVEL TRANSMITTER 0930 PROT CHAN I	I
1-085D	SG	0796	1AF-0007	CST 1-01 TO MD AFW PMP 1-01/1-02 ISOL VLV	I
1-099B	SG	0844	1DO-0029	DG 1-01 FO DAY TK 1-01 OUT VLV	I
1-099B	SG	0844	1DO-0049	DG 1-01 FO DAY TK 1-01 XFER HDR CHK VLV	I
1-099B	SG	0844	CP1-VADPGU-48	DIESEL GENERATOR 1-01 ROOM VENT FAN 1-25 DISCHARGE GRAVITY DAMPER	I
1-099B	SG	0844	CP1-VAFNAV-25	DIESEL GENERATOR 1-01 ROOM VENTILATION FAN 1-25	I
1-099D	SG	0844	1-LS-3375A	DIESEL GENERATOR 1-01 FUEL OIL DAY TANK 1-01 LEVEL SWITCH 3375A	I
1-099D	SG	0844	CP1-DOATDT-01	DIESEL GENERATOR 1-01 FUEL OIL DAY TANK 1-01	I
1-100A	SG	0852	1-PT-0514	MAIN STEAM LINE 1-01 PRESSURE TRANSMITTER 0514 PROT CHAN I	I
1-100B	SB		1-FT-2463A	STEAM GENERATOR 1-01 AUXILIARY FEEDWATER FLOW TRANSMITTER 2463A	I
1-100B	SG	0852	1-FV-2193	SG 1-01 FW PREHTR BYP VLV	I

TABLE 5-2
CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
1-100B	SG	0852	1-HV-2491B	MD AFW PMP 1-01 DISCH TO SG 1-01 ISOL VLV	I
1-100B	SG	0852	1AF-0075	MD AFW PMP 1-01 DISCH TO SG 1-01 CHK VLV	I
1-107	SG	0874	1MS-0681	SG 1-01 ATMOS RELIEF VALVE AIR SUPPLY DOWNSTREAM CHECK VALVE	I
1-107	SG	0874	CP1-MSATRT-01	STEAM GENERATOR 1-02 ATMOSPHERIC RELIEF VALVE AIR ACCUMULATOR 1-01	I
1-108E	SG	0881	1-HV-2333A	MSIV 1-01	I
1-109#	SG	0881	1-PV-2325	SG 1-01 ATMOS RLF VLV	I
1-109#	SG	0881	1MS-0026	SG 1-01 ATMOS RLF VLV UPSTRM ISOL VLV	I
1-112	SG	0896	1MS-0703	SG 1-01 ATMOS RLF VLV AIR ACCUM 1-02 ISOL VLV	I
1-154	RB	0808	SUMP#1	TRAIN A CONTAINMENT RECIRCULATION SUMP	I
1-154A	RB	0808	1-8160	U1 LTDN CNTMT IRC ISOL VLV	I
1-154A	RB	0808	1-8815	CCP 1-01/1-02 INJ CHK VLV	I
1-154A	RB	0808	1-8818A	RHR CL 1-01 INJ CHK VLV	I
1-154A	RB	0808	1CS-8368A	RC PMP 1-01 SL INJ IRC CHK VLV	I
1-154A	RB	0808	1SI-8819A	SI CL 1-01 CHK VLV	I
1-154A	RB	0808	1SI-8900A	CCP 1-01/1-02 TO CL 1-01 CHK VLV	I
1-154B	RB	0808	1-8708A	RHR PMP 1-01 SUCT RLF VLV	I
1-154B	RB	0808	1-8841A	RHR TO RCS HL 1-02 UPSTRM CHK VLV	I
1-154B	RB	0808	1-LT-4779	CONTAINMENT RECIRCULATING SUMP 1-01 LEVEL TRANSMITTER	I
1-154B	RB	0808	1SI-8905B	SI HL 1-02 INJ CHK VLV	I
1-154D	RB	0808	1-8112	U1 RC PMP SEAL WTR RET ISOL VLV	I
1-154D	RB	0808	1-8701A	RHR PMP 1-01 HL 1-01 RECIRC OMB ISOL VLV	I
1-154I	RB	0808	1-8948A	SI ACCUM 1-01 DNSTRM INJ CHK VLV	I
1-154I	RB	0808	1CS-8350A	RC PMP 1-01 SL WTR INJ CHK VLV	I
1-154I	RB	0808	1CS-8367A	RC PMP 1-01 SL INJ IMB CHK VLV	I
1-154J	RB	0812	1-8949B	RHR TO RCP HL 1-02 DNSTRM CHK VLV	I
1-154J	RB	0812	1CS-8350B	RC PMP 1-02 SL WTR INJ CHK VLV	I

TABLE 5-2
CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
1-154K	RB	0812	1CS-8350C	RC PMP 1-03 SL WTR INJ CHK VLV	I
1-154L	RB	0812	1CS-8350D	RC PMP 1-04 SL WTR INJ CHK VLV	I
1-155L	RB	0862	1-PT-0455	PRESSURIZER 1-01 PRESSURE TRANSMITTER 0455 PROT CHAN I	I
1-155L	RB	0832	1FW-0196	SG 1-01 FW PREHTR BYP IRC CHK VLV	I
1-160A	RB	0905	1SI-0170	PORV 0455A N2 ACCUM 1-02 ISOL VLV	I
1-160A	RB	0905	1SI-0180	N2 SPLY TO PORV 0455A ISOL VLV	I
1-160A	RB	0905	CP1-SIATRT-02	POWER OPERATED RELIEF VALVE 0455A NITROGEN ACCUMULATOR 1-02	I
1-161A	RB	0862	1-8000A	PRZR 1-01 PORV 0455A BLK VLV	I
1-161A	RB	0862	1-8010A	PRZR 1-01 SFTY VLV A	I
1-161E	RB	0905	1-PCV-0455A	PRZR 1-01 PORV 0455A	I
1-161E	RB	0862	1RC-8053B	PRZR 1-01 PT-0456/0458/LT-0460 UP RT VLV	I
X-115A	CB	0778	1-PT-4552	SAFETY CHILLER 1-05 CHILLER GAS PRESSURE TRANSMITTER	I
X-115A	CB	0778	1-PV-4552	SFTY CHLR 1-05 CCW RET PCV	I
X-115A	CB	0778	1CC-1079	CIRCLE SEAL CHECK VALVE 1/2" FNPT	I
X-115A	CB	0778	1CC-1080	CIRCLE SEAL CHECK VALVE 1/2" FNPT	I
X-115A	CB	0778	CP1-CHAPCP-05	SAFETY CHILLED WATER RECIRC PUMP 1-05	I
X-115A	CB	0778	CP1-CHCICE-05	SAFETY CHILLER 1-05	I
X-115A	CB	0778	CP1-CIATCC-01	SAFETY CHILLER 1-05 CCW RETURN PCV AIR ACCUMULATOR 1-01	I
X-115C	CB	0778	CPX-VAACUP-01	UNINTERRUPTIBLE POWER SUPPLY AIR CONDITIONING UNIT X-01	I
X-115C	CB	0778	CPX-VADPGU-34	UPS A/C UNIT 01 DISCHARGE GRAVITY DAMPER	I
X-115C	CB	0778	CPX-VAFNAV-42	UNINTERRUPTIBLE POWER SUPPLY AND DISTR ROOM BOOSTER RETURN FAN X-42	I
X-115C	CB	0778	X-PCV-H116A	UPS A\C UNIT X-01 CCW RET PCV	I
X-121	CB	0792	1ED1/1-5/DSW	125 VDC DISTRIBUTION PANEL 1ED1-2 FUSED DISCONNECT SWITCH	I

TABLE 5-2
CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
X-121	CB	0792	1ED1/2-8/BKR	125 VDC BATTERY CHARGER BC1ED1-1 FEEDER BREAKER	I
X-121	CB	0792	1ED3/1-1/DSW	125 VDC BATTERY BT1ED3 FUSED DISCONNECT SWITCH	I
X-121	CB	0792	1ED3/2-8/BKR	125 VDC BATTERY CHARGER BC1ED3-1 FEEDER BREAKER	I
X-121	CB	0792	CP1-ECIVEC-01	118 VAC SAFEGUARDS BALANCE OF PLANT INVERTER IV1EC1	I
X-121	CB	0792	CP1-EPBCED-01	125 VDC BATTERY CHARGER BC1ED1-1	I
X-121	CB	0792	CP1-EPSWED-01	125 VDC SWITCHBOARD 1ED1	I
X-121	CB	0792	TBX-ESELIV-01	118 VAC REACTOR PROTECTION SYSTEM INVERTER IV1PC1	I
X-124	CB	0792	CP1-EPBTED-03	125 VDC STATION BATTERY BT1ED3	I
X-133	CB	0807	1EC1/00/BKR-1	IV1EC1 TO 118 VAC INSTRUMENT DISTR PANEL 1EC1 PREFERRED FEEDER BREAKER	I
X-133	CB	0807	1PC1/00/BKR-1	IV1PC1 TO 118 VAC INSTRUMENT DISTR PANEL 1PC1 PREFERRED FEEDER BREAKER	I
X-133	CB	0807	1PC3/00/BKR-1	IV1PC3 TO 118 VAC INSTRUMENT DISTR PANEL 1PC3 PREFERRED FEEDER BREAKER	I
X-133	CB	0807	CP1-ECDPEC-01	1EC1 118V AC INST DIST PNLBD TRAIN A	I
X-133	CB	0807	CP1-ECDPED-01	125 VDC DISTRIBUTION PANEL 1ED1-1	I
X-133	CB	0807	CP1-ECDPPC-01	1PC1 118VAC INST DP CH1 GROUP 1	I
X-135	CB	0830	1-CR01/15Q	+15V (ESFAS) POWER SUPPLY	I
X-135	CB	0830	1-CR01/48Q	48V (ESFAS) POWER SUPPLY	I
X-135	CB	0830	1-FI-4556	RHR HX 1 CCW RET FLO	I
X-135	CB	0830	1-TI-4557	RHR HX 1 CCW RET TEMP	I
X-135	CB	0830	1/1-RT	CONTROL ROOM REACTOR TRIP HANDSWITCH	I
X-135	CB	0830	CP1-ECPRCR-01	SOLID STATE SAFEGUARDS SYSTEM SEQUENCER CABINET 1-CR-01	I
X-150	CB	0854	CPX-VAACCR-01	CONTROL ROOM AIR CONDITIONING UNIT X-01	I
X-150	CB	0854	CPX-VAACCR-01B	CONTROL ROOM A/C COOLING COIL	I

TABLE 5-2
CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
X-150	CB	0854	CPX-VAACCR-01M	CONTROL ROOM AIR CONDITIONING UNIT X-01 FAN MOTOR	I
X-150	CB	0854	CPX-VADPGU-05	CR A/C UNIT 01 DISCHARGE GRAVITY DAMPER	I
X-150	CB	0854	CPX-VADPOU-10	CR A/C UNIT 02 INLET ISOL AIR-OPER DAMPER	I
X-150	CB	0854	CPX-VADPOU-48	CR A/C SYS SUPPLY-AIR FLOW BALANCING AIR OPER DAMPER	I
X-150	CB	0854	X-PV-3583	CR A\C UNIT X-01 CCW RET PCV	I
X-151A	CB	0854	CP1-VADPGU-42	BATTERY ROOM 1-1 EXHAUST FAN 1-08 DISCHARGE GRAVITY DAMPER	I
X-162	AB	0785	1SW-0017	U1 SSW TRN A SPLY HDR IN CHK VLV	I
X-175	AB	0790	1-FT-4536A	CCW HEAT EXCHANGER 1-01 OUTLET FLOW TRANSMITTER	I
X-175	AB	0790	1-HV-4514	U1 SFGD LOOP A CCW SPLY VLV	I
X-175	AB	0790	1-TE-4530	CCW HEAT EXCHANGER 1-01 OUTLET TEMPERATURE ELEMENT 4530	I
X-175	AB	0790	CP1-CCAHHX-01	COMPONENT COOLING WATER HEAT EXCHANGER 1-01	I
X-198	AB	0810	1-HV-4526	U1 NON-SFGD LOOP CCW UPSTRM SPLY VLV	I
X-198	AB	0810	1-HV-4527	U1 NON-SFGD LOOP CCW DNSTRM SPLY VLV	I
X-200	AB	0810	1SW-0406	CCP 1-01 L\O CLR STRN 1-01 SSW IN ISOL VLV	I
X-200	AB	0810	1SW-0407	CCP 1-01 L\O CLR STRN 1-01 SSW OUT ISOL VLV	I
X-200	AB	0810	CP1-SWSRCH-01	CENTRIFUGAL CHARGING PUMP 1-01 LUBE OIL COOLER SSW INLET STRAINER	I
X-200	AB	0810	CP1-VAAUSE-03	CENTRIFUGAL CHARGING PUMP 1-01 ROOM FAN COOLER FAN 1-03	I
X-200	AB	0810	TBX-CSAPCH-01	CENTRIFUGAL CHARGING PUMP 1-01	I
X-203	AB	0810	1-8110	CCP 1-01/1-02 DNSTRM MINIFLOW VLV	I
X-203	AB	0810	1-8481A	CCP 1-01 DISCH CHK VLV	I
X-203	AB	0810	1-8546	RWST 1-01 TO CHRG PMP SUCT CHK VLV	I
X-203	AB	0810	1-HCV-0182	U1 RC PMP SL WTR PRESS CTRL VLV	I

TABLE 5-2

CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
X-203	AB	0810	1CS-8345	U1 RC PMP SL WTR INJ ISOL VLV	I
X-203	AB	0810	1CS-8387A	CCP 1-01 ALTERNATE SEAL INJECTION VALVE	I
X-205	AB	0810	1-PT-4520	COMPONENT COOLING WATER PUMP 1-01 DISCHARGE PRESSURE TRANSMITTER	I
X-205	AB	0810	1CC-0031	CCW PMP 1-01 DISCH CHK VLV	I
X-205	AB	0810	CP1-CCAPCC-01	COMPONENT COOLING WATER PUMP 1-01	I
X-205	AB	0810	CP1-VAAUSE-09	COMPONENT COOLING WATER PUMP 1-01 ROOM FAN COOLER FAN 1-09	I
X-207	AB	0810	1-HV-4512	U1 SFGD LOOP A CCW RET VLV	I
X-207	AB	0810	1-HV-4524	U1 NON-SFGD LOOP CCW DNSTRM RET VLV	I
X-207	AB	0810	1-HV-4525	U1 NON-SFGD LOOP CCW UPSTRM RET VLV	I
X-207	AB	0810	1-LCV-0112D	RWST 1-01 TO CHRG PMP SUCT VLV 0112D	I
X-209	AB	0822	1-8511A	CCP 1-01 ALT MINIFLO ISOL VLV	I
X-230	AB	0842	1CS-8382B	RC PMP SL WTR INJ FILT 1-02 OUT ISOL VLV UVG-34	I
X-230	AB	0842	TBX-CSFLSI-02	REACTOR COOLANT PUMP SEAL WATER INJECTION FILTER 1-02	I
X-241	AB	0852	XEB1-2/1M/BKR-2	SWGR 2EB1 TO 480 VAC MCC XEB1-2 ALTERNATE FEEDER BREAKER	I
X-245	AB	0874	1-[illegible]-6712	SAFETY CHILLED WATER SURGE TANK 1-01 LEVEL SWITCH 6712	I
X-245	AB	0874	1-LT-4500	COMPONENT COOLING WATER SURGE TANK 1-01 TRAIN A LEVEL TRANSMITTER	I
X-245	AB	0874	CP1-CCATST-01	COMPONENT COOLING WATER SURGE TANK 1-01	I
X-245	AB	0874	CP1-CHATST-01	SAFETY CHILLED WATER SURGE TANK 1-01	I
X-275	SI	0796	1-FT-4258	STATION SERVICE WATER PUMP 1-01 DISCHARGE FLOW TRANSMITTER	I
X-275	SI	0796	1-PT-4252	STATION SERVICE WATER PUMP 1-01 DISCHARGE PRESSURE TRANSMITTER	I

TABLE 5-2
CPSES SEISMIC WALKDOWN EQUIPMENT LIST

ROOM	BLDG	ELEV	TAG	NOUN NAME	SEISCAT
X-275	SI	0796	1SW-0068	SSW PMP 1-01 BRG WTR STRN 1-02 OUT ISOL VLV	I
X-275	SI	0796	1SW-0074	SSW PMP 1-01 BRG WTR STRN 1-02 IN ISOL VLV	I
X-275	SI	0796	1SW-0084	SSW PMP 1-01 TO TRN A BRG WTR STRN CHK VLV	I
X-275	SI	0796	1SW-0374	SSW PMP 1-01 DISCH CHK VLV	I
X-275	SI	0796	1SW-0422	SSW PMP 1-01 BRG WTR STRN 1-06 IN VLV	I
X-275	SI	0796	1SW-0423	SSW PMP 1-01 BRG WTR STRN 1-06 OUT VLV	I
X-275	SI	0796	1SW-0428	SSW PMP 1-01 BRG WTR STRN 05/06 BYPASS THROT VLV	I
X-275	SI	0796	CP1-SWAPSW-01	STATION SERVICE WATER PUMP 1-01	I
X-275	SI	0796	CP1-SWSRPL-02	STATION SERVICE WATER PUMP 1-01 BEARING WATER STRAINER 1-02	I
X-275	SI	0796	CPX-VAFNWV-06	SWIS EXHAUST FAN X-06	I
X-YARD	YD	0810	CP1-AFATCS-01	CONDENSATE STORAGE TANK 1-01	I
X-YARD	YD	0810	CP1-CTATRW-01	REFUELING WATER STORAGE TANK 1-01	I
X-YARD	YD	0810	CP1-DOATST-01	DIESEL GENERATOR 1-01 FUEL OIL STORAGE TANK 1-01	I

TABLE 5-3
ERG CONTROL ROOM INSTRUMENT LIST
SEISMIC MARGIN EVALUATIOM

TAG	NOUN NAME	SYSTEM	CAT
1-FI-2463A	SG 1 AFW FLO	AF	I
1-FI-4258A	SSWP 1 DISCH FLO	SW	I
1-FI-4536A	CCW HX 1 OUT FLO	CC	I
1-FI-4556	RHR HX 1 CCW RET FLO	CC	I
1-FI-4772-1	CSP 1 DISCH FLO	CT	I
1-FK-2453A	MD AFWP 1 SG 1 FLO CTRL	AF	I
1-HS-2162	SG 1 FW BYP & CTRL VLV	FW	I
1-HS-2185	FWIBV 1	FW	I
1-HS-2193	FWPBV 1	FW	I
1-HS-2333A	MSIV 1	MS	I
1-HS-2333B	MAIN STM LOOP 1 BYPASS ISOLATION VLV	MS	I
1-HS-2397	SG 1 BLDN ISOL VLV	SB	I
1-HS-2450A	MD AFWP 1	AF	I
1-HS-2491	AFWIV 1	AF	I
1-HS-4250A	SSWP 1	SW	I
1-HS-4393	DG 1 CLR SSW RET VLV	SW	I
1-HS-4518A	CCWP 1	CC	I
1-HS-4572	RHR HX 1 CCW RET VLV	CC	I
1-HS-5421	CRDM VENT FN 1	VAC	I
1-LI-0459A	PRZR LVL CHAN I	RC	I
1-LI-0518	SG 1 LVL (NR) CHAN III	MS	I
1-LI-0551	SG 1 LVL (NR) CHAN I	MS	I
1-LI-0930	RWST LVL CHAN I	SI	I
1-LI-2478A	CST LVL	AF	I
1-LI-4779A	CNTMT RECIRC SMP LVL	CT	I
1-MLB-1A-1	MONITOR LIGHT BOX	EI	I
1-MLB-1A-2	MONITOR LIGHT BOX	EI	I
1-MLB-45A	MONITOR LIGHT BOX	EI	I
1-MLB-4A-1	MONITOR LIGHT BOX	EI	I
1-MLB-4A-2	MONITOR LIGHT BOX	EI	I
1-MLB-4A-3	MONITOR LIGHT BOX	CC	I
1-MLB-9	MONTIOR LIGHT BOX	EI	I
1-NI-0050A-2	NEUTRON FLUX SOURCE RANGE	NI	I
1-PI-0514A	MSL 1 PRESS CHAN I	MS	I
1-PI-0935	CNTMT PRESS (IR) CHAN III	AM	I
1-PI-0937	CNTMT PRESS (IR) CHAN I	AM	I
1-PI-2453A	MD AFWP 1 DISCH PRESS	AF	I
1-PI-3616	RCS PRESS (WR)	RC	I
1-PI-4252A	SSWP 1 DISCH PRESS	SW	I
1-PI-4520	CCWP 1 DISCH PRESS	CC	I
1-PK-2325	SG 1 ATMOS RLF VLV CTRL	MS	I
1-RIC-6290A	CNTMT RAD LVL HI RNG	RM	I
1-TI-0413A	RCS HL 1-01 TRAIN A WIDE RANGE TEMP IND 0413A	XI	I
1-TI-3611-1	U1 RCS SAT MARGIN TEMP IND 3611-1	XI	I

TABLE 5-3
ERG CONTROL ROOM INSTRUMENT LIST
SEISMIC MARGIN EVALUATIOM

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-0455A	PRESSURIZER POWER OP RELIEF VALVE POSITION INDICATING LIGHT	RC	I
1-ZL-0459	CVCS FROM RCS LETDOWN TO REGENERATIVE HEAT EXCHANGER INDICATING LIGHT	CS	I
1-ZL-0610	RHRP 1-01 MINIFLO VLV INDICATING LIGHT	RH	I
1-ZL-0610	RHRP 1-01 MINIFLO VLV INDICATING LIGHT	RH	I
1-ZL-2134	FW TO SG 1 PISTON OPER ISOLATION VALVE 1-HS-2134 INDICATING LIGHT	FW	I
1-ZL-2162	FW TO SG 1 CONTR VLV BY-PASS VLV ONHS-2162	FW	I
1-ZL-2185	FW LOOP 1 TO SG 1 MAIN FW NOZZLE ISO BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2193	FW LOOP 1 TO SG 1 AUX FW NOZZLE PURGE BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2325	LOOP 1 MAIN STEAM POWER RELIEF VLV PRESSURE INDICATING LIGHT	PC	I
1-ZL-2333B	MAIN STM LOOP 1 BYPASS ISOL VLV ON HS-2333-B INDICATING LIGHT	MS	I
1-ZL-2401AB	SG 1 DRUM SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2401BB	SG 1 BLDN SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2450A	AF PUMP CP1-AFAPMD-01 CTRL CIRCUIT INDICATING LIGHT	AF	I
1-ZL-2453A	MOT DRVN AFW PMP 01 DISCH TO SG 1 CONTR VLV	AF	I
1-ZL-2491A	STM GEN LOOP #1 ISOL VLV INDICATING LIGHT ON HS-2491	AF	I
1-ZL-2491A	STM GEN LOOP #1 ISOL VLV INDICATING LIGHT ON HS-2491	AF	I
1-ZL-4250A	SSW PMP 01 REMOTE CONTROL SWITCH IND LIGHT	SW	I
1-ZL-4518A	CCW PUMP 01 CONTROL SWITCH AND LIGHT	CC	I
1-ZL-4524	CCW HX TO NON-SFGD LOOP RET HDR ISOL VLV INDIC LT ON HS-4524	CC	I
1-ZL-4526	CCW HX TO NON-SFGD LOOP ISOL VLV INDIC LT ON HS-4526	CC	I

TABLE 5-3
ERG CONTROL ROOM INSTRUMENT LIST
SEISMIC MARGIN EVALUATIOM

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-4572	CCW RHR HX 01 OUT MO CONTR VLV INDICATING LIGHT ON HS-4537	CC	I
1-ZL-4764A	CT PUMP CP1-CTAPCS-01 INDICATING LIGHT	CT	I
1-ZL-4776	CS HX 1 OUT VLV ON IND LITE	CT	I
1-ZL-8000A	RC PRESSURIZER RELIEF ISOL VLV INDICATING LIGHT	RC	I
1-ZL-8010A	PRESSURIZER SAFETY RELIEF DISCHARGE TEMP INDICATING LIGHT CB-05	RC	I
1-ZL-8106	CVCS CHRG PUMPS TO RCS ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8110	CVCS CHRG PUMP MINIFLOW ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8112	RCP SEAL WATER RET LINE ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8149A	CVCS LTDN ORIFICE ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8351A	CVCS SEAL WTR CHRG TO SEAL WTR INJ ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8511A	CVCS CHRG PUMP 01 MINIFLOW ISOL BYPASS VLV INDICATING LIGHT	CS	I
1-ZL-8701A	CL/OPEN IND LIGHTS - RHR LOOP 1 INLET ISOL VLV	RH	I
1-ZL-8716A	RHRP 1-01 XTIE VLV INDICATING LIGHT	RH	I
1-ZL-8801A	DISCH OF CVCS CHRG PUMP TO RCS COLD LEG INJ ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8804A	RHR PUMPS TO CHRG PUMPS AND SIS PUMP 01 INDICATING LIGHT	CS	I
1-ZL-8807A	SI PUMPS TO CHRG PUMPS SUCT HDR CROSS CONN VLV INDICATING LIGHT	SI	I
1-ZL-8809A	RHRS PUMP 01 TO COLD LEG ISOL VLV INDICATING LIGHT	RH	I
1-ZL-8811A	RHR PUMP 01 SUMP CTRL VLV INDICATING LIGHT	RH	I
1-ZL-8811A	RHR PUMP 01 SUMP CTRL VLV INDICATING LIGHT	RH	I
1-ZL-8812A	RHR PUMP 01 TO RWST ISOL VLV INDICATING LIGHT	RH	I
1-ZL-8821A	SI PUMP 01 CROSS-CONNECT VLV INDIC LT	SI	I
1-ZL-8835	SI PUMPS TO RCS CTRL VLV INDIC LTT	SI	I

TABLE 5-3
ERG CONTROL ROOM INSTRUMENT LIST
SEISMIC MARGIN EVALUATIOM

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-8880	SIS ACCUM N2 GAS SUPPLY ISOL VLV INDIC LT	SI	I
1-ZL-APCH1	INDICATING LIGHT - STARTS CENTRIFUGAL CHRG PP 01	CS	I
1-ZL-APRH1	STOP/AUTO/RUN IND LIGHTS - RHR PUMP RM EMER FAN-COIL UNIT 01	VAS	I
1-ZL-APSI1A	STOP/AUTO/START IND LIGHTS-SI PUMP 11	SI	I
1/1-8000A	PRZR PORV BLK VLV	RC	I
1/1-8106	CHRG PMP TO RCS ISOL VLV	CS	I
1/1-8112	RCP SEAL WTR RET ISOL VLV	CS	I
1/1-8149A	LTDN ORIFICE ISOL VLV (45 GPM)	CS	I
1/1-8149B	LTDN ORIFICE ISOL VLV (75 GPM)	CS	I
1/1-8716A	RHRP 1 XTIE VLV	RH	I
1/1-8801A	CCP SI ISOL VLV ORC	CS	I
1/1-8804A	RHRP 1 TO CCP SUCT VLV	CS	I
1/1-8807A	SI<->CHRG SUCT HDR XTIE VLV	SI	I
1/1-8809A	RHR TO CL 1 & 2 INJ ISOL VLV	RH	I
1/1-8811A	CNTMT SMP TO RHRP 1 SUCT ISOL VLV ORC	RH	I
1/1-8821A	SIP 1 XTIE VLV	SI	I
1/1-8835	SI TO CL 1 & 4 INJ ISOL VLV	SI	I
1/1-8880	SI/PORV ACCUM N2 ISOL VLV ORC	SI	I
1/1-APCH1	CCP 1	CS	I
1/1-APRH1	RHRP 1	RH	I
1/1-APSI1	SIP 1	SI	I
1/1-CIPAA1	CNTMT ISOL-PHASE A/CNTMT VENT ISOL MAN ACT	ES	I
1/1-CIPBA1A	CS/CNTMT ISOL-PHASE B MAN ACT	ES	I
1/1-CSRA	CS RESET	CT	I
1/1-LCV-0459	LTDN ISOL VLV	CS	I
1/1-PCV-0455A	PRZR PORV	RC	I
1/1-RTBAL	LIGHT CB-07	CR	I
1/1-RTC	RX TRIP BKR	ES	I
1/1-RWSTA	RHR AUTO SWOVR RESET	SI	I
1/1-SIA1	SI MAN ACT	ES	I
1/1-SIA2	SI MAN ACT 1/1 SIA2	ES	I
1/1-SIRA	SI RESET	SI	I
1/1-SLSIRBA	MSL ISOL SI RESET/BLOCK	SI	I
CS-1DG1E	DG 1 EMER START/STOP	DG	I
CS-1DG1N	HAND SWITCH	DG	I
CS-1EA1-1	INCOMING BKR 1EA1-1 CONTROL SWITCH	EPA	I
CS-1EA1-2	INCOMING BKR 1EA1-2 CONTROL SWITCH	EPA	I
F-1EG1	DG 1 FREQ	DG	I
F-1EG1	DG 1 FREQ	DG	I

TABLE 5-3
ERG CONTROL ROOM INSTRUMENT LIST
SEISMIC MARGIN EVALUATIOM

TAG	NOUN NAME	SYSTEM	CAT
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EG1	DG 1 VOLT	DG	I
V-1EG1	DG 1 VOLT	DG	I
WH/1EG1	A.C. WATTHOUR METER	DG	I
X-HS-5805A	SFP HX & PMP RM FN CLR FN 1	VAF	I
X-HS-5825A	CR MU AIR SPLY FN 37 & SUCT DMPR	VAR	I
X-HS-5855	CR EXH FN 1	VAR	I
X-HS-5857	CR KTCHN & TOIL EXH FN 3 & EXH DMPR	VAR	I

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
AFSEGA1	1AF-0013	CST TO MD AFW PMP 1-01 SUCT VLV	AF
AFSEGA1	1AF-0014	CST TO MD AFW PMP 1-01 SUCT CHK VLV	AF
AFSEGA2	1AF-0065	MD AFW PMP 1-01 DISCH CHK VLV	AF
AFSEGA2	1AF-0066	MD AFW PMP 1-01 DISCH ISOL VLV	AF
AFSEGA2	CP1-AFAPMD-01	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 1-01	AF
AFSEGA2A	1CH-0373	AFW PMP EMER FN COIL UNIT 1-07 SPLY ISOL VLV	CHS
AFSEGA2A	1CH-0374	AFW PMP EMER FN COIL UNIT 1-07 RET ISOL VLV	CHS
AFSEGA2A	CP1-CHFHCH-13	AFW PUMP RM EMER FAN COIL UNIT 1-07 CHILLED WATER SPLY FLEX HOSE 1-13	CHS
AFSEGA2A	CP1-CHFHCH-14	AFW PUMP RM EMER FAN COIL UNIT 1-07 CHILLED WATER RET FLEX HOSE 1-14	CHS
AFSEGA2A	CP1-VAAUSE-07	MD AUXILIARY FEEDWATER PUMP 1-01 ROOM FAN COOLER FAN 1-07	VAS
AFSEGA3	1-HV-2491B	MD AFW PMP 1-01 DISCH TO SG 1-01 ISOL VLV	AF
AFSEGA3	1-PV-2453A	MD AFW PMP 1-01 DISCH TO SG 1-01 CTRL VLV	AF
AFSEGA3	1AF-0074	MD AFW PMP 1-01 DISCH TO SG 1-01 UPSTRM ISOL VLV	AF
AFSEGA3	1AF-0075	MD AFW PMP 1-01 DISCH TO SG 1-01 CHK VLV	AF
AFSEGA3	1AF-0121	MD AFW PMP 1-01 DISCH TO SG 1-01 DNSTRM ISOL VLV	AF
AFSEGX01	1AF-0007	CST 1-01 TO MD AFW PMP 1-01/1-02 ISOL VLV	AF
AFSEGX03	1FW-0196	SG 1-01 FW PREHTR BYP IRC CHK VLV	FW
AFSEGX03	1FW-0200	SG 1-01 AFW NZL CHK VLV	FW
AFSEGX14	CP1-AFATCS-01	CONDENSATE STORAGE TANK 1-01	AF
AFSEGX5	1AF-0215	MD AFW PMP 1-01 FCV TO SG 1-01 AIR SPLY UPSTRM CHK VLV	AF
AFSEGX5	1AF-0216	MD AFW PMP 1-01 FCV TO SG 1-01 AIR SPLY DNSTRM CHK VLV	AF
AFSEGX5	CP1-CIATAF-07	MD AFW PUMP 1-01 DISCHARGE TO SG 1-01 FCV AIR ACCUMULATOR 1-07	AF
AFSEGX5	CP1-CIATAF-14	MD AFW PUMP 1-01 DISCHARGE TO SG 1-01 FCV AIR ACCUMULATOR 1-14	AF
CCSEGA1	1CC-0021	CCW SRG TK 1-01 TRN A OUT ISOL VLV	CC

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
CCSEGA1	1CC-0023	CCW PMP 1-01 SUCT ISOL VLV	CC
CCSEGA1	1CC-0031	CCW PMP 1-01 DISCH CHK VLV	CC
CCSEGA1	1CC-0032	CCW PMP 1-01 DISCH ISOL VLV	CC
CCSEGA1	1CC-0033	CCW HX 1-01 IN ISOL VLV	CC
CCSEGA1	1CC-0040	CCW HX 1-01 OUT ISOL VLV	CC
CCSEGA1	CP1-CCAHHX-01	COMPONENT COOLING WATER HEAT EXCHANGER 1-01	CC
CCSEGA1	CP1-CCAPCC-01	COMPONENT COOLING WATER PUMP 1-01	CC
CCSEGA3	1-HV-4512	U1 SFGD LOOP A CCW RET VLV	CC
CCSEGA3	1-HV-4514	U1 SFGD LOOP A CCW SPLY VLV	CC
CCSEGA3	1-LB-4500A-1	CCW SURGE TK LVL EMPTY/INTERLOCK BISTABLE	CC
CCSEGA7	1CH-0355	CCW PMP EMER FN COIL UNIT 1-09 CH WTR SPLY ISOL VLV	CHS
CCSEGA7	1CH-0356	CCW PMP EMER FN COIL UNIT 1-09 CH WTR RET ISOL VLV	CHS
CCSEGA7	CP1-CHFHCH-17	CCW PUMP RM EMER FAN COIL UNIT 1-09 CHILLED WATER RET FLEX HOSE 1-17	CHS
CCSEGA7	CP1-CHFHCH-18	CCW PUMP RM EMER FAN COIL UNIT 1-09 CHILLED WATER SPLY FLEX HOSE 1-18	CHS
CCSEGA7	CP1-VAAUSE-09	COMPONENT COOLING WATER PUMP 1-01 ROOM FAN COOLER FAN 1-09	VAA
CCSEGA8	1SW-0023	CCW HX 1-01 SSW OUT THROT VLV	SW
CCSEGA8	1SW-0036	CCW HX 1-01 SSW IN ISOL VLV	SW
CCSEGX1	1-HV-4524	U1 NON-SFGD LOOP CCW DNSTRM RET VLV	CC
CCSEGX1	1-HV-4525	U1 NON-SFGD LOOP CCW UPSTRM RET VLV	CC
CCSEGX1	1-HV-4526	U1 NON-SFGD LOOP CCW UPSTRM SPLY VLV	CC
CCSEGX1	1-HV-4527	U1 NON-SFGD LOOP CCW DNSTRM SPLY VLV	CC
CCSEGX3	CP1-CCATST-01	COMPONENT COOLING WATER SURGE TANK 1-01	CC
CFSEGX8	1-HV-2135	SG 1-02 FW ISOL VLV	FW
CFSEGX9	1-HV-2136	SG 1-03 FW ISOL VLV	FW
CHSEGA1	1CH-0332	SFTY CH WTR SRG TK 1-01 TRN A ISOL VLV	CHS
CHSEGA1	1CH-0334	SFTY CH WTR RECIRC PMP 1-05 SUCT ISOL VLV	CHS
CHSEGA1	1CH-0347	SFTY CHLR 1-05 CH WTR RET ISOL VLV	CHS
CHSEGA1	1CH-0388	SFTY U1 CH WTR TRN A RET HDR ISOL VLV	CHS
CHSEGA1	1CH-0451	SFTY CH WTR RECIRC PMP 1-05 DISCH ISOL VLV	CHS

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
CHSEGA1	CP1-CHAPCP-05	SAFETY CHILLED WATER RECIRC PUMP 1-05	CHS
CHSEGA1	CP1-CHCICE-05	SAFETY CHILLER 1-05	CHS
CHSEGA2	1-PT-4552	SAFETY CHILLER 1-05 CHILLER GAS PRESSURE TRANSMITTER	CC
CHSEGA2	1-PV-4552	SFTY CHLR 1-05 CCW RET PCV	CC
CHSEGA2	1CC-0203	SFTY CHLR 1-05 CCW SPLY ISOL VLV	CC
CHSEGA2	1CC-0253	SFTY CHLR 1-05 CCW RET ISOL VLV	CC
CHSEGA3	1-PV-4552	SFTY CHLR 1-05 CCW RET PCV	CC
CHSEGA3	1CC-1079	CIRCLE SEAL CHECK VALVE 1/2" FNPT	CC
CHSEGA3	1CC-1080	CIRCLE SEAL CHECK VALVE 1/2" FNPT	CC
CHSEGA3	CP1-CIATCC-01	SAFETY CHILLER 1-05 CCW RETURN PCV AIR ACCUMULATOR 1-01	CC
CHSEGX1	CP1-CHATST-01	SAFETY CHILLED WATER SURGE TANK 1-01	CHS
CSSEGA1	1-8471A	CCP 1-01 SUCT VLV	CS
CSSEGA1	1-8481A	CCP 1-01 DISCH CHK VLV	CS
CSSEGA1	1-8485A	CCP 1-01 DISCH VLV	CS
CSSEGA1	TBX-CSAPCH-01	CENTRIFUGAL CHARGING PUMP 1-01	CS
CSSEGA1L	1SW-0358	CCP 1-01 L\O CLR SSW IN ISOL VLV	SW
CSSEGA1L	1SW-0359	CCP 1-01 L\O CLR SSW OUT THROT VLV	SW
CSSEGA1L	1SW-0406	CCP 1-01 L\O CLR STRN 1-01 SSW IN ISOL VLV	SW
CSSEGA1L	1SW-0407	CCP 1-01 L\O CLR STRN 1-01 SSW OUT ISOL VLV	SW
CSSEGA1L	CP1-SWSRCH-01	CENTRIFUGAL CHARGING PUMP 1-01 LUBE OIL COOLER SSW INLET STRAINER	SW
CSSEGR1	1CH-0357	CCP EMER FN COIL UNIT 1-03 CH WTR SPLY ISOL VLV	CHS
CSSEGR1	1CH-0358	CCP EMER FN COIL UNIT 1-03 CH WTR RET ISOL VLV	CHS
CSSEGR1	CP1-CHFHCH-05	CCP RM EMER FAN COIL UNIT 1-03 CHILLED WATER RET FLEX HOSE 1-05	CHS
CSSEGR1	CP1-CHFHCH-06	CCP RM EMER FAN COIL UNIT 1-03 CHILLED WATER SPLY FLEX HOSE 1-06	CHS
CSSEGR1	CP1-VAAUSE-03	CENTRIFUGAL CHARGING PUMP 1-01 ROOM FAN COOLER FAN 1-03	VAA
CSSEGW3	1SI-0048	RWST 1-01 TO CCP ISOL VLV	SI
CSSEGW31	1-LCV-0112B	VCT 1-01 TO CHRG PMP SUCT VLV 0112B	CS

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
CSSEGW4	1-LCV-0112D	RWST 1-01 TO CHRG PMP SUCT VLV 0112D	CS
CSSEGW6	1-8546	RWST 1-01 TO CHRG PMP SUCT CHK VLV	CS
CSSEGW7	1-8804A	RHR PMP 1-01 TO CCP SUCT VLV	CS
CSSEGW7	1-8969A	RHR TO CCP 1-01/1-02 SUCT CHK VLV	CS
CSSEGW8	1-8512A	CCP 1-02 ALT MINIFLO ISOL VLV	CS
CSSEGW9	1-8511A	CCP 1-01 ALT MINIFLO ISOL VLV	CS
CSSEGX1	1-HCV-0182	U1 RC PMP SL WTR PRESS CTRL VLV	CS
CSSEGX14	1-8801A	CCP 1-01/1-02 SI ISOL VLV 8801A	CS
CSSEGX17	1-8815	CCP 1-01/1-02 INJ CHK VLV	SI
CSSEGX18	1-HV-8220	U1 CHARGE PMP SUCT H. PNT VNT VLV 8220	CS
CSSEGX20	1SI-8810A	CCP TO CL 1-01 INJ THROT VALV	SI
CSSEGX20	1SI-8900A	CCP 1-01/1-02 TO CL 1-01 CHK VLV	SI
CSSEGX21	1SI-8810B	CCP TO CL 1-02 INJ THROT VALV	SI
CSSEGX21	1SI-8900B	CCP 1-01/1-02 TO CL 1-02 CHK VLV	SI
CSSEGX24	1-8110	CCP 1-01/1-02 DNSTRM MINIFLOW VLV	CS
CSSEGX26	1-8106	U1 CHRG PMP TO RCS CNTMT ISOL VLV	CS
CSSEGX3	1CS-8345	U1 RC PMP SL WTR INJ ISOL VLV	CS
CSSEGX3	1CS-8382B	RC PMP SL WTR INJ FILT 1-02 OUT ISOL VLV UVG-34	CS
CSSEGX3	1CS-8384B	RC PMP SL WTR INJ FILT 1-02 IN ISOL VLV UVG-34	CS
CSSEGX3	TBX-CSFLSI-02	REACTOR COOLANT PUMP SEAL WATER INJECTION FILTER 1-02	CS
CSSEGX4	1-8152	U1 LTDN CNTMT ORC ISOL VLV	CS
CSSEGX4	1-8351A	RC PMP 1-01 SL WTR INJ VLV	CS
CSSEGX4	1CS-8350A	RC PMP 1-01 SL WTR INJ CHK VLV	CS
CSSEGX4	1CS-8352A	RC PMP 1-01 SL WTR INJ ISOL VLV	CS
CSSEGX4	1CS-8367A	RC PMP 1-01 SL INJ IMB CHK VLV	CS
CSSEGX4	1CS-8368A	RC PMP 1-01 SL INJ IRC CHK VLV	CS
CSSEGX4	1CS-8369A	RC PMP 1-01 SL INJ ISOL VLV	CS
CSSEGX5	1-8160	U1 LTDN CNTMT IRC ISOL VLV	CS
CSSEGX5	1-8351B	RC PMP 1-02 SL WTR INJ VLV	CS
CSSEGX5	1CS-8350B	RC PMP 1-02 SL WTR INJ CHK VLV	CS
CSSEGX5	1CS-8352B	RC PMP 1-02 SL WTR INJ ISOL VLV	CS
CSSEGX5	1CS-8367B	RC PMP 1-02 SL INJ IMB CHK V1	
CSSEGX5	1CS-8368B	RC PMP 1-02 SL INJ IRC CHK VL	

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
CSSEGX5	1CS-8369B	RC PMP 1-02 SL INJ ISOL VLV	CS
CSSEGX6	1-8100	U1 RCP SL WTR RET ISOL VLV	CS
CSSEGX6	1-8351C	RC PMP 1-03 SL WTR INJ VLV	CS
CSSEGX6	1CS-8350C	RC PMP 1-03 SL WTR INJ CHK VLV	CS
CSSEGX6	1CS-8352C	RC PMP 1-03 SL WTR INJ ISOL VLV	CS
CSSEGX6	1CS-8367C	RC PMP 1-03 SL INJ IMB CHK VLV	CS
CSSEGX6	1CS-8368C	RC PMP 1-03 SL INJ IRC CHK VLV	CS
CSSEGX6	1CS-8369C	RC PMP 1-03 SL INJ ISOL VLV	CS
CSSEGX7	1-8112	U1 RC PMP SEAL WTR RET ISOL VLV	CS
CSSEGX7	1-8351D	RC PMP 1-04 SL WTR INJ VLV	CS
CSSEGX7	1CS-8350D	RC PMP 1-04 SL WTR INJ CHK VLV	CS
CSSEGX7	1CS-8352D	RC PMP 1-04 SL WTR INJ ISOL VLV	CS
CSSEGX7	1CS-8367D	RC PMP 1-04 SL INJ IMB CHK VLV	CS
CSSEGX7	1CS-8368D	RC PMP 1-04 SL INJ IRC CHK VLV	CS
CSSEGX7	1CS-8369D	RC PMP 1-04 SL INJ ISOL VLV	CS
CTSEGX1	CP1-CTATRW-01	REFUELING WATER STORAGE TANK 1-01	SI
CTSEGX2	1SI-0047	RWST 1-01 TO SI ISOL VLV	SI
EPSEGA03	1EG1	DG 1-01 TO 6.9 KV SWGR 1EA1 EMERGENCY FEEDER BREAKER	DG
EPSEGA03	CP1-MEDGEE-01	DIESEL GENERATOR 1-01	DG
EPSEGA04	BT-1EA1	6.9 KV SWGR 1EA1 INNER BUS TIE BREAKER	EPA
EPSEGA05	CP1-EPSWEA-01	6.9 KV SWITCHGEAR 1EA1	EPA
EPSEGA06	1EB3-1	T1EB3 TO 480 VAC SWITCHGEAR 1EB3 PREFERRED FEEDER BREAKER	EPB
EPSEGA06	CP1-EPTRET-03	6900/480 VAC TRANSFORMER (1EA1/1EB3) T1EB3	EPB
EPSEGA06	T1EB3	1EA3 TO 6900/480 VAC TRANSFORMER T1EB3 FEEDER BREAKER	EPB
EPSEGA07	1EB1-1	T1EB1 TO 480 VAC SWITCHGEAR 1EB1 PREFERRED FEEDER BREAKER	EPB
EPSEGA07	CP1-EPTRET-01	6900/480 VAC TRANSFORMER (1EA1/1EB1) T1EB1	EPB
EPSEGA07	T1EB1	6900/480 VAC TRANSFORMER TIEB1 (1EA1/1EB1) FEEDER BREAKER	EPB
EPSEGA08	CP1-EPSWEB-03	480 VAC SWITCHGEAR 1EB3	EPB
EPSEGA09	1EB3/7C/BKR	1EB3 TO 480 VAC MCC XEB3-3 FEEDER BREAKER	EPB
EPSEGA09	1EB3/7C/COMP	480V SWGR BUS 1EB3 COMPARTMENT	EPB
EPSEGA10	CPX-EPMCEB-03	480 VAC MOTOR CONTROL CENTER XEB3-2	EPC
EPSEGA11	1EB3/9D/BKR	1EB3 TO 480 VAC MCC 1EB3-1 FEEDER BREAKER	EPB

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
EPSEGA11	CP1-EPMCEB-03	480 VAC MOTOR CONTROL CENTER 1EB3-1	EPC
EPSEGA12	1EB3/8C/BKR	1EB3 TO 480 VAC MCC 1EB3-2 FEEDER BREAKER	EPB
EPSEGA12	CP1-EPMCEB-05	480 VAC MOTOR CONTROL CENTER 1EB3-2	EPC
EPSEGA13	1EB3/8D/BKR	1EB3 TO 480 VAC MCC 1EB3-3 FEEDER BREAKER	EPB
EPSEGA13	CP1-EPMCEB-07	480 VAC MOTOR CONTROL CENTER 1EB3-3	EPC
EPSEGA14	1EB3/7D/BKR	1EB3 TO 480 VAC MCC 1EB3-4 FEEDER BREAKER	EPB
EPSEGA14	CP1-EPMCEB-09	480 VAC MOTOR CONTROL CENTER 1EB3-4	EPC
EPSEGA15	CP1-EPSWEB-01	480 VAC SWITCHGEAR 1EB1	EPB
EPSEGA18	CPX-EPMCEB-01	480 VAC MOTOR CONTROL CENTER XEB1-2	EPC
EPSEGA18	XEB1-2/1M/BKR-2	SWGR 2EB1 TO 480 VAC MCC XEB1-2 ALTERNATE FEEDER BREAKER	EPC
EPSEGA19	1EB1/3D/BKR	1EB1 TO 480 VAC MCC 1EB1-1 FEEDER BREAKER	EPB
EPSEGA19	1EB1/3D/COMP	480V SWGR BUS 1EB1 COMPARTMENT	EPB
EPSEGA19	CP1-EPMCEB-01	480 VAC MOTOR CONTROL CENTER 1EB1-1	EPC
EPSEGA20	1EB1/3C/BKR	1EB1 TO 480 VAC MCC XEB1-2 FEEDER BREAKER	EPB
EPSEGA20	1EB1/3C/COMP	480V SWGR BUS 1EB1 COMPARTMENT	EPB
EPSEGA29	1EB3-3/2E/COMP	480V MCC BUS 1EB3-3 COMPARTMENT	EPC
EPSEGC01	1CH-0378	ELEC AREA EMER FN COIL UNIT 1-17 CH WTR SPLY ISOL VLV	CHS
EPSEGC01	1CH-0379	ELEC AREA EMER FN COIL UNIT 1-17 CH WTR RET ISOL VLV	CHS
EPSEGC01	1CH-0380	ELEC AREA EMER FN COIL UNIT 1-18 CH WTR SPLY ISOL VLV	CHS
EPSEGC01	1CH-0381	ELEC AREA EMER FN COIL UNIT 1-18 CH WTR RET ISOL VLV	CHS
EPSEGC01	CP1-CHFHCH-33	ELEC AREA EMERGENCY FAN COIL UNIT 1-17 CH WATER SPLY FLEX HOSE 1-33	CHS
EPSEGC01	CP1-CHFHCH-34	ELEC AREA EMERGENCY FAN COIL UNIT 1-17 CH WATER RET FLEX HOSE 1-34	CHS
EPSEGC01	CP1-CHFHCH-35	ELEC AREA EMERGENCY FAN COIL UNIT 1-18 CH WATER SPLY FLEX HOSE 1-35	CHS
EPSEGC01	CP1-CHFHCH-36	ELEC AREA EMERGENCY FAN COIL UNIT 1-18 CH WATER RET FLEX	CHS

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
EPSEGC01	CP1-VAAUSE-17	ELECTRICAL AREA FAN COOLER FAN 1-17	VAS
EPSEGC01	CP1-VAAUSE-18	ELECTRICAL AREA FAN COOLER FAN 1-18	VAS
EPSEGC01	CP1-VADPGU-60	ELECTRICAL AREA FAN COOLER FAN 1-17 DISCHARGE GRAVITY DAMPER 1-60	VAS
EPSEGC01	CP1-VADPGU-61	ELECTRICAL AREA FAN COOLER FAN 1-18 DISCHARGE GRAVITY DAMPER 1-61	VAS
EPSEGE01	1ED1/1-1/DSW	125 VDC STATION BATTERY BT1ED1 FUSED DISCONNECT SWITCH	EPD
EPSEGE01	CP1-EPBTED-01	125 VDC STATION BATTERY BT1ED1	EPD
EPSEGE02	CP1-EPSWED-01	125 VDC SWITCHBOARD 1ED1	EPD
EPSEGE03	1EB1-1/2M/BKR	125 VDC BATTERY CHARGER BC1ED1-1 SUPPLY BREAKER	EPD
EPSEGE03	1ED1/2-8/BKR	125 VDC BATTERY CHARGER BC1ED1-1 FEEDER BREAKER	EPD
EPSEGE03	CP1-EPBCED-01	125 VDC BATTERY CHARGER BC1ED1-1	EPD
EPSEGE06	CP1-ECIVEC-01	118 VAC SAFEGUARDS BALANCE OF PLANT INVERTER IV1EC1	ECI
EPSEGE07	1EC1/00/BKR-1	IV1EC1 TO 118 VAC INSTRUMENT DISTR PANEL 1EC1 PREFERRED FEEDER BREAKER	ECI
EPSEGE08	1EB1-1/2HR/BKR	118 VAC SAFEGUARDS BOP INVERTER IV1EC1 SUPPLY BREAKER	ECI
EPSEGE10	CP1-ECDPEC-01	1EC1 118V AC INST DIST PNLBD TRAIN A	ECI
EPSEGE11	1ED1/2-10/BKR	118 VAC REACTOR PROTECTION SYSTEM (CH I) INVERTER IV1PC1 SUPPLY BREAKE	ECI
EPSEGE13	TBX-ESELIV-01	118 VAC REACTOR PROTECTION SYSTEM INVERTER IV1PC1	ECI
EPSEGE14	1PC1/00/BKR-1	IV1PC1 TO 118 VAC INSTRUMENT DISTR PANEL 1PC1 PREFERRED FEEDER BREAKER	ECI
EPSEGE16	CP1-ECDPPC-01	1PC1 118VAC INST DP CH1 GROUP 1	ECI
EPSEGE17	1ED1/1-7/DSW	125 VDC DISTRIBUTION PANEL 1ED1-1 FUSED SWITCH	EPD
EPSEGE17	CP1-ECDPED-01	125 VDC DISTRIBUTION PANEL 1ED1-1	EPD
EPSEGE18	1ED1/1-5/DSW	125 VDC DISTRIBUTION PANEL 1ED1-2 FUSED DISCONNECT SWITCH	EPD
EPSEGE18	CP1-ECDPED-03	125 VDC DISTRIBUTION PANEL 1ED1-2	EPD
EPSEGE22	1ED3/1-1/DSW	125 VDC BATTERY BT1ED3 FUSED DISCONNECT SWITCH	EPD

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
EPSEGE22	CP1-EPBTED-03	125 VDC STATION BATTERY BT1ED3	EPD
EPSEGE23	1EB1-1/9G/BKR	125 VDC BATTERY CHARGER BC1ED3-1 SUPPLY BREAKER	EPD
EPSEGE23	1ED3/2-8/BKR	125 VDC BATTERY CHARGER BC1ED3-1 FEEDER BREAKER	EPD
EPSEGE23	CP1-EPBCED-05	125 VDC BATTERY CHARGER BC1ED3-1	EPD
EPSEGE25	CP1-EPSWED-03	125 VDC SWITCHBOARD 1ED3	EPD
EPSEGE27	CP1-ECIVEC-03	118 VAC SAFEGUARDS BALANCE OF PLANT INVERTER IV1EC3	ECI
EPSEGE28	1EB1-1/9JR/BKR	118 VAC SAFEGUARDS BOP INVERTER IV1EC3 SUPPLY BREAKER	ECI
EPSEGE32	1EC5/11/BKR	CIRCUIT BREAKER FOR POWER TO INSTR PNL BD XEC1-1	ECI
EPSEGE33	CPX-ECDPEC-01	118V AC INST DIST PNLBD XEC1-1	ECI
EPSEGE35	1ED3/2-11/BKR	118 VAC REACTOR PROCTECTION SYSTEM (CH III) INVERTER IV1PC3 SUPPLY BKR	ECI
EPSEGE37	TBX-ESELIV-03	118 VAC REACTOR PROTECTION SYSTEM INVERTER IV1PC3	ECI
EPSEGE38	1PC3/00/BKR-1	IV1PC3 TO 118 VAC INSTRUMENT DISTR PANEL 1PC3 PREFERRED FEEDER BREAKER	ECI
EPSEGE40	CP1-ECDPPC-03	1PC3 118VAC INST DP CH3 GROUP 3	ECI
EPSEGE42	CP1-ECDPEC-11	1EC5 118VAC DIST PNL	ECI
EPSEGG01	CP1-VADPGU-42	BATTERY ROOM 1-1 EXHAUST FAN 1-08 DISCHARGE GRAVITY DAMPER	VAB
EPSEGG01	CP1-VADPOU-04	BATTERY ROOM 1-1 EXHAUST FAN 1-08 INLET DAMPER	VAB
EPSEGG01	CP1-VAFNID-08	BATTERY ROOM 1-A EXHAUST FAN 1-08	VAB
EPSEGI01	CP1-VADPGU-48	DIESEL GENERATOR 1-01 ROOM VENT FAN 1-25 DISCHARGE GRAVITY DAMPER	VAD
EPSEGI01	CP1-VADPGU-49	DIESEL GENERATOR 1-01 ROOM VENT FAN 1-26 DISCHARGE GRAVITY DAMPER	VAD
EPSEGI01	CP1-VADPGU-50	DIESEL GENERATOR 1-01 ROOM VENT FAN 1-27 DISCHARGE GRAVITY DAMPER	VAD
EPSEGI01	CP1-VADPGU-51	DIESEL GENERATOR 1-01 ROOM VENT FAN 1-28 DISCHARGE GRAVITY DAMPER	VAD
EPSEGI01	CP1-VAFNAV-25	DIESEL GENERATOR 1-01 ROOM VENTILATION FAN 1-25	VAD
EPSEGI01	CP1-VAFNAV-26	DIESEL GENERATOR 1-01 ROOM VENTILATION FAN 1-26	VAD

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
EPSEGI01	CP1-VAFNAV-27	DIESEL GENERATOR 1-01 ROOM VENTILATION FAN 1-27	VAD
EPSEGI01	CP1-VAFNAV-28	DIESEL GENERATOR 1-01 ROOM VENTILATION FAN 1-28	VAD
EPSEGK01	CP1-DOATST-01	DIESEL GENERATOR 1-01 FUEL OIL STORAGE TANK 1-01	DO
EPSEGK02	1-LS-3375A	DIESEL GENERATOR 1-01 FUEL OIL DAY TANK 1-01 LEVEL SWITCH 3375A	DO
EPSEGK02	1DO-0002	DG 1-01 FO XREF PMP 1-01 DISCH VLV	DO
EPSEGK02	1DO-0004	DG 1-01 FO XFER PMP 1-01 DISCH CHK VLV	DO
EPSEGK02	CP1-DOAPFT-01	DIESEL GENERATOR 1-01 FUEL OIL TRANSFER PUMP 1-01	DO
EPSEGK02	CP1-DOSRTP-01	DIESEL GENERATOR 1-01 FUEL OIL TRANSFER PUMP STRAINER 1-01	DO
EPSEGK04	1DO-0029	DG 1-01 FO DAY TK 1-01 OUT VLV	DO
EPSEGK04	1DO-0049	DG 1-01 FO DAY TK 1-01 XFER HDR CHK VLV	DO
EPSEGK04	CP1-DOATDT-01	DIESEL GENERATOR 1-01 FUEL OIL DAY TANK 1-01	DO
EPSEGN01	1CC-0976	UPS A\C UNIT X-01 U1 CCW SPLY HDR UPSTRM ISOL VLV	CC
EPSEGN01	CPX-VAACUP-01	UNINTERRUPTIBLE POWER SUPPLY AIR CONDITIONING UNIT X-01	VAU
EPSEGN01	CPX-VADPGU-34	UPS A/C UNIT 01 DISCHARGE GRAVITY DAMPER	VAU
EPSEGN01	CPX-VAFNAV-42	UNINTERRUPTIBLE POWER SUPPLY AND DISTR ROOM BOOSTER RETURN FAN X-42	VAU
EPSEGN01	X-PCV-H116A	UPS A\C UNIT X-01 CCW RET PCV	VAU
EPSEGN01	XCC-0232	UPS A\C UNIT X-01 CCW SPLY DNSTRM ISOL VLV	CC
EPSEGN01	XCC-0233	UPS A\C UNIT X-01 CCW RET ISOL VLV	CC
EPSEGP03	272X11EA115	UNDER-VOLTAGE RELAY 27-2A/1EA1 CONTACT	EPA
EPSEGP05	27-2A/1EA1	PROTECTIVE RELAY	EPA
EPSEGP05	27-2B/1EA1	PROTECTIVE RELAY	EPA
EPSEGP05	272A1EA1112	UNDER-VOLTAGE RELAY 27-2A/1EA1 CONTACT	EPA
EPSEGP05	272B1EA1112	UNDER-VOLTAGE RELAY 27-2A/1EA1 CONTACT	EPA
EPSEGP09	27-2X1/1EA1	TIME DELAY RELAY	EPA
EPSEGP10	272X11EA126	UNDER-VOLTAGE RELAY 27-2A/1EA1 CONTACT	EPA
ESSEGA1	1-K501-A	SSPS MASTER RELAY/SI	ES

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
ESSEGA1	1-K601-A	SSPS SLAVE RELAY/SI	ES
ESSEGA1	1-K603-A	SSPS SLAVE RELAY/SI	ES
ESSEGA1	1-K608-A	SSPS SLAVE RELAY/SI	ES
ESSEGA1	1-K610-A	SSPS SLAVE RELAY/SI	ES
ESSEGA18	1-A213-A	UNIVERSAL LOGIC BOARD/SSPS	ES
ESSEGA2	1-A204-A	UNIVERSAL LOGIC BOARD/SSPS	ES
ESSEGA23	1-A307-A	UNIVERSAL LOGIC BOARD/SSPS	ES
ESSEGA24	1-K504-A	SSPS MASTER RELAY/STEAMLINE STOP VALVES	ES
ESSEGA24	1-K627-A	SSPS SLAVE RELAY/STEAMLINE STOP VALVE	ES
ESSEGA24	1-K634-A	SSPS SLAVE RELAY/STEAMLINE STOP VALVES	ES
ESSEGA25	1-A308-A	UNIVERSAL LOGIC BOARD/SSPS	ES
ESSEGA27	1-A313-A	UNIVERSAL LOGIC BOARD/SSPS	ES
ESSEGA28	1-A315-A	UNIVERSAL LOGIC BOARD/SSPS	ES
ESSEGA29	1-A316-A	UNIVERSAL LOGIC BOARD/SSPS	ES
ESSEGA3	1-K502-A	SSPS MASTER RELAY/CONTAINMENT ISOL PHASE A	ES
ESSEGA3	1-K522-A	SSPS MASTER RELAY/CONTAINMENT ISOL PHASE A	ES
ESSEGA3	1-K622-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	ES
ESSEGA3	1-K623-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	ES
ESSEGA3	1-K624-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	ES
ESSEGA3	1-K629-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	ES
ESSEGA3	1-K630-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PHASE A	ES
ESSEGA3	1-K631-A	SSPS SLAVE RELAY/CONTAINMENT ISOL PAHSE A	ES
ESSEGA35	1-A416-A	UNIVERSAL LOGIC BOARD/SSPS	ES
ESSEGA5	1-K503-A	SSPS MASTER RELAY/CONTAINMENT VENT ISOL	ES
ESSEGA5	1-K607-A	SSPS SLAVE RELAY/CONTAINMENT VENT ISOL	ES
ESSEGA5	1-K614-A	SSPS SLAVE RELAY/CONTAINMENT VENT ISOL	ES
ESSEGA5	1-K636-A	SSPS SLAVE RELAY/CONTAINMENT VENT ISOL	ES
ESSEGA53	1-A516-A	SAFEGUARDS OUTPUT/SSPS	ES
ESSEGA54	1-A517-A	SAFEGUARDS OUTPUT/SSPS	ES
ESSEGA55	1-A518-A	SAFEGUARDS OUTPUT/SSPS	ES
ESSEGA56	1-K131-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (I)	ES
ESSEGA59	1-K444-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (IV)	ES

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
ESSEGA7	1-K521-A	SSPS MASTER RELAY/SI	ES
ESSEGA8	1-K525-A	SSPS MASTER RELAY/SI	ES
ESSEGA83	1-K133-A	INPUT RELAY/LOW STEAMLINE PRESS BISTABLE-LOOP 1	ES
ESSEGA84	1-K247-A	INPUT RELAY/LOW STEAMLINE PRESS BISTABLE-LOOP 1	ES
ESSEGA97	1-A203-A	UNIVERSAL LOGIC BOARD/SSPS	ES
ESSEGD16	1-K602-A	SSPS SLAVE RELAY/TEST	ES
ESSEGD16	1-K609-A	SSPS SLAVE RELAY/SI	ES
ESSEGD17	1-K615-A	SSPS SLAVE RELAY/SI	ES
ESSEGD17	1-K616-A	SSPS SLAVE RELAY/SI	ES
ESSEGD17	1-K740-A	SSPS SLAVE RELAY /NI	ES
ESSEGD19	1-K604-A	SSPS SLAVE RELAY/SI	ES
ESSEGD19	1-K611-A	SSPS SLAVE RELAY/SI	ES
ESSEGD22	1-CR01/48Q	48V (ESFAS) POWER SUPPLY	EI
ESSEGD24	1-CR01/15Q	+15V (ESFAS) POWER SUPPLY	EI
ESSEGD32	CP1-ECPRCR-01	SOLID STATE SAFEGUARDS SYSTEM SEQUENCER CABINET 1-CR-01	ES
ESSEGD41	1EA1/27-1A	PROTECTIVE RELAY	EPA
ESSEGD42	1EA1/27-1C	PROTECTIVE RELAY	EPA
ESSEGD43	1EA1/27-1B	PROTECTIVE RELAY	EPA
ESSEGD45	CP1-ECPRCR-01	SOLID STATE SAFEGUARDS SYSTEM SEQUENCER CABINET 1-CR-01	ES
ESSEGD46	1-K350-A	INPUT RELAY/NIS HI NEUT POS FLUX RATE BISTABLE (III)	ES
ESSEGD47	PT/1EA1-1	POTENTIAL TRANSFORMER BUS (1EA1-1)	EPA
ESSEGD48	PT/1EA1-2	POTENTIAL TRANSFORMER (BUS 1EA1-2)	EPA
ESSEGD91	1-K110-A	INPUT RELAY/RWST LO-LO LEVEL (I)	ES
ESSEGD93	1-K341-A	INPUT RELAY/RWST LO-LO LEVEL (III)	ES
ESSEGD95	1-K514-A	SSPS MASTER RELAY/RWST LO-LO LEAD	ES
ESSEGD96	1-K741-A	SSPS SLAVE RELAY/RWST LO-LO LEVEL	ES
ESSEGRT1	52/RTA	REACTOR TRIP BREAKER CONTACT	ES
ESSEGRT3	52/SHTRA	REACTOR TRIP BREAKER SHUNT TRIP COIL	ES
ESSEGRT7	1/1-RT	CONTROL ROOM REACTOR TRIP HANDSWITCH	ES
ESSEGRT7	CRHS1	CONTROL ROOM REACTOR TRIP HANDSWITCH	ES
ESSEGX17	1-PB-0455A	PRESSURIZER PRESSURE (PROT. SET I) - SINGLE COMPARATOR	RC
ESSEGX17	1-PQY-0455	LOOP POWER SUPPLY	RC
ESSEGX17	1-PS-0455F	PRESSURIZER PRESSURE CONT 5 POSTON SWITCH	ES

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
ESSEGX17	1-PT-0455	PRESSURIZER 1-01 PRESSURE TRANSMITTER 0455 PROT CHAN I	RC
ESSEGX39	1-PB-0514A	STEAM LINE PRESSURE (LOOP 1 PROT. SET I) SINGLE COMPARATOR	MS
ESSEGX39	1-PQY-0514	LOOP POWER SUPPLY	MS
ESSEGX39	1-PS-0514A	PRESSURE SWITCH	MS
ESSEGX39	1-PT-0514	MAIN STEAM LINE 1-01 PRESSURE TRANSMITTER 0514 PROT CHAN I	MS
ESSEGX39	1-PY-0514B	LEAD LAG AMPLIFIER LOOP I PROT SET I	MS
ESSEGX91	1-LB-0930E	REFUELING WATER STORAGE TANK LEVEL (PROTSET I) SINGLE COMPARATOR	SI
ESSEGX91	1-LS-0930E	LEVEL SWITCH	ES
ESSEGX91	1-LY-930E	POWER SUPPLY	ES
ESSEGX93	1-LB-0932E	REFUELING WATER STORAGE TANK LEVEL (PROT. SET III) SINGLE COMPARATOR	SI
ESSEGX93	1-LS-0932E	LEVEL SWITCH	ES
ESSEGX93	1-LY-932E	POWER SUPPLY	ES
ESSEGY1	1-K122-A	INPUT RELAY/STM GEN LO-LO WATER LEVEL BISTABLE-LOOP 1	ES
ESSEGY17	1-K131-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (I)	ES
ESSEGY17	1-K131-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (I)	ES
ESSEGY19	1-K444-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (IV)	ES
ESSEGY19	1-K444-A	INPUT RELAY/PRZR LOW PRESS BISTABLE (IV)	ES
ESSEGY39	1-K133-A	INPUT RELAY/LOW STEAMLINE PRESS BISTABLE-LOOP 1	ES
ESSEGY40	1-K247-A	INPUT RELAY/LOW STEAMLINE PRESS BISTABLE-LOOP 1	ES
ESSEGY91	1-K110-A	INPUT RELAY/RWST LO-LO LEVEL (I)	ES
ESSEGY93	1-K341-A	INPUT RELAY/RWST LO-LO LEVEL (III)	ES
FWSEGZ1	1-HV-2134	SG 1-01 FW ISOL VLV	FW
FWSEGZ2	1-FV-2193	SG 1-01 FW PREHTR BYP VLV	FW
FWSEGZ7	1-HV-2137	SG 1-04 FW ISOL VLV	FW
FWSEGZ8	1-FV-2196	SG 1-04 FW PREHTR BYP VLV	FW
MSSEGW2	CP1-MSATRT-02	STEAM GENERATOR 1-01 ATMOSPHERIC RELIEF VALVE AIR ACCUMULATOR 1-02	MS
MSSEGW6	1MS-0703	SG 1-01 ATMOS RLF VLV AIR ACCUM 1-02 ISOL VLV	MS
MSSEGX10	1-HV-2334A	MSIV 1-02	MS

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
MSSEGX11	1-HV-2335A	MSIV 1-03	MS
MSSEGX12	1-HV-2336A	MSIV 1-04	MS
MSSEGX19	1-PT-2325	MAIN STEAM LINE 1-01 PRESSURE TRANSMITTER 2325	MS
MSSEGX19	1-PV-2325	SG 1-01 ATMOS RLF VLV	MS
MSSEGX23	1-PV-2325	SG 1-01 ATMOS RLF VLV	MS
MSSEGX23	1MS-0026	SG 1-01 ATMOS RLF VLV UPSTRM ISOL VLV	MS
MSSEGX27	1MS-0681	SG 1-01 ATMOS RELIEF VALVE AIR SUPPLY DOWNSTREAM CHECK VALVE	MS
MSSEGX9	1-HV-2333A	MSIV 1-01	MS
RCSEGA01	1-PCV-0455A	PRZR 1-01 PORV 0455A	RC
RCSEGA03	1-8000A	PRZR 1-01 PORV 0455A BLK VLV	RC
RCSEGA3	1SI-0170	PORV 0455A N2 ACCUM 1-02 ISOL VLV	RC
RCSEGA3	1SI-0180	N2 SPLY TO PORV 0455A ISOL VLV	RC
RCSEGA3	CP1-SIATRT-02	POWER OPERATED RELIEF VALVE 0455A NITROGEN ACCUMULATOR 1-02	RC
RCSEGC1	1-8010A	PRZR 1-01 SFTY VLV A	RC
RCSEGC2	1-8010B	PRZR 1-01 SFTY VLV B	RC
RCSEGX1	1-PT-0455	PRESSURIZER 1-01 PRESSURE TRANSMITTER 0455 PROT CHAN I	RC
RCSEGX1A	1RC-8053A	PRZR 1-01 PT-0455/0455F/LT-0459/0459F UP RT VLV	RC
RCSEGX4A	1RC-8053B	PRZR 1-01 PT-0456/0458/LT-0460 UP RT VLV	RC
RHSEGA1	1-8811A	CNTMT SMP TO RHR PMP 1-01 SUCT ISOL VLV	RH
RHSEGA1	1-8812A	RWST 1-01 TO RHR PMP 1-01 SUCT VLV	RH
RHSEGA1	1-8958A	RWST 1-01 TO RHR PMP 1-01 CHK VLV	RH
RHSEGA10	1-8811A	CNTMT SMP TO RHR PMP 1-01 SUCT ISOL VLV	RH
RHSEGA11	1-HV-4572	RHR HX 1-01 CCW RET VLV	CC
RHSEGA11	1CC-0109	RHR HX 1-01 CCW SPLY ISOL VLV	CC
RHSEGA12	1-8809A	RHR TO CL 1-01/1-02 INJ ISOL VLV	RH
RHSEGA13	1-8716A	RHR PMP 1-01 XTIE VLV	RH
RHSEGA14	1-8701A	RHR PMP 1-01 HL 1-01 RECIRC OMB ISOL VLV	RH
RHSEGA14	1-8702A	RHR PMP 1-01 HL 1-01 REICRC IMB ISOL VLV	RH
RHSEGA15	1-8708A	RHR PMP 1-01 SUCT RLF VLV	RH
RHSEGA16	1-FCV-0618	RHR HX 1-01 BYP FLO CTRL VLV	RH
RHSEGA18	1-8812A	RWST 1-01 TO RHR PMP 1-01 SUCT VLV	RH

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
RHSEGA19	1-A203-A	UNIVERSAL LOGIC BOARD/SSPS	ES
RHSEGA19	1-A518-A	SAFEGUARDS OUTPUT/SSPS	ES
RHSEGA19	1-K514-A	SSPS MASTER RELAY/RWST LO-LO LEAD	ES
RHSEGA19	1-K741-A	SSPS SLAVE RELAY/RWST LO-LO LEVEL	ES
RHSEGA2	1-8724A	RHR PMP 1-01 DISCH ISOL VLV	RH
RHSEGA2	1-FCV-0610	RHR PMP 1-01 MINIFLO VLV	RH
RHSEGA2	1-FIS-0610	RESIDUAL HEAT REMOVAL PUMP 1-01 DISCHARGE FLOW INDICATING SWITCH	RH
RHSEGA2	TBX-RHAHRS-01	RESIDUAL HEAT REMOVAL HEAT EXCHANGER 1-01	RH
RHSEGA2	TBX-RHAPRH-01	RESIDUAL HEAT REMOVAL PUMP 1-01	RH
RHSEGA20	1CH-0368	RHR PMP EMER FN COIL UNIT 1-01 CH WTR SPLY ISOL VLV	CHS
RHSEGA20	1CH-0369	RHR PMP EMER FN COIL UNIT 1-01 CH WTR RET ISOL VLV	CHS
RHSEGA20	CP1-CHFHCH-01	RHR PUMP RM EMER FAN COIL UNIT 1-01 CHILLED WATER SPLY FLEX HOSE 1-01	CHS
RHSEGA20	CP1-CHFHCH-02	RHR PUMP RM EMER FAN COIL UNIT 1-01 CHILLED WATER RET FLEX HOSE 1-02	CHS
RHSEGA20	CP1-VAAUSE-01	RESIDUAL HEAT REMOVAL PUMP 1-01 ROOM FAN COOLER FAN 1-01	VAS
RHSEGA2L	1CC-0099	RHR PMP 1-01 SL CLR CCW RET ISOL VLV	CC
RHSEGA2L	1CC-0102	RHR PMP 1-01 SL CLR CCW SPLY ISOL VLV	CC
RHSEGA2L	1CC-0282	RHR PMP 1-01 SL CLR CCW RET FLO IND SW UPSTRM 4548 ISOL VLV	CC
RHSEGA2L	1CC-0283	RHR PMP 1-01 SL CLR CCW RET FLO IND SW DNSTRM 4548 ISOL VLV	CC
RHSEGA3	1-HCV-0606	RHR HX 1-01 FLO CTRL VLV	RH
RHSEGA3C	1-8730A	RHR HX 1-01 DISCH CHK VLV	RH
RHSEGA5	1-8818A	RHR CL 1-01 INJ CHK VLV	SI
RHSEGA7	1-8948A	SI ACCUM 1-01 DNSTRM INJ CHK VLV	SI
RHSEGA9	SUMP#1	TRAIN A CONTAINMENT RECIRCULATION SUMP	RH
RHSEGX10	1-8949C	RHR TO RCP HL 1-03 DNSTRM CHK VLV	SI
RHSEGX11	1-8840	RHR TO HL 1-02/1-03 INJ ISOL VLV	RH

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST
(SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
RHSEGX2	1-8717	U1 RHR PMPS DISCH TO RWST ISOL VLV	RH
RHSEGX20	1-PB-0405A	WIDE RANGE LP-1 HOT DUAL COMPARATOR	RC
RHSEGX20	1-PB-0405B	WIDE RANGE LP-1 HOT DUAL COMPARATOR	RC
RHSEGX20	1-PT-0405	REACTOR COOLANT HOT LEG 1-01 PRESSURE TRANSMITTER 0405 (WIDE RANGE)	RC
RHSEGX7	1-8841A	RHR TO RCS HL 1-02 UPSTRM CHK VLV	SI
RHSEGX8	1-8949B	RHR TO RCP HL 1-02 DNSTRM CHK VLV	SI
SISEGAI0	1-8923A	SI PMP 1-01 SUCT VLV	SI
SISEGAI1	1-8921A	SI PMP 1-01 DISCH ISOL VLV	SI
SISEGAI1	1-8922A	SI PMP 1-01 DISCH CHK VLV	SI
SISEGAI1	TBX-SIAPSI-01	SAFETY INJECTION PUMP 1-01	SI
SISEGAI2	1-8814A	SI PMP 1-01 MINIFLO VLV	SI
SISEGAI2	1SI-8919A	SI PMP 1-01 TO RWST CHK VLV	SI
SISEGAI4	1-8821A	SI PMP 1-01 XTIE VLV	SI
SISEGAI5	1SI-8819A	SI CL 1-01 CHK VLV	SI
SISEGAI5	1SI-8822A	SI CL 1-01 INJ THROT VLV	SI
SISEGAI6	CP1-CHFHCH-09	SI PUMP RM EMER FAN COIL UNIT 1-05 CHILLED WATER SPLY FLEX HOSE 1-09	CHS
SISEGAI6	CP1-CHFHCH-10	SI PUMP RM EMER FAN COIL UNIT 1-05 CHILLED WATER RET FLEX HOSE 1-10	CHS
SISEGAI6	CP1-VAAUSE-05	SAFETY INJECTION PUMP 1-01 ROOM FAN COOLER FAN 1-05	VAS
SISEGAL1	CP1-SWSRSI-01	SAFETY INJECTION PUMP 1-01 LUBE OIL COOLER SSW INLET STRAINER	SW
SISEGAR6	1-8802A	SI PMP 1-01 TO HL 2 & 3 INJ ISOL VLV	SI
SISEGBI5	1SI-8819B	SI CL 1-02 CHK VLV	SI
SISEGBI5	1SI-8822B	SI CL 1-02 INJ THROT VLV	SI
SISEGBR5	1SI-8816B	SI HL 1-02 INJ THROT VLV	SI
SISEGBR5	1SI-8905B	SI HL 1-02 INJ CHK VLV	SI
SISEGCR5	1SI-8816C	SI HL 1-03 INJ THROT VLV	SI
SISEGCR5	1SI-8905C	SI HL 1-03 INJ CHK VLV	SI
SISEGXI1	1-8806	RWST 1-01 TO SI PMPS SUCT VLV	SI
SISEGXI1	1-8926	SI PMP 1-01/1-02 SUCT CHK VLV	SI
SISEGXI2	1-8813	SI PMP 1-01/1-02 MINIFLO RET VLV	SI
SISEGXI3	1-8835	SI PMP 1-01/1-02 TO CL INJ ISOL VLV	SI
SISEGXR1	1-8804B	RHR PMP 1-02 TO SI PMPS SUCT VLV	SI

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
SISEGXR1	1-8969B	RHR TO SI PMP 1-01/1-02 SUCT CHK VLV	CS
SISEGXR3	1-8807A	U1 SIP/CCP SUCT HDR XTIE VLV 8807A	SI
SISEGXR5	1-8924	U1 SIP/CCP SUCT HDR XTIE ISOL VLV	SI
SWSEGA1	1-HV-4286	SSW PMP 1-01 DISCH VLV	SW
SWSEGA1	1SW-0374	SSW PMP 1-01 DISCH CHK VLV	SW
SWSEGA1	CP1-SWAPSW-01	STATION SERVICE WATER PUMP 1-01	SW
SWSEGA2	1SW-0068	SSW PMP 1-01 BRG WTR STRN 1-02 OUT ISOL VLV	SW
SWSEGA2	1SW-0074	SSW PMP 1-01 BRG WTR STRN 1-02 IN ISOL VLV	SW
SWSEGA2	1SW-0084	SSW PMP 1-01 TO TRN A BRG WTR STRN CHK VLV	SW
SWSEGA2	1SW-0422	SSW PMP 1-01 BRG WTR STRN 1-06 IN VLV	SW
SWSEGA2	1SW-0423	SSW PMP 1-01 BRG WTR STRN 1-06 OUT VLV	SW
SWSEGA2	1SW-0428	SSW PMP 1-01 BRG WTR STRN 05/06 BYPASS THROT VLV	SW
SWSEGA2	CP1-SWSRPL-02	STATION SERVICE WATER PUMP 1-01 BEARING WATER STRAINER 1-02	SW
SWSEGA2	CP1-SWSRPL-06	STATION SERVICE WATER PUMP 1-01 BEARING WATER STRAINER 1-06	SW
SWSEGA4	1SW-0001	U1 SSW TRN A RET HDR ISOL VLV	SW
SWSEGA4	1SW-0017	U1 SSW TRN A SPLY HDR IN CHK VLV	SW
SWSEGA4	1SW-0020	U1 SSW TRN A SPLY HDR IN ISOL VLV	SW
SWSEGA4B	1SW-0017	U1 SSW TRN A SPLY HDR IN CHK VLV	SW
SWSEGA5	1-HV-4393	DG 1-01 JKT WTR CLR SSW RET VLV	SW
SWSEGA5	1SW-0335	DG 1-01 JKT WTR CLR SSW IN ISOL VLV	SW
SWSEGA5	1SW-0350	DG 1-01 JKT WTR CLR SSW OUT THROT VLV	SW
SWSEGA6	1SW-0002	U1 SSW TRN A TO SSW DISCH CNL ISOL VLV	SW
SWSEGX1	CPX-VAFNWV-06	SWIS EXHAUST FAN X-06	VAM
SWSEGX1	CPX-VAFNWV-07	SWIS EXHAUST FAN X-07	VAM
VASEGA1	1CC-0207	CR A\C UNIT X-01 CCW SPLY ISOL VLV	CC
VASEGA1	1CC-0256	CR A\C UNIT X-01 CCW RET ISOL VLV	CC

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
VASEGA1	1CC-0994	CR A\C UNIT X-01/X-02 CCW RET ISOL VLV	CC
VASEGA1	1CC-0995	CR A\C UNIT X-01/X-02 CCW SPLY ISOL VLV	CC
VASEGA1	CPX-VAACCR-01	CONTROL ROOM AIR CONDITIONING UNIT X-01	VAR
VASEGA1	CPX-VAACCR-01B	CONTROL ROOM A/C COOLING COIL	VAR
VASEGA1	CPX-VAACCR-01M	CONTROL ROOM AIR CONDITIONING UNIT X-01 FAN MOTOR	VAR
VASEGA1	CPX-VADPGU-05	CR A/C UNIT 01 DISCHARGE GRAVITY DAMPER	VAR
VASEGA1	CPX-VADPOU-10	CR A/C UNIT 02 INLET ISOL AIR-OPER DAMPER	VAR
VASEGA1	X-PV-3583	CR A\C UNIT X-01 CCW RET PCV	VAR
VASEGC1	CPX-VADPOU-48	CR A/C SYS SUPPLY-AIR FLOW BALANCING AIR OPER DAMPER	VAR
ZI/OTHER	1-FI-4556	RHR HX 1 CCW RET FLO	RH
ZI/OTHER	1-FT-2463A	STEAM GENERATOR 1-01 AUXILIARY FEEDWATER FLOW TRANSMITTER 2463A	AF
ZI/OTHER	1-FT-4258	STATION SERVICE WATER PUMP 1-01 DISCHARGE FLOW TRANSMITTER	SW
ZI/OTHER	1-FT-4536A	CCW HEAT EXCHANGER 1-01 OUTLET FLOW TRANSMITTER	CC
ZI/OTHER	1-FT-4556	RHR HEAT EXCHANGER 1-01 CCW RETURN FLOW TRANSMITTER	CC
ZI/OTHER	1-FV-2194	SG 1-02 FW PREHTR BYP VLV	FW
ZI/OTHER	1-FV-2195	SG 1-03 FW PREHTR BYP VLV	FW
ZI/OTHER	1-HV-2480	MD AFW PUMP 1-01 SSW SUCTION ISOLATION VALVE	AF
ZI/OTHER	1-HV-4395	SSW TRN A TO U1 AFW PUMP SUCTION VALVE	SW
ZI/OTHER	1-LS-6712	SAFETY CHILLED WATER SURGE TANK 1-01 LEVEL SWITCH 6712	CHS
ZI/OTHER	1-LT-0930	REFUELING WATER STORAGE TANK 1-01 LEVEL TRANSMITTER 0930 PROT CHAN I	RH
ZI/OTHER	1-LT-0932	REFUELING WATER STORAGE TANK 1-01 LEVEL TRANSMITTER 0932 PROT CHAN III	RH
ZI/OTHER	1-LT-4500	COMPONENT COOLING WATER SURGE TANK 1-01 TRAIN A LEVEL TRANSMITTER	CC
ZI/OTHER	1-LT-4779	CONTAINMENT RECIRCULATING SUMP 1-01 LEVEL TRANSMITTER	RH
ZI/OTHER	1-PT-0524	MAIN STEAM LINE 1-02 PRESSURE TRANSMITTER 0524 PROT CHAN I	MS

TABLE 5-4
SEISMIC SAFE SHUTDOWN EQUIPMENT LIST (SSEL)
LISTED BY SEGMENT

SEGMENT	TAG	NOUN NAME	SYSTEM
ZI/OTHER	1-PT-2327	MAIN STEAM LINE 1-03 PRESSURE TRANSMITTER 2327	MS
ZI/OTHER	1-PT-2453	MD AUXILIARY FEEDWATER PUMP 1-01 DISCHARGE PRESS TRANSMITTER	AF
ZI/OTHER	1-PT-2475	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 1-01 SUCTION PRESS TRANSMITTER	AF
ZI/OTHER	1-PT-4252	STATION SERVICE WATER PUMP 1-01 DISCHARGE PRESSURE TRANSMITTER	SW
ZI/OTHER	1-PT-4520	COMPONENT COOLING WATER PUMP 1-01 DISCHARGE PRESSURE TRANSMITTER	CC
ZI/OTHER	1-TE-4530	CCW HEAT EXCHANGER 1-01 OUTLET TEMPERATURE ELEMENT 4530	CC
ZI/OTHER	1-TE-4557	RHR HEAT EXCHANGER 1-01 CCW RETURN TEMPERATURE ELEMENT	CC
ZI/OTHER	1-TI-4557	RHR HX 1 CCW RET TEMP	RH
ZI/OTHER	1CS-8387A	CCP 1-01 ALTERNATE SEAL INJECTION VALVE	CS

Evaluation of the Availability of Instrumentation and Control Functions for Control Room Operators and an Evaluation of Human Interactions Given the Safe Shutdown Earthquake

Attachment A

Evaluation of the Availability of Instrumentation and Control Functions for Control Room Operators and an Evaluation of Human Interactions Given the Safe Shutdown Earthquake

1. Purpose

The purpose of this study is to determine the effect of the seismic event (SSE) on the availability of control room instrumentation and control functions and on the required human interactions.

2. Discussion

As part of the IPE for Internal Events (IPE), a detailed and comprehensive analysis of human interactions was done to assess the failure probability of the human actions required to mitigate an accident or event. These actions were identified and modeled as appropriate based on a review of the emergency procedures used by operators for the event. Most of the dynamic actions were included in the system fault tree models or in the functional fault trees as part of the accident sequence analysis. This is described in CPSES Calculation No. RXE-SY-CP1/1-020, 'Human Reliability Analysis', and other IPE-related calculations. These actions include such tasks as operating a valve or starting a pump after an auto-start failure.

These actions are included in various plant operating procedures and operators are regularly trained in the use of the procedures. Such procedural guidance for mitigating a wide range of situations is provided in the Emergency Operating Procedures, Abnormal Conditions Procedures and System Operating Procedures, among others. Each system notebook that was prepared for the IPE system analysis includes a section titled Operator Interface. This section discusses the operator actions, including dynamic actions and, in some cases, recovery actions, related to operation of the systems under the anticipated accident conditions. The entire evaluation of human actions is based heavily on discussions with operators, review of existing procedures, and interviews of training personnel.

3. Evaluation and Results

3.1 Evaluation of human interactions

In considering human interactions for purposes of the IPEEE seismic evaluation, the ground work laid by the IPE work was used. For the seismic evaluation, the human interactions identified in the IPE following the LOOP and VSBLOCA initiating events(and other human interactions as well) were evaluated to determine whether the seismic event would impact the ability of the operator to respond adequately to the event, or result in some new situation or require some additional action.

The evaluation was done by the system analyst and an operations representative who is qualified as Senior Reactor Operator (SRO). This operations representative had participated in the IPE work in both the systems analysis and human reliability analysis. The method used was relatively straightforward. The SRO reviewed each of the dynamic actions considered in the IPE and made a qualitative statement as to whether or not the operator could be expected to perform that action following the seismic event. [It should be noted that some of these dynamic actions are required to recover from random failure events, such as a pump failing to start. EPRI NP-6041 provides that for the seismic margins evaluation, random equipment failures need not be assumed to occur during the recovery.]

A review was also made of the primary procedures used to respond to the seismically-induced LOOP or VSBLOCA initiating event. Each procedure was reviewed step-by-step and the availability of control room instruments and controls necessary to effect the particular step of the recovery was determined based on the seismic qualification of the control/ instrument. Non-seismic instruments were assumed to be unavailable and the availability of other instruments to provide the equivalent information was determined. It was also determined when the indication/control was not required for mitigation of the specific event under consideration.

The procedures that were reviewed include the following:

EOP-0.0A/B, Reactor Trip or Safety Injection

EOP-1.0A/B, Loss of Reactor or Secondary Coolant

EOS-1.2A/B, Post LOCA Cooldown and Depressurization

EOS-0.1A/B, Reactor Trip Response

EOS-0.2A/B, Natural Circulation Cooldown

This procedure review is documented in Attachment 1. The result of this effort is a database that lists the control room instruments available to the operator following the seismic event, shown in Attachment 2. Most of the primary indications and controls indicated in the procedures to be used by the operators to monitor and control the event are available. Some indications are not directly available to the operators but the required information is available indirectly from other instruments. Local indications and controls are also available to outside-of-control-room operators for many functions.

Some indications that are not directly available to the operators relate to the operation of the ECCS system. These are:

RCP Seal Water Injection Flow

RHR to Cold Leg 1&2 Injection Flow

CCP Safety Injection Flow

SIP Discharge Flow

Charging Header Pressure

RHR Pump Discharge Pressure

SIP Discharge Pressure

In the course of this evaluation, Section 7.5 of the FSAR was reviewed wherein the information systems important to safety are discussed in detail. It is noted that for the indications listed above, key information such as pump status, valve status, tank levels and system pressures and temperatures is available to the operator and provides an adequate means for monitoring the course of the event.

In the judgement of the reviewers, the instrumentation and controls available to the operator provide sufficient information to the operator to monitor and control the course of the event.

3.2 Discussion of the Instrument Air System

The IPE assumes that the Instrument Air System is either available or can be recovered following the events modeled. Though this system is not safety related, it aids the operator considerably in recovery from various events. In addition, the system is not seismic Category I, therefore it cannot be assumed to be operable following a SSE. However, the piping system is typically seismic Category II and the major equipment is generally rugged and located in seismic Category I structures, thus it is possible that the system could be recovered in part.

No credit was taken for recovery in this analysis. The design of CPSES assumes the loss of Instrument Air and provides safety related air receivers and associated piping and valves as a backup for safety related functions. In addition, where local operator action is required to perform the safety related functions for times beyond the available time of the backup system, ample time is available for an operator to go to the area and take that action. The operator actions required in response to a loss of Instrument Air are proceduralized, and operators are trained in the use of these procedures. Therefore, it can be expected that the operator will take appropriate and timely action.

3.3 Results

The seismic event will not adversely effect the performance of human interactions required to mitigate the effects of a seismically-initiated LOOP and VSBLOCA initiating event. Adequate instrumentation is available to the operator to monitor and control the course of events. The design of CPSES anticipates the loss of the Instrument Air System and provides safety related portions for safety related functions. All of the anticipated events are proceduralized and the operators are regularly trained in the use of them. Therefore, the operators can be expected to adequately monitor and control the plant to mitigate the seismic event.

4. Attachments

Attachment 1

Attachment 2

EVALUATION OF EMERGENCY RESPONSE GUIDELINE (ERG) EQUIPMENT AVAILABILITY FOLLOWING A SEISMIC EVENT

Objective - Evaluate ERG direction for the events identified below to determine indication and control equipment availability following a seismic event. Identify the indication and controls required to accomplish the ERG direction and the associated seismic qualification.

Event - 1. Small break LOCA with a Loss of Offsite Power following a Seismic Event (MSIV closure is imminent following event)

2. Reactor Trip with a Loss of Offsite Power and subsequent Natural Circulation Cooldown following a Seismic Event

Legend for "Comments" section of the step by step evaluation:

SQ, NOT SQ - Used to identify FSAR Table 7.5-7A status of the variable with respect to Seismic Qualification (SQ). When indication is "NOT SQ", the use of the indication is discussed to determine if alternate indication is available or allowances exist.

* - Used with "NOT SQ" to identify that alternate indications or allowances can be made so that specific indication is not required.

** - Used with "NOT SQ" to identify that alternate indications or allowances are not immediately available and the specific indication should be evaluated further.

NOTE 1 - Identifies that the equipment or related portion of the system is Seismic Qualified in FSAR Table 17A-1. It has been assumed that if the specific equipment or related portion of the system is SQ, then the control is available following a Seismic event.

NOTE 2 - Identifies that the equipment or related portion of the system is not Seismic Qualified per FSAR Table 17A-1.

NOTE 3 - Identifies that the equipment or related portion of the system is Seismic Qualified in FSAR Table 17A-1; however, the control portion is not believed to be Seismically Qualified.

EVALUATION OF ERG EQUIPMENT AVAILABILITY
FOLLOWING A SIEMIC EVENT

SMALL BREAK LOCA
WITH A LOSS OF OFFSITE POWER
FOLLOWING A SEISMIC EVENT

EOP-0.0A/B, Reactor Trip or Safety Injection (Step 1 through 25)
EOP-1.0A/B, Loss of Reactor or Secondary Coolant (Step 1 through 13)
EOS-1.2A/B, Post LOCA Cooldown and Depressurization (Step 1 through 36)

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
EOP-0.0A/B STEP 1 THROUGH 25						
Note	Containment Pressure	-	CB-03	PI934-937	AM ✓	SQ
	Containment Radiation	-	PC-11	RE-6290A&B	RM NR	SQ
1	Rx Trip & Bypass Brkr Status Lights	-	CB-07	RTBAL, RTBBL, BBAL, BBBL	CR ✓	* NOT SQ. INDICATION USED TO VERIFY POWER TO THE CNTRL & SHTDWN RODS REMOVED. WITH LOSS OF OFFSITE POWER, POWER MAINTAINING RODS WITHDRAWN IS NOT AVAILABLE. OPERATOR CAN CONFIRM REACTOR SHUTDOWN WITH NI INDICATION.
	Nuclear Instrumentation	-	CB-07 & NIS CAB	NI-50A-2 & 50B-2	NI ✓	SQ
	DRPI	-	CB-07			* NOT SQ. USED TO VERIFY CTRL & SHTDWN RODS INSERTED. REACTOR SHUTDOWN CAN BE VERIFIED WITH NI INDICATION. EMERGENCY BORATE WHEN DRPI INDICATION NOT AVAILABLE. WITH LOSS OF OFFSITE POWER, DRPI INDICATION LOST.
	-	Reactor Trip Handswitch	CB-07 or CB-10	RTC, RT	[illegible] ✓	NOTE 1
	CCP Status Lights	-	CB-07	APCH1/2	CS ✓	SQ
	BA Pmp Status Lights Emer Borate Vlv Status Lights Emer Boration Flow	- - -	CB-06 CB-06 CB-06	APBA1/2 8104 FI-183A	CB NR NR	** "BORIC ACID FLOW" NOT SQ PER FSAR TABLE 7.5-7A. OPERATION OF BORIC ACID SYSTEM REQUIRED WHEN DRPI INDICATION LOST OR 2 OR MORE CONTROL RODS NOT FULLY INSERTED.
	Chrg to RCS Isol Vlv Status Lights	-	CB-06	8105 & 8106	CS ✓	SQ
	Chrg Flow	-	CB-06	FI-121	CS NR	** NOT SQ. USED FOR VERIFICATION OF ADEQUATE BORATION FLOW. ALTERNATE INDICATION FROM CCP SI FLOW BUT IT'S ONLY SQ FOR PRESSURE BOUNDARY INTEGRITY.
	PRZR Pressure	-	CB-05	PI455 - 458	RC NR	* NOT SQ. ALTERNATE SQ INDICATION OF RCS WR PRESSURE CAN BE USED TO MONITOR RCS PRESSURE TO ENSURE ADEQUATE BORATION FLOW.
	PRZR PORV Status Lights	-	CB-05	PCV-455 & 456	RC NR	SQ
	-	CCP	CB-06	APCH1/2	CS ✓	NOTE 1

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
1 Cont'd	-	BA Pumps	CB-06	APBA1/2	CB NR	NOTE 1
	-	Emer Borate Vlv	CB-06	8104	CB NR	NOTE 1
2	Turb Stop Vlv Status Lights	-	CB-10	ZL-2428A - 2431A & 2413A - 2416A	MS NR	* NOT SQ. INDICATION IS USED TO VERIFY TURBINE TRIP TO MINIMIZE SG INVENTORY LOSS AND SUBSEQUENT RCS COOLDOWN. ONCE MSIV CLOSURE OCCURS, THIS IS NOT CRITICAL WITH RESPECT TO SG LEVEL OR RCS COOLDOWN.
	Turb Stop Vlv TSLBs	-	CB-4	TSLB-3 /1.6-4.6	EI NR	
	Turb Trip Fluid Pressure	-	CB-10	PI-6565	EH NR	* NOT SQ. INDICATION IS USED TO SUPPORT ALTERNATE METHODS TO TRIP THE MAIN TURBINE WHEN TURBINE STOP VALVES CAN NOT BE VERIFIED CLOSED. ONCE MSIV CLOSURE OCCURS, THIS IS NOT CRITICAL WITH RESPECT TO SG LEVEL OR RCS COOLDOWN.
	Turbine Speed	-	CB-10	SI-6572	TA NR	
	EHC Fluid Pump Status Lights	-	CB-10	HS-6550 - 6552	EH NR	
	Turb Trip Fluid Press Trip Status Lights	-	CB-04	TSLB-3 /1.7-3.7	EI NR	
	-	Turb Trip PB	CB-10	-	TA NR	NOTE 2
	-	EHC Pump	CB-10	HS-6550 - 6552	EH NR	NOTE 2
	-	Turb Trip -Lcl	Local	-	EH NR	NOTE 2
3	AC Bus Volt	-	CB-11	V-1EA1/2 V-2EA1/2	EPA	SQ ADD
	AC Bus Sply Brkr Status Lights	-	CB-11	CS-: 1EA1-1/2 2EA1-1/2	EPA NR	* NOT SQ. INDICATION SERVES AS SUPPORTIVE INDICATION THAT THE BUS IS POWERED AND THE DIESEL GENERATOR IS OPERATING PROPERLY. WHEN SAFETY RELATED LOADS ARE OPERATING, THE OPERATOR KNOWS THE BUS IS POWERED. NORMAL OPERATION HAS OPERATOR TO LOCALLY MONITOR D/G PERFORMANCE.
	DG Status Lights	-	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	
	DG Volt/Freq	-	CB-11	V-: 1EG1(2) 2EG1(2) F-: 1EG1(2) 2EG1(2)	EPA	ADD ADD
	-	AC Bus Sply Brkr	CB-11	CS-: 1EA1-1/2 2EA1-1/2	EPA ✓	NOTE 1

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ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
3 Cont'd	-	Diesel Generator	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	NOTE 1
4	SI Actuation	-	CB-07	ALB-6C/ 1.7,2.7 3.7,4.7 PCIP 1.8	EI NR	* NOT SQ. INDICATION CONFIRMS THAT SI HAS ACTUATED. IF NOT AVAILABLE, OPERATOR CHECKS CNTMT PRESS, PRZR PRESS AND MAIN STEAM PRESSURE TO DETERMINE IF SI REQUIRED.
	Containment Pressure	-	CB-03	PI934-937	AM ✓	SQ
	Mn Stm Pressure	-	CB-08	PI: 514-16A 524-26A 534-36A 544-46A	MS ✓	SQ
	PRZR Pressure	-	CB-05	PI: 455A, 456,457	RC NR	* NOT SQ. RCS PRESSURE IS SQ AND CAN BE USED AS ALTERNATE INDICATION.
	-	SI Actuation	CB-02, CB-07	SIA1 SIA2	ES ✓	NOTE 1
5	SSWP Status Lights	-	CB-02	HS-4250A HS-4251A	SW ✓	SQ
	SSWP Flow	-	CB-02	FI-4258A FI-4259A	SW ✓	SQ
	SSWP Disch Pressure	-	CB-02	PI-4252A PI-4253A	SW ✓	* NOT SQ. INDICATION USED TO MONITOR PROPER SSW PUMP OPERATION. WITH STATUS LIGHTS AND FLOW, PROPER PUMP OPERATION (PUMP ACTUALLY RUNNING) CAN BE VERIFIED.
	-	SSW Pump	CB-02	HS-4250A HS-4251A	SW ✓	NOTE 1
6	SIP Status Lights	-	CB-02	APSI1/2	SI ✓	SQ
	SIP Disch Pressure	-	CB-02	PI 919, 923	SI Note	** NOT SQ. INDICATION USED TO MONOTOR PROPER SI PUMP OPERATION. STATUS LIGHTS ONLY INDICATES BRKR CLOSED, NOT PUMP RUNNING. PRESSURE USED TO CONFIRM PUMP RUNNING WITH HIGHER RCS PRESSURES WHEN FLOW NOT REQ'D.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
6 Cont'd	-	SI Pump	CB-02	APSI1/2	SI ✓	NOTE 1
7	Containment Phase A Isol Alignment	-	CB-02	MLB-1A1&2, 1B1&2,4A1&2 4B1&2,4A3, 4B3,45A, 45B	EI ✓	* MONITOR LIGHT BOXES NOT SPECIFICALLY IDENTIFIED AS SQ. ATTACHMENT 1 IDENTIFIES SPECIFIC COMPONENTS AND THE SQ STATUS OF EACH AT IT'S RESPECTIVE CONTROL.
	-	Cntmt Isol Phase A/Cntmt Vent Isol Man Act	CB-02	CIPAA1 CIPAA2	ES ✓	NOTE 1 ADD
8	Containment Ventilation Isol Alignment	-	CB-02	MLB-45A, 45B	EI ✓	* MONITOR LIGHT BOXES NOT SPECIFICALLY IDENTIFIED AS SQ. ATTACHMENT 2 IDENTIFIES SPECIFIC COMPONENTS AND THE SQ STATUS OF EACH AT IT'S RESPECTIVE CONTROL.
	-	Cntmt Isol Phase A/Cntmt Vent Isol Man Act	CB-02	CIPAA1 CIPAA2	ES ✓	NOTE 1
9	Containment Spray Actuation	-	CB-02	ALB-2A/ 1.8, 4.11	EI NR	* NOT SQ. INDICATION IS USED TO CONFIRM CONTAIMENT SPRAY ACTUATION REQUIRED. CONTAINMENT PRESSURE COULD HAVE INCREASED ABOVE 18 PSIG AND THEN REDUCED BELOW 18 PSIG DUE TO SPRAY. WITH SQ INDICATION OF CSP AND HX VLVS, OPERATOR COULD CONFIRM SPRAY ACTUATION.
	Containment Pressure	-	CB-03	PI934-937	AM ✓	SQ
	Cntmt Spray HX Out Vlv Status Lights	-	CB-02	HS-4776 HS-4777	CT ✓	SQ ADD
	CS Pump Status Lights	-	CB-02	HS-4764-4767	CT ✓	SQ ADD
	Containment Phase B Isol/Spray Alignment	-	CB-02	MLB-4A3, 4B3	EI ✓	* MONITOR LIGHT BOXES NOT SPECIFICALLY IDENTIFIED AS SQ. ATTACHMENT 3 IDENTIFIES SPECIFIC COMPONENTS AND THE SQ STATUS OF EACH AT IT'S RESPECTIVE CONTROL.
	CS Pump Flow	-	CB-02	FI4772-1/2, FI4773-1/2	CT ✓	SQ ADD
	RCP Status Lights RCP Amps	-	CB-05	PCPX1-4	RC NR	* NOT SQ. INDICATION ONLY REQUIRED TO CONFIRM REACTOR COOLANT PUMPS STOPPED WHEN SPRAY ACTUATED. WITB LOSS OF NON-SFGDS BUSSES, OPERATOR CAN CONFIRM RCPS NOT RUNNING.
		-	CB-05	IIRCP1-4	RC NR	

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
9 Cont'd	-	CS/Cntmt Isol-Phase B Man Act	CB-02, CB-07	CIPBA1A CIPBA2A CIPBA1B CIPBA2B	ZS ✓	NOTE 1 ADD
	-	RCP	CB-05	PCPX1-4	RC NC	NOT REQ'D DUE TO LOSS OF POWER.
	-	Cntmt Spray HX Out Vlvs	CB-03	HS-4776 HS-4777	CT ✓	NOTE 1
	-	CS Pump	CB-02	HS-4764-4767	CT ✓	NOTE 1
10	CCW Pump Status Lights	-	CB-03	HS-4518A HS-4519A	CC ✓	SQ
	CCW Flow	-	CB-03	FI4536A FI4537A	CC ✓	SQ
	CCWP Disch Pressure	-	CB-03	PI4520 PI4521	CC ✓	MELFEB93 SHOWS SQ * ~~NOT~~ SQ. INDICATION USED TO MONITOR PROPER CCW PUMP OPERATION. WITH STATUS LIGHTS AND FLOW, PROPER PUMP OPERATION (PUMP ACTUALLY RUNNING) CAN BE VERIFIED.
	-	CCW Pump	CB-03	HS-4518A HS-4519A	CC ✓	NOTE 1
11	RHR Pump Status Lights	-	CB-04	APRH-1/2	RH ✓	SQ
	RHRP Disch Pressure	-	CB-04	PI614, 615	RH NOTE	** NOT SQ. INDICATION USED TO MONITOR PROPER RHR PUMP OPERATION. STATUS LIGHTS ONLY INDICATES BRKR CLOSED, NOT PUMP RUNNING. PRESSURE USED TO CONFIRM PUMP RUNNING WITH HIGHER RCS PRESSURE WHEN FLOW NOT REQUIRED.
	-	RHR Pump	CB-04	ARRH1/2	RH ✓	NOTE 1
12	CCP Status Lights	-	CB-06	APCH1/2	CS ✓	SQ
	Charging Hdr Pressure	-	CB-06	PI120A	CS NOTE	** NOT SQ. INDICATION USED TO MONITOR PROPER CCP OPERATION. STATUS LIGHTS ONLY INDICATES BRKR CLOSED, NOT PUMP RUNNING. PRESSURE USED TO CONFIRM PUMP RUNNING. CCP SI FLOW INDICATION WHICH COULD BE USED TO VERIFY PUMP RUNNING IS NOT SQ
	Letdown Vlv Status Lights	-	CB-06	LCV459& 460, 8149A, B&C	CS ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
12 Cont'd	-	CCP	CB-06	APCH1/2	CS ✓	NOTE 1
	-	Letdown Vlvs	CB-06	LCV459& 460 8149A, B&C	CS ✓	NOTE 1
13	Containment Pressure	-	CB-03	PI934-937	AM ✓	SQ
	Mn Stm Pressure	-	CB-08	PI: 514-16A 524-26A 534-36A 544-46A	MS ✓	SQ
	MSIV & Bypass Vlv Status Lights	-	CB-08	HS-2333A - 2336A ZL-2333B - 2336B	MS ✓	SQ
	-	MSIVs	CB-08	HS-2333A - 2336A	MS ✓	NOTE 1
	-	MSIV Bypass Vlvs	Local	HV-2333B - 2336B	MS ✓	NOTE 1
14	FW Isol Vlvs	-	CB-09	HS-2134 - 2137	FW nl	SQ
	FW Isol Byp Vlvs	-	CB-09	HS-2185 - 2188	FW ✓	SQ
	FW Preheater Byp Vlvs	-	CB-09	HS-2193 - 2196	FW nl	SQ
	FW Cntrl Vlvs	-	CB-09	ZL-510, 520,530, 540	FW nl	SQ
	FW Cntrl Byp Vlvs	-	CB-09	HS-2162 - 2165	FW ✓	SQ
	FW Splitflow Byp Vlvs	-	CB-09	ZL-2181 - 2184	FW nl	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
14 Cont'd	-	FW Isol Vlvs	CB-09	HS-2134 - 2137	FW ✓	NOTE 1
	-	FW Isol Byp Vlvs	CB-09	HS-2185 - 2188	FW ✓	NOTE 1
	-	FW Preheater Byp Vlvs	CB-09	HS-2193 - 2196	FW ✓	NOTE 1
	-	FW Cntrl Vlvs	CB-09	FK-510, 520,530,540	FW NR	NOTE 1
	-	FW Cntrl Byp Vlvs	CB-09	LK-550, 560,570,580	FW NR	NOTE 1
	-	FW Splitflow Byp Vlvs	CB-09	FK-2181 - 2184	FW NR	NOTE 1
15	MDAFWP Status Lights	-	CB-09	HS-2450A HS-2451A	AF ✓	SQ
	TDAFWP Stm Sply Vlv Status Lights	-	CB-09	HS2452-1 HS2452-2	AF NR	SQ
	MDAFWP Disch Pressure	-	CB-09	PI2453A PI2454A	AF ✓	MELFEB93 SHOULD SQ ~~* NOT SQ~~. INDICATION USED TO MONITOR PROPER AFW PUMP OPERATION. WITH STATUS LIGHTS AND FLOW INDICATION, PROPER PUMP OPERATION CAN BE VERIFIED.
	TDAFWP Disch Pressure	-	CB-09	PI2455A	AF NR	* NOT SQ. INDICATION USED TO MONITOR PROPER AFW PUMP OPERATION. WITH STEAM SUPPLY VALVES STATUS LIGHTS AND FLOW INDICATION, PROPER PUMP OPERATION CAN BE VERIFIED.
	-	MDAFW Pump	CB-09	HS-2450A HS-2451A	AF ✓	NOTE 1
	-	TDAFW Pump Stm Sply Vlvs	CB-09	HS2452-1 HS2452-2	AF NR	NOTE 1
16	AFW Flow	-	CB-09	FI2463A - 2466A FI2463C - 2466C	AF ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
16 Cont'd	SG Level - NR	-	CB-09	LI: 517-519 527-529 537-539 547-549 551-554	MS ✓	SQ
	MDAFWP Status Lights	-	CB-09	HS-2450A HS-2451A	AF ✓	SQ
	TDAFWP Stm Sply Vlv Status Lights	-	CB-09	HS2452-1 HS2452-2	AF NR	SQ
	AFW Valves (Control & Isolation)	-	CB-09	ZL: 2491A&B- 2494A&B 2453A&B 2454A&B 2459A - 2462A	AF ✓	SQ
	-	AFW Valves (Control & Isolation)	CB-09	FK: 2453A&B 2454A&B 2459A - 2462A HS: 2491A&B- 2494A&B	AF ✓	NOTE 1 ADD
	-	MDAFW Pump	CB-09	HS-2450A HS-2451A	AF ✓	NOTE 1
	-	TDAFW Pump	CB-09	HS2452-1 HS2452-2	AF NR	NOTE 1
17	CCP SI Flow	-	CB-04	FI917	CS ✓	ADD * SQ FOR PRESSURE BOUNDARY INTEGRITY. USED TO CONFIRM ECCS MAKEUP FLOW TO THE REACTOR. ALTERNATE SQ INDICATION AVAILABLE WITH PRZR LEVEL.
	RCS Pressure - Wide Range	-	CB-05	PI403 PR437 PI3616	RC ✓	SQ
	SIP Disch Flow	-	CB-02	FI918 & 922	SI ✓	ADD * SQ FOR PRESSURE BOUNDARY INTEGRITY. USED TO CONFIRM ECCS MAKEUP FLOW TO THE REACTOR. ALTERNATE SQ INDICATION AVAILABLE WITH PRZR LEVEL.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
17 Cont'd	RCS Pressure - Narrow Range	-	CB-04	PI403A	RC NR	* NOT SQ. WIDE RANGE PRESSURE CAN BE USED AS ALTERNATE INDICATION.
	RHR To Cold Leg Injection Flow	-	CB-04	FI618 & 619	RH ✓	SQ ADD
	CCP SI Isol Vlv Status Lights	-	CB-04	HS8801A &B	CS ✓	SQ
	SI Vlv Status Lights	-	CB-02	HS8835, 8821A&B	SI ✓	SQ ADD 8835
	RHR Vlv Status Lights	-	CB-04	HS8809A &B, 8716A&B	RH ✓	SQ
	-	CCP SI Isol Vlvs	CB-04	HS8801A &B	CS ✓	NOTE 1 1/1-
	-	SI Vlvs	CB-02	HS8835, 8821A&B	SI ✓	NOTE 1
	-	RHR Vlvs	CB-04	HS8809A &B, 8716A&B	RH ✓	NOTE 1
18	DG Status Lights	-	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	* NOT SQ. INDICATION SERVES AS SUPPORTIVE INDICATION THAT THE BUS IS POWERED AND THE DIESEL GENERATOR IS OPERATING PROPERLY. NORMAL OPERATION HAS OPERATOR TO LOCALLY MONITOR D/G PERFORMANCE.
	DG Volt/Freq	-	CB-11	V-: 1EG1(2) 2EG1(2) F-: 1EG1(2) 2EG1(2)	EPA ✓	
	DG SSW Flow	-	CB-02	FI4391 FI4392	SW NR	* NOT SQ. INDICATION USED TO CONFIRM DG COOLING ADEQUATE TO MAINTAIN DG OPERATION. NORMAL OPERATION HAS OPERATOR TO LOCALLY MONITOR D/G PERFORMANCE. LOCAL TEMPERATURE INDICATOR CAN BE USED TO CONFIRM COOLING ADEQUATE.
	DG SSW Vlv Status Lights	-	CB-02	HS4393 HS4394	✓	
	SI/SI Sequencer Status	-	CB-07 SEQ PNL	PCIP/ 1.8&2.8	ES NR	* NOT SQ. PCIP INDICATION CONFIRMS SI RESET. SEQUENCER INDICATION CONFIRMS SEQ RESET. BOTH LOCATED IN CONTROL ROOM. WITHOUT INDICATION, OPERATOR WOULD CONTINUE STEPS AND CAN DETERMINE IF SI IS RESET.
	AC Bus Volt	-	CB-11	V-1EA1/2 V-2EA1/2	EPA ✓	SQ

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ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
18 Cont'd	-	Diesel Generator	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	NOTE 1
	-	DG SSW Vlv	CB-11	HS439~~4~~3 HS4394	SW ✓	NOTE 1
	-	SI Reset	CB-02	SIRA SIRB	ES ✓	NOTE 1
	-	SI Sequencer Reset	SEQ PNL	ECPRCR- 01/02	ES ✓	NOTE 1
19	SI Alignment	-	CB-02	MLB- 1A1,1A2, 1B1,1B2, 4A1,4A2, 4B1,4B2	EI ✓	* MONITOR LIGHT BOXES NOT SPECIFICALLY IDENTIFIED AS SQ. ATTACHMENT 4 IDENTIFIES SPECIFIC COMPONENTS AND THE SQ STATUS OF EACH. ADDITIONAL COMPONENTS WITHOUT MLB INDICATION REQUIRED TO BE CHECKED. ATTACHMENT 5 IDENTIFIES SPECIFIC COMPONENTS AND THE SQ STATUS OF EACH. LOCAL VERIFICATIONS REQUIRED.
	SI Load Shed Alignment	-	CB-11	MLB-9&10	EI ✓	* NOT SQ. INDICATION IS USED TO VERIFY LOAD SHED TO PREVENT EXCESSIVE LOADING OF THE SAFEGUARDS POWER SOURCE. LOAD SHED CAN BE VERIFIED LOCALLY <u>OR</u> IF POWER SOURCE HAS ALREADY ASSUMED LOADS AND DO NOT EXCEED MOST RESTRICTIVE LIMIT (7 MW on DG CHECKED LOCALLY), THEN NOT REQUIRED.
	SI Actuation	-	CB-07	ALB-6C/1.7 PCIP/1.8	EI NR	* NOT SQ. INDICATION CONFIRMS THAT MANUAL SI HAS ACTUATED. IF INDICATION NOT AVAILABLE, STILL HAVE OPTION TO LOCALLY VERIFY LOAD SHED DUE TO SI.
	-	SI Actuation	CB-02, CB-07	SIA1 SIA2	ES ✓	NOTE 1
20	RCS TAVG	-	CB-07	TI412, 422,432,442	RC NR	* NOT SQ. ALTERNATE SQ INDICATION AVAILABLE TO MONITOR RCS TEMPERATURE. T(COLD) RCS (WR) & T(HOT) RCS (WR).
	Steam Dump Vlv Status Lights	-	CB-08	ZL-: 2369A-C 2370A-J	MS NR	* NOT SQ. USED TO IDENTIFY STEAM DUMPS BEING OPEN AS CAUSE OF RCS TEMPERATURE DECREASE. ONCE MSIV CLOSURE OCCURS, STEAM DUMPS WILL NOT BE CAUSE OF RCS TEMPERATURE DECREASE.
	SG Atmospheric Status Lights	-	CB-08	ZL2325-2328	MS ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
20 Cont'd	AFW Flow	-	CB-09	FI2463A - 2466A FI2463C - 2466C	AF ✓	SQ
	TDAFWP Stm Sply Vlv Status Lights	-	CB-09	HS2452-1 HS2452-2	AF NP	SQ
	MSIV & Bypass Vlv Status Lights	-	CB-08	HS-2333A - 2336A ZL-2333B - 2336B	MS ✓	SQ
	-	Steam Dump Vlv	CB-08	PK-507	MS NP	NOTE 2
	-	SG Atmospheric Vlv	CB-08	PK2325 - 2328	MS ✓	NOTE 1
	-	AFW Flow Control Vlv	CB-09	FK: 2453A&B 2454A&B 2459A - 2462A	AF ✓	NOTE 1
	-	TDAFW Pump	CB-09	HS2452-1 HS2452-2	AF NP	NOTE 1
	-	MSIVs	CB-08	HS-2333A - 2336A	MS ✓	NOTE 1
	-	MSIV Bypass Vlvs	Local	HV-2333B - 23336B	MS ✓	NOTE 1
21	PRZR PORV Status Lights	-	CB-05	PCV455A PCV456	RC ✓	SQ ADD
	PRZR Sfty Vlv Status Lights	-	CB-05	ZL8010A - 8010C	RC ✓	SQ
	PRZR Spray Vlv Status Lights	-	CB-05	ZL455B &C	RC ✓	* NOT SQ. USED TO VERIFY SPRAY VALVE FAILURE DOES NOT EXIST WHICH COULD CAUSE RCS PRESSURE DECREASE. WITH RCPS OFF DUE TO LOSS OF POWER AND ALTERNATE SQ RCS PRESSURE INDICATION, ALTERNATE INDICATION EXISTS.
	PRZR Pressure	-	CB-05	PI455 - 458	RC NP	* NOT SQ. ALTERNATE SQ INDICATION OF RCS WR PRESSURE CAN BE USED TO MONITOR RCS PRESSURE.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
21 Cont'd	RCP Status Lights	-	CB-05	PCPX1-4	RC NR	* NOT SQ. INDICATION ONLY REQUIRED TO CONFIRM REACTOR COOLANT PUMPS STOPPED WHEN SPRAY VALVE FAILED OPEN. WITH LOSS OF OFFSITE POWER, RCPS WILL NOT BE RUNNING.
	-	PRZR PORV	CB-05	PCV455A PCV456	RC ✓	NOTE 1
	-	PRZR PORV Block Vlv	CB-05	8000A 8000B	RC ✓	NOTE 1
	-	PRZR Spray Vlv	CB-05	PK455B PK455C	RC NR	NOTE 1.
	-	RCP	CB-05	PCPX1-4	RC NR	NOT REQ'D DUE TO LOSS OF POWER.
NOTE	Charging Flow Vlv Status Lights	-	CB-06	FK-121	CS NOTE	** NOT SQ. INDICATION USED TO ENSURE ADEQUATE VALVE POSITION TO MAINTAIN RCP SEAL INJECTION FLOW. RCP SEAL INJECTION FLOW INDICATION AVAILABLE, <u>BUT</u> ONLY SEISMICALLY MOUNTED AND FOR PRESSURE BOUNDARY INTEGRITY.
	-	Charging Flow Vlv	CB-06	FK-121	CS NOTE	NOTE 1
22	CCP Status Lights	-	CB-06	APCH1/2	CS ✓	SQ
	SIP Status Lights	-	CB-06	APSI1/2	SI ✓	SQ
	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	XI ✓	SQ
	RCP Status Lights RCP Amps	- -	CB-05 CB-05	PCPX1-4 IIRCP1-4	RC NR RC NR	* NOT SQ. INDICATION ONLY REQUIRED TO CONFIRM REACTOR COOLANT PUMPS STOPPED WHEN SUBCOOLING NOT ADEQUATE. RCPS NOT RUNNING DUE TO LOSS OF POWER.
	-	RCP	CB-05	PCPX1-4	RC NR	NOT REQ'D DUE TO LOSS OF POWER.
23	Mn Stm Pressure	-	CB-08	PI: 514-16A 524-26A 534-36A 544-46A	MS ✓	SQ
24	SG/Secondary Radiation (Cndsr Off-gas, SG Blwdn, Mn Stmline, SG Smpl)	-	PC-11	COG-182 SGB-173 MSL178-181 SGS-164	RM NR	* NOT SQ. INDICATION USED IN CONJUNCTION WITH SG LEVEL TO IDENTIFY STEAM GENERATOR WITH TUBE RUPTURE. SG LEVEL, SAMPLING OR LOCAL RAD PROT SURVEYS CAN BE USED AS ALTERNATE INDICATIONS TO IDENTIFY SG.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
24 Cont'd	SG Level	-	CB-09	LI; 517-519 527-529 537-539 547-549 551-554	MS ✓	SQ
25	Containment Pressure	-	CB-03	PI934- 937	AM ✓	SQ
	Containment Recirc Sump Level	-	CB-04 & CB-02	LI4779A&B, LI 4781A&B	CT ✓	SQ
	Containment Radiation	-	PC-11	GRID 4	RM NR	* HIGH RANGE RADIATION ONLY SQ. USED WITH CONTAINMENT PRESSURE AND SUMP LEVEL TO IDENTIFY A LOCA. REMAINING INDICATIONS CAN BE USED INDEPENDENTLY FOR DETERMINATION OF LOCA.
	Transition to EOP-1.0A/B					

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
			EOP-1.0A/B STEP 1 THROUGH 13			
NOTE	Charging Flow Vlv Status Lights	-	CB-06	FK-121	CS	** NOT SQ. INDICATION USED TO ENSURE ADEQUATE VALVE POSITION TO MAINTAIN SEAL INJECTION FLOW. RCP SEAL INJECTION FLOW INDICATION AVAILABLE, <u>BUT</u> ONLY SEIMICALLY MOUNTED AND FOR PRESSURE BOUNDARY INTEGRITY.
NOTE	Containment Pressure	-	CB-03	PI934-937	AM ✓	SQ
	Containment Radiation	-	PC-11	RE-6290A&B	RM NR	SQ
1	CCP Status Lights	-	CB-06	APCH1/2	CS ✓	SQ
	SIP Status Lights	-	CB-06	APSI1/2	SI ✓	SQ
	RCS Subcooling	-	CB-06	TI3611-1 TI3612-1	XI ✓	SQ
	RCP Status Lights	-	CB-05	PCPX1-4	RC NR	* NOT SQ. INDICATION ONLY REQUIRED TO CONFIRM REACTOR COOLANT PUMPS STOPPED WHEN SUBCOOLING NOT ADEQUATE. WITH LOSS OF OFFSITE POWER, RCPS WILL NOT BE RUNNING.
	-	RCP	CB-05	PCPX1-4	RC NR	NOT REQ'D DUE TO LOSS OF POWER.
2	Mn Stm Pressure	-	CB-08	PI: 514-16A 524-26A 534-36A 544-46A	MS ✓	SQ
	MSIV & Bypass Vlv Status Lights	-	CB-08	HS-2333A - 2336A ZL-2333B - 2336B	MS ✓	SQ
	FW Isol Vlvs	-	CB-09	HS-2134 - 2137	FW NR	SQ
	FW Isol Byp Vlvs	-	CB-09	HS-2185 - 2188	FW ✓	SQ
	SG Blowdown Vlvs	-	CB-08	HS-2397 - 2400 HS-2397A - 2400A	SB ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
2 Cont'd	SG Sample Vlvs	-	CB-08	ZL: 2401AB - 2404AB 2401BB - 2404BB 2405AB - 2408AB	MS ✓	SQ
CAUTION	CST Level	-	CB-09	LI2478A LI2479A	AF ✓	SQ
3	SG Level - NR	-	CB-09	LI: 517-519 527-529 537-539 547-549 551-554	MS ✓	SQ
	MDAFWP Status Lights	-	CB-09	HS-2450A HS-2451A	AF ✓	SQ
	TDAFWP Stm Sply Vlv Status Lights	-	CB-09	HS2452-1 HS2452-2	AF n/a	SQ
	AFW Control Vlvs	-	CB-09	ZL: 2453A&B 2454A&B 2459A - 2462A	AF ✓	SQ
	AFW Flow	-	CB-09	FI2463A - 2466A FI2463C - 2466C	AF ✓	SQ
-		MDAFW Pump	CB-09	HS-2450A HS-2451A	AF ✓	NOTE 1
-		TDAFW Pump	CB-09	HS2452-1 HS2452-2	AF n/a	NOTE 1
-		AFW Control Vlvs	CB-09	FK: 2453A&B 2454A&B 2459A - 2462A	AF ✓	NOTE 1

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
4	SG/Secondary Radiation (Cndsr Off-gas, SG Blwdn, Mn Stmline, SG Smpl)	-	PC-11	COG-182 SGB-173 MSL-178-181 SGS-164	RM N/C	* NOT SQ. INDICATION USED TO VERIFY A COINCIDENT STEAM GENERATOR TUBE RUPTURE DOES NOT EXIST. SG LEVEL, SAMPLING OR LOCAL RAD PROT SURVEYS CAN BE USED AS ALTERNATE INDICATIONS TO IDENTIFY SG.
CAUTION	PRZR PORV Status Lights	-	CB-05	PCV455A PCV456	RC ✓	SQ
5	PRZR PORV Status Lights	-	CB-05	PCV455A PCV456	RC ✓	SQ
	PRZR PORV Block Vlv Status Lights	-	CB-05	8000A 8000B	RC ✓	* NOT SQ. INDICATION USED TO ENSURE THAT A PRESSURIZER PORV IS ALIGNED AND AVAILABLE FOR RCS PRESSURE RELIEF. PREVIOUS CONDITION WOULD BE KNOWN BY OPERATOR AND WOULD PROVIDE ASSURANCE OF PORV AVAILABILITY.
	PRZR Pressure	-	CB-05	PI455 - 458	RC NR	* NOT SQ. ALTERNATE SQ INDICATION AVAILABLE WITH RCS WR PRESSURE. INDICATION USED TO IDENTIFY IF A PORV SHOULD BE OPEN.
	-	PRZR PORV Block Vlv Power Sply	Local	MCC 1EB3-2 & 1EB4-2	RC	NOTE 1
	-	PRZR PORV Block Vlv	CB-05	8000A 8000B	RC ✓	NOTE 1
	-	PRZR PORV	CB-05	PCV455A PCV456	RC ✓	NOTE 1
6	AFW Flow	-	CB-09	FI-2463A - 2466A FI2463C - 2466C	AF ✓	SQ
	SG Level - NR	-	CB-09	LI: 517-519 527-528 537-539 547-549 551-554	MS ✓	SQ
	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	XI ✓	SQ
	RCS Pressure - Wide Range	-	CB-05	PI403 PR437 PI3616	RC ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
6 Cont'd	PRZR Level	-	CB-05	LI459A, 460A,461	RC ✓	SQ
	PRZR Spray Vlv Status Lights	-	CB-05	ZL455B&C	RC NR	* NOT SQ. USED TO VERIFY SPRAY VALVE OPEN IF NECESSARY TO MAINTAIN RCS PRESSURE. WITH RCPS OFF DUE TO LOSS OF POWER, SPRAY VALVES NOT AVAILABLE.
	-	PRZR Spray Vlv	CB-05	PK455B PK455C	RC NR	NOTE 1
7	None					
8	CS Pump Status Lights	-	CB-02	HS-4764-4767	CT ✓	SQ
	CS Pump Disch Pressure	-	CB-02	PI4774-1 PI4774-2 PI4775-1 PI4775-2	CT ✓	** NOT SQ. USED TO CONFIRM CONTAINMENT SPRAY PUMP IS RUNNING. PRESSURE USED TO CONFIRM PUMP RUNNING WHEN FLOW NOT REQ'D DUE TO NO SPRAY ACTUATION.
	Containment Pressure	-	CB-03	PI934-937	AM ✓	SQ
	DG Status Lights	-	CB-11	CS-: 1DG1(2)N 1DG1(2)E 2DG1(2)N 2DG1(2)E	EPA ✓	** NOT SQ. INDICATION USED TO DETERMINE TYPE OF START STATUS FOR DIESEL GENERATOR. EMERGENCY START REQUIRED TO MAINTAIN LOCKOUT OF NON-EMERGENCY TRIPS.
	SI/SI Sequencer Status	-	CB-07 SEQ PNL	PCIP/1.8 & 2.8	ES NR	* NOT SQ. PCIP INDICATION CONFIRMS SI RESET. SEQUENCER INDICATION CONFIRMS SEQ RESET. BOTH LOCATED IN CONTROL ROOM. IF INDICATION NOT AVAILABLE, OPERATOR WOULD CONTINUE DIRECTION WITH ASSUMPTION RESET COMPLETED AND CAN VERIFY DURING ACCOMPLISHING SUBSEQUENT STEPS.
	Containment Spray Signal	-	CB-02	ALB-2B/1.8	ES NR	* NOT SQ. ALARM INDICATION CONFIRMS CONTAINMENT SPRAY SIGNAL RESET. IF INDICATION NOT AVAILABLE, OPERATOR WOULD CONTINUE DIRECTION WITH ASSUMPTION RESET COMPLETED AND CAN VERIFY DURING ACCOMPLISHING SUBSEQUENT STEPS.
	Containment Spray Vlv Status Lights	-	CB-02	HS-: 4776&7 4772-1&2 4773-1&2 4782&3 4758&9	CT ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
8 Cont'd	-	SI Reset	CB-02	SIRA SIRB	ES ✓	NOTE 1
	-	SI Sequencer Reset	SEQ PNL	ECPRCR-01/02	ES ✓	NOTE 1
	-	Cntmt Spray Reset	CB-02	CSRA CSRB	CT ✓	NOTE 1
	-	CS Pump	CB-02	HS-4764-4767	CT ✓	NOTE 1
	-	Containment Spray Vlv	CB-02	HS-: 4776&7 4772-1&2 4773-1&2 4782&3 4758&9	CT ✓	NOTE 1
	-	Diesel Generator	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	NOTE 1
CAUTION	RCS Pressure - Narrow Range	-	CB-04	PI403A	RC NR	* NOT SQ. SQ QUALIFIED WIDE RANGE PRESSURE CAN BE USED AS ALTERNATE INDICATION.
9	RCS Pressure - Narrow Range	-	CB-04	PI403A	RC NR	* NOT SQ. SQ QUALIFIED WIDE RANGE PRESSURE CAN BE USED AS ALTERNATE INDICATION.
	DG Status Lights	-	CB-11	CS-: 1DG1(2)N 1DG1(2)E 2DG1(2)N 2DG1(2)E	EPA ✓	** NOT SQ. INDICATION USED TO DETERMINE TYPE OF START STATUS FOR DIESEL GENERATOR. EMERGENCY START REQUIRED TO MAINTAIN LOCKOUT OF NON-EMERGENCY TRIPS.
	SI/SI Sequencer Status	-	CB-07 SEQ PNL	PCIP/1.8& 2.8	ES NR	* NOT SQ. PCIP INDICATION CONFIRMS SI RESET. SEQUENCER INDICATION CONFIRMS SEQ RESET. BOTH LOCATED IN CONTROL ROOM. IF INDICATION NOT AVAILABLE, OPERATOR WOULD CONTINUE DIRECTION WITH ASSUMPTION RESET COMPLETED AND CAN VERIFY DURING ACCOMPLISHING SUBSEQUENT STEPS.
	RHR Pump Status Lights	-	CB-04	APRH-1/2	RH ✓	SQ
	RHR Auto Switchover Status Lights	-	CB-04	RWSTA RWSTB	RH NR	** NOT SQ. INDICATION CONFIRMS THAT THE AUTO SWITCHOVER FROM RWST TO RHR PUMP/CNTMT SUMP TO RHR HAS BEEN RESET.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
9 Cont'd	-	SI Reset	CB-02	8811A 8811B	EI ✓	NOTE 1
	-	RHR Auto Switchover Reset	CB-02	RWSTA RWSTB	ES	NOTE 1
	-	RHR Pump	CB-04	APRH1/2	RH ✓	NOTE 1
	-	SI Sequencer Reset	SEQ PNL	ECPRCR-01/02	ES ✓	NOTE 1
	-	Diesel Generator	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	NOTE 1
10	RCS Pressure	-	CB-05	PI403 PR437 PI3616	RC ✓	SQ
	Mn Stm Pressure	-	CB-08	PI: 514-516A 524-526A 534-536A 544-546A	MS ✓	SQ
11	AC Bus Volt	-	CB-11	V-1EA1/2 V-2EA1/2	EPA ✓	SQ
	AC Bus Sply Brkr Status Lights	-	CB-11	CS-: 1EA1-1/2 2EA1-1/2	PA NR	* NOT SQ. INDICATION USED TO IDENTIFY POWER SUPPLY TO THE SAFEGUARDS BUS. DIESEL INDICATION USED TO DETERMINE BUS STATUS AND DIESEL GENENERATOR LOAD. WHEN SAFETY RELATED LOADS ARE OPERATING, THE OPERATOR KNOWS THE BUS IS POWERED. NORMAL OPERATION HAS OPERATORS TO LOCALLY MONITOR D/G PERFORMANCE.
	DG Status Lights	-	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA NR	
	DG Megawatts	-	CB-11	W1(2)EG1/2	EPA NR	

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
11 Cont'd	Inst Air Comp Status Lights	-	CB-01	HS3451 HS3463	CI Ne	* NOT SQ. INDICATION USED WHEN ADDITIONAL LOADS ARE TO BE PLACED ON THE SAFEGUARDS FOR RECOVERY ACTIONS. IF INDICATION NOT AVAILABLE, EQUIPMENT CAN BE LOCALLY CHECKED <u>OR</u> IN SOME CASES EQUIPMENT WILL NOT BE AVAILABLE (e.g. PD PUMP, CNTMT RECIRC FANS, CRDM VENT FANS).
	PRZR Heater Status Lights	-	CB-05	PCPR, PCPR1-3	RC	
	Cntmt Recirc Fn Status Lights	-	CB-03	5405A/9A/ 13A/17A	VAC	
	CRDM Vent Fn Status Lights	-	CB-03	HS5421 HS5423	VAC	
	RMUW Pump Status Lights	-	CB-01	ZL5349A XZL5350A	DD	
	Cntrl Rm MU Sply Fn Status Lights	-	CV-03	HS5825A HS5828A	VAR	
	Cntrl Rm Exh Fn Status Lights	-	CV-03	HS5855 HS5856	VAR	
	Cntrl Rm Kit/Toil Exh Fn Status Lights	-	CV-03	HS5857 HS5858	VAR	
	PD Chrg Pump Status Lights	-	CB-06	APPD	CS	
	PDP Rm Cooler Status Lights	-	CV-01	HS5804A	VAA	
	SFPCW Pump Status Lights	-	Local	HS4829 HS4832	SF	
	SFP HX & Pmp Rm Cooler Status Lights	-	CV-03	HS5805A HS5806A	VAF ↓	
	SI/SI Sequencer Status	-	CB-07 SEQ PNL	PCIP/1.8 &2.8	ES NR	* NOT SQ. PCIP INDICATION CONFIRMS SI RESET. SEQUENCER INDICATION CONFIRMS SEQ RESET. BOTH LOCATED IN CONTROL ROOM. IF INDICATION NOT AVAILABLE, OPERATOR WOULD CONTINUE DIRECTION WITH ASSUMPTION RESET COMPLETED AND CAN VERIFY DURING ACCOMPLISHING SUBSEQUENT STEPS.
	-	AC Bus Sply Brkr	CB-11	CS-: 1EA1-1/2 2EA1-1/2	EPA ✓	NOTE 1
	-	Diesel Generator	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	NOTE 1

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
11 Cont'd	-	Inst Air Comp	CB-01	HS3451 HS3463	CI N/A	NOTE 2
	-	PRZR Heater	CB-05	PCPR, PCPR1-3	RC N/A	NOTE 2
	-	Cntmt Recirc Fn	CB-03	5405A/9A/ 13A/17A	VAC N/A	NOTE 2
	-	CRDM Vent Fn	CB-03	HS5421 HS5423	VAC N/A	NOTE 2
	-	RMUW Pump	Local	HS5349A XHS5350A	DD N/A	NOTE 1
	-	Cntrl Rm MU Sply Fn	CV-03	HS5825A HS5828A	VAR N/A	NOTE 2
	-	Cntrl Rm Exh Fn	CV-03	HS5855 HS5856	VAR N/A	NOTE 2
	-	Cntrl Kit/Toil Exh Fn	CV-03	HS5857 HS5858	VAR N/A	NOTE 1
	-	PD Chrg Pump	CB-06	APPD	CS N/A	NOTE 2
	-	PDP Rm Cooler	CV-01	HS5804A	VAA N/A	NOTE 2
	-	SFPCW Pump	Local	HS4829 HS4832	SF N/A	NOTE 1
	-	SFP HX & Pmp Fn Cooler	CV-03	HS5805A HS5806A	VAF N/A	NOTE 2
	-	SI Reset	CB-02	SIRA SIRB	ES ✓	NOTE 1
	-	SI Sequencer Reset	SEQ PNL	ECPRCR- 01/02	ES N/A	NOTE 1
12	RHR Pump Status Lights	-	CB-04	APRH-1/2	RH ✓	SQ
	RHR HX CCW Return Vlv Status Lights	-	CB-03	HS4572 HS4573	CC ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
12 Cont'd	RHR HX CCW Return Flow	-	CB-03	FI4556 FI4558	CC ✓	* NOT SQ. INDICATION USED IN CONJUNCTION WITH RHR HX CCW RETURN VALVE STATUS TO DETERMINE IF CCW AVAILABLE FOR RHR HX. WITH RHR HX VLV STATUS LIGHTS AND RHR HX TEMP, ALTERNATE INDICATION EXISTS.
	Cntmt Sump To RHR Pump Vlv Status Lights	-	CB-04	8811A 8811B	RH ✓	SQ
	RHR To CCP/SIP Vlv Status Lights	-	CB-04	8804A 8804B	RH ✓	SQ
	SI/CCP Suction Crosstie Vlv Status Lights	-	CB-02	8807A 8807B	SI ✓	SQ
	Aux/Sfgds Bldg Radiation	-	PC-11	GRID 4	TM NR	* NOT SQ. STEP PROVIDES ALTERNATE DIRECTION FOR RADIATION PROTECTION TO TAKE LOCAL RADIATION SURVEYS.
	-	Post Accident Sampling	Local	-	PS NR	NOTE 1
13	RCS Pressure - Narrow Range	-	CB-04	PI403A	RC NR	* NOT SQ. WIDE RANGE PRESSURE IS SQ AND CAN BE USED AS ALTERNATE INDICATION.
	RHR To Cold Leg Injection Flow	-	CB-04	FI618 & 619	RH ✓	SQ ADD
	Transition to EOS-1.2A/B					

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
			EOS-1.2A/B STEP 1 THROUGH 36			
CAUTION	RWST Level	-	CB-02&CB-04	LI930-933	SI ✓	SQ ✓
NOTE	Containment Pressure	-	CB-03	PI934-937	AM ✓	SQ ✓
	Containment Radiation	-	PC-11	RE- 6290A&B	RM N/R	SQ
1	DG Status Lights	-	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	MECFEB93 SHOWS SQ ~~** NOT SQ~~. HANDSWITCH INDICATION USED TO DETERMINE TYPE OF START STATUS FOR DIESEL GENERATOR. IF RUNNING, EMERGENCY START REQUIRED TO MAINTAIN LOCKOUT OF NON-EMERGENCY TRIPS.
	DG Volt/Freq	-	CB-11	V-: 1EG1(2) 2EG1(2) F-: 1EG1(2) 2EG1(2)	EPA ✓ ✓	
	-	Diesel Generator	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	NOTE 1
2	SI Status	-	CB-07	PCIP/1.8 &2.8	ES N/R	* NOT SQ. PCIP INDICATION CONFIRMS SI RESET. LOCATED IN CONTROL ROOM. IF INDICATION NOT AVAILABLE, OPERATOR WOULD CONTINUE DIRECTION WITH ASSUMPTION RESET COMPLETED AND CAN VERIFY DURING ACCOMPLISHING SUBSEQUENT STEPS.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
2 Cont'd	-	SI Reset	CB-02	SIRA SIRB	ES ✓	NOTE 1
3	SI Sequencer Status	-	SEQ PNL	SEQ PNL	ES NR	* NOT SQ. SEQUENCER INDICATION CONFIRMS SEQUENCER RESET. LOCATED IN CONTROL ROOM. IF INDICATION NOT AVAILABLE, OPERATOR WOULD CONTINUE DIRECTION WITH ASSUMPTION RESET COMPLETED AND CAN VERIFY DURING ACCOMPLISHING SUBSEQUENT STEPS.
	-	SI Sequencer Reset	SEQ PNL	ECPRCR-01/02	ES ✓	NOTE 1
4	-	Phase A Reset	CB-02	CIPARA CIPARB	ES ✓	NOTE 1
	-	Phase B Reset	CB-02	CIPBRA CIPBRB	ES ✓	NOTE 1
5	Containment Spray Signal	-	CB-02	ALB-2B/1.8	ES NR	* NOT SQ. ALARM INDICATION CONFIRMS CONTAINMENT SPRAY SIGNAL RESET. IF INDICATION NOT AVAILABLE, OPERATOR WOULD CONTINUE DIRECTION WITH ASSUMPTION RESET COMPLETED AND CAN VERIFY DURING ACCOMPLISHING SUBSEQUENT STEPS.
	-	Cntmt Spray Reset	CB-02	CSRA CSRB	CT ✓	NOTE 1
6	Inst Air Comp Status Lights	-	CB-01	HS3451 HS3463	CI NR	* NOT SQ. INDICATION USED TO CONFIRM INSTRUMENT AIR COMPRESSOR RUNNING TO SUPPLY AIR OPERATED COMPONENTS. INSTRUMENT AIR COMPRESSORS CAN BE CHECKED LOCALLY TO CONFIRM RUNNING AND ABILITY TO MAINTAIN HEADER PRESSURE. WITH SQ INDICATION OF INST AIR VLV TO CNTMT, OPERATOR CAN ASSUME INSTRUMENT AIR TO CONTAINMENT AND CAN VERIFY DURING SUBSEQUENT STEPS.
	Cntmt Inst Air Header Pressure	-	CB-01	PI3488	CI NR	
	Insr Air To Cntmt Vlv Status Lights	-	CB-01	HS3487	CI NR	SQ
	Accum Vent Cntrl Demand	-	CB-04	HC943	SI NR	* NOT SQ. INDICATION USED TO CONFIRM ACCUMULATOR/N2 SPLY HEADER VENT VALVE CLOSED PRIOR TO ALIGNING NITROGEN TO PRZR PORV ACCUMULATORS. VALVE IS NORMALLY MAINTAINED CLOSED AND OPERATOR WOULD BE AWARE OF NORMAL STATUS. OPERATOR CAN LOCALLY VERIFY NITROGEN BANK PRESSURE NOT DECREASING ABNORMALLY.
	Accum N2 Sply Vlv Status Lights		CB-04	8880	SI ✓	SQ ALOEB

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
6 Cont'd	-	Inst Air Comp	CB-01	HS3451 HS3463	CI NR	NOTE 2
	-	Inst Air To Cntmt Vlv	CB-01	HS3487	CI ✓	NOTE 1 ADDED
	-	Accum Vent Cntrlr	CB-04	HC943	SI NR	NOTE 2
	-	Accum N2 Sply Vlv	CB-04	8880	SI NR	NOTE 1 ADDED ANYWAY
7	AC Bus Volt	-	CB-11	V-1EA1/2 V-2EA1/2	EPA ✓	SQ
	AC Non-Sfgds Bus Volt	-	CB-11	V-1(2)A1-4	EPA NR	* NOT SQ. INDICATION USED TO DETERMINE IF NON-SFGDS BUSSES ARE ENERGIZED. NOT REQ'D WITH LOSS OF PWR.
	AC Bus Sply Brkr Status Lights	-	CB-11	CS-: 1EA1-1/2 2EA1-1/2	EPA ✓	* NOT SQ. INDICATION USED TO IDENTIFY POWER SUPPLY TO THE SAFEGUARDS BUS. DIESEL INDICATION USED TO DETERMINE BUS STATUS AND DIESEL GENERATOR LOAD. WHEN SAFETY RELATED LOADS ARE OPERATING, THE OPERATOR KNOWS THE BUS IS POWERED. NORMAL OPERATION HAS OPERATOR TO LOCALLY MONITOR D/G PERFORMANCE.
	DG Status Lights	-	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	
	DG Megawatts	-	CB-11	W1(2)EG1/2	EPA ✓	ADDED

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
7 Cont'd	Inst Air Comp Status Lights	-	CB-01	HS3451 HS3463	CI NP-	* NOT SQ. INDICATION USED WHEN ADDITIONAL LOADS ARE TO BE PLACED ON THE SAFEGUARDS FOR RECOVERY ACTIONS. IF INDICATION NOT AVAILABLE, EQUIPMENT CAN BE LOCALLY CHECKED <u>OR</u> IN SOME CASES EQUIPMENT WILL NOT BE AVAILABLE (e.g. PD PUMP, CNTMT RECIRC FANS, CRDM VENT FANS).
	PRZR Heater Status Lights	-	CB-05	PCPR, PCPR1-3	RC	
	Cntmt Recirc Fn Status Lights	-	CB-03	5405A/9/ 13A/17A	VAC	
	CRDM Vent Fn Status Lights	-	CB-03	HS5421 HS5423	VAC	
	RMUW Pump Status Lights	-	CB-01	ZL5349A XZL5350A	DD	
	Cntrl Rm MU Sply Fn Status Lights	-	CV-03	HS5825A HS5828A	VAR	
	Cntrl Rm Exh Fn Status Lights	-	CV-03	HS5855 HS5856	VAR	
	Cntrl Rm Kit/Toil Exh Fn Status Lights	-	CV-03	HS5857 HS5858	VAR	
	PD Chrg Pump Status Lights	-	CB-06	APPD	CS	
	PDP Rm Cooler Status Lights	-	CV-01	HS5804A	VAA	
	SFPCW Pump Status Lights	-	Local	HS4829 HS4832	SF	
	SFP HX & Pmp Rm Cooler Status Lights	-	CV-03	HS5805A HS5806A	V'r	
	-	AC Bus Sply Brkr	CB-11	CS-: 1EA1-1/2 2EA1-1/2	EPA ✓	NOTE 1
	-	Diesel Generator	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	NOTE 1

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
7 Cont'd	-	Inst Air Comp	CB-01	HS3451 HS3463	CI NR	NOTE 2
	-	PRZR Heater	CB-05	PCPR, PCPR1-3	RC	NOTE 2
	-	Cntmt Recirc Fn	CB-03	5405A/9A/ 13A/17A	VAC	NOTE 2
	-	CRDM Vent Fn	CB-03	HS5421 HS5423	VAC	NOTE 2
	-	RHUW Pump	Local	HS5349A XHS5350A	DD	NOTE 1
	-	Cntrl Rm MU Sply Fn	CV-03	HS5825A HS5828A	VAR	NOTE 2
	-	Cntrl Rm Exh Fn	CV-03	HS5855 HS5856	VAR	NOTE 2
	-	Cntrl Kit/Toil Exh Fn	CV-03	HS5857 HS5858	VAR	NOTE 1
	-	PD Chrg Pump	CB-06	APPD	CS	NOTE 2
	-	PDP Rm Cooler	CV-01	HS5804A	VAA	NOTE 2
	-	SFPCW Pump	Local	HS4829 HS4832	SF	NOTE 1
	-	SFP HX & Pmp Fn Cooler	CV-03	HS5805A HS5806A	VAF ✓	NOTE 2
CAUTION	RCS Pressure - Narrow Range	-	CB-05	PI403A	RC NL	* NOT SQ. WIDE RANGE PRESSURE IS SQ AND CAN BE USED AS ALTERNATE INDICATION.
8	RCS Pressure - Narrow Range	-	CB-05	PI403A	RC NL	* NOT SQ. WIDE RANGE PRESSURE IS SQ AND CAN BE USED AS ALTERNATE INDICATION.
	RHR Pump Status Lights	-	CB-04	APRH-1/2	RH ✓	SQ
	RHR Auto Switchover Status Lights	-	CB-04	8811A 8811B	RH ✓	MELTREBTS CIRCUITS SQ ~~** NOT SQ~~. INDICATION CONFIRMS THAT THE AUTO SWITCHOVER FROM RWST TO RHR PUMP/CNTMT SUMP TO RHR HAS BEEN RESET.
	-	RHR Pump	CB-04	APRH1/2	RH ✓	NOTE 1
	-	RHR Auto Switchover Reset	CB-02	RWSTA RWSTB	ES ✓	NOTE 1
CAUTION	CST Level	-	CB-09	LI2478A LI2479A	AF ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
9	SG Level - NR	-	CB-09	LI: 517-519 527-529 537-539 547-549 551-554	MS ✓	SQ
	AFW Flow	-	CB-09	FI-2463A - 2466A FI-2463C - 2466C	AF ✓	SQ
	AFW Control Vlvs	-	CB-09	ZL: 2453A&B 2454A&B 2459A - 2462A	AF ✓	SQ
	MDAFWP Status Lights	-	CB-09	HS-2450S HS-2451A	AF ✓	SQ
	TDAFWP Stm Sply Vlv Status Lights	-	CB-09	HS2452-1 HS2452-2	AF NR	SQ
	-	AFW Control Vlvs	CB-09	FK: 2453A&B 2454A&B 2459A - 2462A	AF ✓	NOTE 1
	-	MDAFW Pump	CB-09	HS-2450A HS-2451A	AF ✓	NOTE 1
	-	TDAFW Pump	CB-09	HS2452-1 HS2452-2	AF N/R	NOTE 1
NOTE	PRZR Pressure	-	CB-05	PI455 - 458	RC N/R	* NOT SQ. ALTERNATE SQ INDICATION OF RCS WR PRESSURE CAN BE USED TO DETERMINE RCS PRESSURE.
	PRZR Pressure Permissive Status	-	CB-07	PCIP/3.86 4.8	EI N/R	** NOT SQ. INDICATION CONFIRMS THAT LOW STEAMLINE PRESSURE SI SIGNAL HAS BEEN BLOCKED AND MSIV AUTO CLOSURE ON RATE SIGNAL INSTATED.
	-	Mn Stmline SI Block	CB-08	SLSIRBA SLSIRBB	ES ✓	NOTE 1

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
10	RCS Cold Leg Temp - WR	-	CB-05	TI412B& 423B TR413B& 433B	RC ✓	SQ
	RHR Pump Status Lights	-	CB-04	APRH-1/2	RH ✓	SQ
	RHR Valve Status Lights	-	CB-04	8701A&B 8702A&B FCV610& 611	RH ✓	SQ
	Steam Dump Vlv Status Lights	-	CB-08	ZL-: 2369A-C 2370A-J	MS NR	* NOT SQ. USED WHEN STEAM DUMPS ARE BEING USED TO CONTROL RCS COOLDOWN TO INDICATE VALVE POSITION. NOT REQUIRED IN THIS SEQUENCE BECAUSE STEAM DUMPS ARE NOT AVAILABLE WITH MSIVS SHUT AND LOSS OF OFFSITE POWER.
	SG Atmospheric Status Lights	-	CB-08	ZL2325-2328	MS ✓	SQ
	-	RHR HX Outlet Vlvs	CB-04	HC-606 & 607	RH NR	NOTE 1 MANUAL CONTROL REQ'D
	-	RHR Pump	CB-04	APRH1/2	RH ✓	NOTE 1
	-	Steam Dump Vlv	CB-08	PK-507	MS NR	NOTE 2
	-	SG Atmospheric Vlv	CB-08	PK2325 - 2328	MS ✓	NOTE 1
11	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	XI ✓	SQ
12	CCP SI Isol Vlv Status Lights	-	CB-04	HS8801A &B	CS ✓	SQ
	SIP Status Lights	-	CB-02	APSI1 APSI2	SI ✓	SQ
	RHR Pump Status Lights	-	CB-04	APRH-1/2	RH ✓	SQ
	RHR Valve Status Lights	-	CB-04	8812A&B 8809A&B FCV610 & 611	RH ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
13	PRZR Heater Status Lights	-	CB-05	PCPR, PCPR1-3	RC NR	* NOT SQ. INDICATION USED TO CONFIRM PRZR HEATERS OFF DURING RCS DEPRESSURIATION. ALTERNATE SQ INDICATION OF CURRENT ALSO AVAILABLE.
	-	PRZR Heater	CB-05	PCPR, PCPR1-3	RC NR	NOTE 2
14	PRZR Spray Vlv Status Lights	-	CB-05	ZL455B&C	RC NR	* NOT SQ. USED TO VERIFY SPRAY VALVES OPEN FOR RCS PRESSURE REDUCTION STEPS. INDICATION NOT REQUIRED WITH NO RCPS OPERATING.
	PRZR PORV Status Lights	-	CB-05	PCV455A PCV456	RC ✓	SQ
	PRZR Level	-	CB-05	LI459A, 460A,461	RC ✓	SQ
	Auxiliary Spray Vlv Status Lights	-	CB-05	8145	CS NR	SQ
	RCS Pressure - Wide Range	-	CB-05	PI403 PR437 PI3616	RC ✓	SQ
	-	PRZR Spray Vlv	CB-05	PK455B PK455C	RC NR	NOTE 1
	-	PRZR PORV	CB-05	PCV455A PCV456	RC ✓	NOTE 1
	-	Auxiliary Spray Vlv	CB-05	8145	CS NR	NOTE 1
15	RCP Status Lights	-	CB-05	PCPX1-4	RC NR	* NOT SQ. INDICATION USED TO DETERMINE IF RCP IS RUNNING. WITH LOSS OF NON-SFGDS BUSSES, OPERATOR CAN DETERMINE RCPS NOT AVAILABLE.
	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	XI ✓	SQ
	PRZR Level	-	CB-05	LI459A, 460A,461	RC ✓	SQ
	-	RCP	CB-05	PCPX1-4	RC NR	NOT REQ'D DUE TO LOSS OF POWER.
16	CCP Status Lights	-	CB-06	APCH1/2	CS ✓	SQ
	SIP Status Lights	-	CB-02	APSI1/2	SI ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
16 Cont'd	RCP Status Lights	-	CB-05	PCPX1-4	RC NR	* NOT SQ. USED TO DETERMINE THE PROPER SUBCOOLING WHICH ALLOWS REDUCTION IN ECCS PUMPS/FLOW DURING RCS COOLDOWN. WITH LOSS OF NON-SFGDS BUSSES, OPERATOR CAN DETERMINE THAT NO RCPS ARE RUNNING.
	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	XI ✓	SQ
	PRZR Level	-	CB-05	LI459A, 460A,461	RC ✓	SQ
	RCS Hot Leg Temp - WR	-	CB-05	TI413A& 423A TR413A& 433A	RC ✓	SQ
	RHR Pump Status Lights	-	CB-04	APRH1/2	RH ✓	SQ
	-	RHR Pump	CB-04	APRH1/2	RH ✓	NOTE 1
	-	CCP	CB-05	APCH1/2	CS ✓	NOTE 1
17	SIP Status Lights	-	CB-02	APSI1/2	SI ✓	SQ
	CCP Status Lights	-	CB-06	APCH1/2	CS ✓	SQ
	RCP Status Lights	-	CB-05	PCPX1-4	RC NR	* NOT SQ. USED TO DETERMINE THE PROPER SUBCOOLING WHICH ALLOWS REDUCTION IN ECCS PUMP/FLOW DURING RCS COOLDOWN. WITH LOSS OF NON-SFGDS BUSSES, OPERATOR CAN DETERMINE RCPS NOT OPERATING.
	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	XI ✓	SQ
	PRZR Level	-	CB-05	LI459A, 460A,461	RC ✓	SQ
	RCS Hot Leg Temp - WR	-	CB-05	TI413A& 423A TR413A& 433A	RC ✓	SQ
	RHR Pump Status Lights	-	CB-04	APRH1/2	RH	SQ
	-	SI Pump	CB-02	APSI1/2	SI ✓	NOTE 1
	-	RHR Pump	CB-04	APRH1/2	RH ✓	NOTE 1
18	SIP Status Lights	-	CB-02	APSI1/2	SI	SQ

EPG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
18 Cont'd	CCP Status Lights	-	CB-06	APCH1/2	CS ✓	SQ
	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	XI ✓	SQ
	PRZR Level	-	CB-05	LI459A, 460A,461	RC ✓	SQ
	RCS Hot Leg Temp - WR	-	CB-05	TI413A& 423A TR413A& 433A	RC ✓	SQ
	RHR Pump Status Lights	-	CB-04	APRH1/2	RH ✓	SQ
	-	RHR Pump	CB-04	APRH1/2	RH ✓	NOTE 1
19	CCP Valves	-	CB-04& CB-05	8110, 8111, 8511A&B, 8801A&B	CS & SI ✓	SQ
	Charging Flow Vlv Demand	-	CB-06	FK-121	CS	** NOT SQ. INDICATION USED TO CONFIRM VALVE POSITION FOR STEPS TO REALIGN CHARGING FLOW.
	CCP Status Lights	-	CB-06	APCH1/2	CS ✓	SQ
	RCP CCW Thermal Barrier Flow	-	CB-03	FI4678, 82,86&90	CC NR	** NOT SQ. USED TO ENSURE RCP SEALS/THERMAL BARRIER HAS COOLING TO ALLOW MOMENTARY LOSS OF SEAL INJECTION WHILE CCP STOPPED TO CLOSE INJECTION VALVE WHEN THE VALVE CANNOT BE CLOSED WITH THE MOTOR OPERATOR.
	RCP Seal Injection Flow	-	CB-05	FI142 - ✓ 145	CS NOTE	ADDED ** SEISMICALLY MOUNTED AND SQ FOR PRESSURE BOUNDARY INTEGRITY. USED TO CONFIRM ADEQUATE SEAL INJECTION FLOW TO RCPS. LOCAL NON-SQ INDICATION AVAILABLE.
	-	Charging Flow Vlv	CB-06	FK-121	CS NOTE	NOTE 1 ADDED
	-	CCP	CB-06	APCH1/2	CS ✓	NOTE 1
	-	CCP SI Isol Vlvs	CB-04	HS8801A &B	CS ✓	NOTE 1
	-	CCP Valves	CB-06	8810, 8811, 8511A&B	CS ✓	NOTE 1
20	Charging Line Isol Vlvs Status Lights	-	CB-06	8105& 8106	CS ✓	SQ
	Charging Flow Vlv Demand	-	CB-06	FK-121	CS NOTE	** NOT SQ. INDICATION USED TO DETERMINE VALVE POSITION TO ENSURE ADEQUATE CHARGING FLOW.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
20 Cont'd	RCP Seal Injection Flow	-	CB-05	FI142 -145	CS NOTE	** SEISMICALLY MOUNTED AND SQ FOR PRESSURE BOUNDARY INTEGRITY. USED TO CONFIRM ADEQUATE SEAL INJECTION FLOW TO RCPS. LOCAL NON-SQ INDICATION AVAILABLE.
	Charging Flow	-	CB-06	FI-121	CS NOTE	* SQ FOR PRESSURE BOUNDARY INTEGRITY. USED TO VERIFY CHARGING FLOW CAPABILITY TO MAINTAIN RCS INVENTORY. ALTERNATE SQ PRZR LEVEL INDICATION CAN BE USED TO VERIFY CHARGING FLOW IS MAINTAINING RCS INVENTORY.
	-	Charging Flow Vlv	CB-06	FK-121	CS NOTE	NOTE 1
	-	RCP Seal Wtr Press Ctrl Vlv	CB-06	HC-182	CS NOTE	NOTE 1 MANUAL
	-	Charging Line Isol Vlv	CB-06	8105& 8106	CS ✓	NOTE 1
21	RHR Pump Status Lights	-	CB-04	APRH1/2	RH ✓	SQ
	RHR Valve Status Lights	-	CB-04	8701A&B 8702A&B FCV610& 611	RH ✓	SQ
22	RCP Status Lights	-	CB-05	PCPX1-4	RC NR	* NOT SQ. INDICATION USED TO DETERMINE IF RCP IS RUNNING. WITH LOSS OF NON-SFGDS BUSSES, OPERATOR CAN DETERMINE THAT RCPS ARE NOT RUNNING.
	RCP Amps	-	CB-05	IIRCP1-4	RC NR	
	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	RC ✓	SQ
	Mn Stm Pressure	-	CB-08	PI: 514-516A 524-526A 534-536A 544-546A	MS ✓	SQ
	RCS Hot Leg Temp - WR	-	CB-05	TI413A& 423A TR413A& 433A	RC ✓	SQ
	Core Exit TCs	-	CB-05	TI3611-2 TI3612-2	XI ✓	SQ
	RCS Cold Leg Temp - WR	-	CB-05	TI412B& 423B TR413B& 433B	RC ✓	SQ NOTE 6

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
22 Cont'd	Steam Dump Vlv Status Lights	-	CB-08	ZL-: 2369A-C 2370A-J	MS NA	* NOT SQ. USED WHEN STEAM DUMPS ARE BEING USED TO CONTROL RCS TEMPERATURE AND COOLDOWNN. NOT REQUIRED IN THIS SEQUENCE BECAUSE STEAM DUMPS ARE NOT AVAILABLE WITH MSIVS SHUT AND LOSS OF OFFSITE POWER.
	SG Atmospheric Status Lights	-	CB-08	ZL2325-2328	MS ✓	SQ
	-	RCP	CB-05	PCPX1-4	RC NA	NOT REQ'D DUE TO LOSS OF POWER.
	-	Steam Dump Vlv	CB-08	PK-507	MS NA	NOTE 2
	-	SG Atmospheric Vlv	CB-08	PK2325 - 2328	MS ✓	NOTE 1
23	PRZR Spray Vlv Status Lights	-	CB-05	ZL455B&C	RC NA	* NOT SQ. USED TO VERIFY SPRAY VALVES OPEN FOR RCS PRESSURE REDUCTION. INDICATION NOT REQUIRED WITH NO RCPS NOT OPERATING.
	PRZR Heater Status Lights	-	CB-05	PCPR, PCPR1-3	RC NA	* NOT SQ. ALTERNATE SQ INDICATION AVAILABLE WITH PRESSURIZER HEATER CURRENT.
	PRZR PORV Status Lights	-	CB-05	PCV455A PCV456	RC ✓	SQ
	Auxiliary Spray Vlv Status Lights	-	CB-05	8145	CS NA	SQ
	PRZR Liquid and Vapor Temp	-	CB-05	TI453 TI454	RC NA	* NOT SQ. USED TO MONITOR PRESSURIZER CONDITIONS TO ENSURE A STEAM BUBBLE IS MAINTAINED. ALTERNATE SQ INDICATION CAN BE USED TO DERIVE THAT A STEAM BUBBLE EXISTS (e.g. PRZR LVL, RCS PRESSURE).
	PRZR Level	-	CB-05	LI459A, 460A,461	RC ✓	SQ
	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	XI ✓	SQ
	-	PRZR Spray Vlv	CB-05	PK455B PK456C	RC ✓	NOTE 1
	-	PRZR PORV	CB-05	PCV455A PCV456	RC ✓	NOTE 1
	-	Auxiliary Spray Vlv	CB-05	8145	RC NA	NOTE 1
	-	PRZR Heater	CB-05	PCPR, PCPR1-3	RC NA	NOTE 2

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
24	BA Pump Status Lights	-	CB-06	APBA1&2	CS NR	** NOT SQ. BORIC ACID SYSTEM REQUIRED TO ADD NEGATIVE REACTIVITY TO THE CORE TO MAINTAIN ADEQUATE SHUTDOWN MARGIN. NUCLEAR INSTRUMENTATION CAN BE USED TO CONFIRM IMMEDIATE SHUTDOWN CONDITIONS; HOWEVER, ONCE XENON DECAYS, BORON MAY BE REQUIRED TO MAINTAIN SHUTDOWN MARGIN.
	Emer Borate Vlv Status Lights	-	CB-06	8104	CS NR	
	Boric Acid Vlv Status Lights	-	CB-06	FCV110A	CS NR	
	RCS MU Ctrl Status Lights	-	CB-06	MU	CS NR	
	RCS MU Totalizer	-	CB-06	FY110B, FY111B	CS NR	
	Emer Boration Flow	-	CB-06	FI-183A	CS NR	
	-	BA Pump	CB-06	APBA1&2	CS NR	NOTE 1
	-	Emer Borate Vlv	CB-06	8104	CS NR	NOTE 1
	-	Boric Acid Vlv	CB-06	FCV110A	CS NR	NOTE 1
	-	RCS MU Ctrlr	CB-06	MU	CS NR	NOTE 3
	-	RCS MU Totalizer	CB-06	FY110B, FY111B	CS NR	NOTE 3
	-	Primary Sampling	Local	-	PS NR	NOTE 2
25	RCS Subcooling	-	CB-06	TI3611-1 TI3612-1	XI ✓	SQ
	PRZR Level	-	CB-05	LI459A, 460A,461	RC ✓	SQ
	CCP Status Lights	-	CB-06	APCH1/2	CS ✓	SQ
	SIP Status Lights	-	CB-02	APSI1/2	SI ✓	SQ
	RHR Pump Status Lights	-	CB-04	APRH1/2	RH ✓	SQ
	-	CCP	CB-05	APCH1/2	CS ✓	NOTE 1
	-	SI Pump	CB-02	APSI1/2	SI ✓	NOTE 1
	-	RHR Pump	CB-04	APRH1/2	RH	NOTE 1
26	RCS Subcooling	-	CB-05	TI3611-1 TI3612-1	XI ✓	SQ
	PRZR Level	-	CB-05	LI459A, 460A,461	RC ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
26 Cont'd	RCS Hot Leg Temp - WR	-	CB-05	TI413A& 423A TR413A& 433A	RC ✓	SQ
	Accum Inj Vlv Status Lights	-	CB-04	8808A-D	SI NL	SQ
	Accum N2 Sply Vlv Status Lights	-	CB-04	8880	SI NL	SQ
	Accum N2 Vent Vlv Status Lights	-	CB-04	8875A-D	SI NL	** NOT SQ. INDICATION USED TO CONFIRM ALIGNMENT FOR ACCUMULATOR VENTING IF ISOLATION VALVES CAN NOT BE CLOSED. ONLY OTHER INDICATION TO VERIFY TASK IS BEING ACCOMPLISHED IS ACCUMULATOR PRESSURE WHICH IS IDENTIFIED AS "SQ FOR PRESSURE BOUNDARY INTEGRITY".
	Accum Vent Cntrl Demand	-	CB-04	HC943	SI NL	
	Accumulator Pressure	-	CB-04	PI-960 - 967	SI NL	** SQ FOR PRESSURE BOUNDARY INTEGRITY. IF AN ISOLATION VALVE CAN NOT BE CLOSED, ACCUMULATOR PRESSURE IS THE ONLY INDICATION THAT THE MOTIVE FORCE HAS BEEN REMOVED <u>AND</u> THE ACCUMULATOR WILL NOT DUMP.
	-	Accum Inj Vlv	CB-04	8808A-D	SI NL	NOTE 1
	-	Accum N2 Sply Vlv	CB-04	8880	SI NL	NOTE 1
	-	Accum N2 Vent Vlv	CB-04	8875A-D	SI NL	NOTE 1
	-	Accum Vent Cntrlr	CB-04	HC943	SI NL	NOTE 2
	-	Accum Inj Vlv Power Supply	Local	MCC 1EB3-2 & 1EB4-2	SI NL	NOTE 1
27	DG Status Lights	-	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA NL	* NOT SQ. INDICATION USED TO IDENTIFY POWER SUPPLY TO THE SAFEGUARDS BUS. DIESEL INDICATION USED TO DETERMINE BUS STATUS AND DIESEL GENERATOR LOAD. WHEN SAFETY RELATED LOADS ARE OPERATING, THE OPERATOR KNOWS THE BUS IS POWERED. NORMAL OPERATION HAS OPERATOR TO LOCALLY MONITOR D/G PERFORMANCE.
	DG Megawatts	-	CB-11	W1(2)EG1/2	EPA ✓	
	AC Bus Sply Brkr Status Lights	-	CB-11	CS-: 1EA1/2-1/2 2EA1-1/2 1/2	EPA ✓	
	AC Bus Volt	-	CB-11	V-1EA1/2 V-2EA1/2	EPA ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
27 Cont'd	-	Diesel Generator	CB-11	CS-: 1DG1(2)E 1DG1(2)N 2DG1(2)E 2DG1(2)N	EPA ✓	NOTE 1
	-	AC Bus Sply Brkr	CB-11	CS-: 1EA1/2-1/2 2EA1/2-1/2	EPA ✓	NOTE 1
28	RCP CCW Return Flow	-	CB-03	FI4678, 82,86,90	CC NR	* NOT SQ. INDICATION USED TO VERIFY RCP COOLING NORMAL. WITH SQ VALVE INDICATION, OPERATOR CAN DETERMINE THAT FLOW SHOULD BE ALIGNED EVEN THOUGH THE AMOUNT CAN NOT BE VERFIED.
	RCP CCW Return Temp	-	CB-03	TI4691-4694	CC NR	
	RCP Seal Injection Flow	-	CB-05	FI142 - 145	CS NR	** SEISMICALLY MOUNTED AND SQ FOR PRESSURE BOUNDARY INTEGRITY. FLOW RESTRICTIONS FOR RCP SEALS (8 - 13 GPM) PREVENTS OPERATOR FROM POSITIVELY VERIFYING CONDITION.
	RCP CCW TB Return Vlv Status Lights	-	CB-03	HS4691- 4694	CC NR	* NOT SQ. USED TO CONFIRM ALIGNMENT OF CCW TO THE REACTOR COOLANT PUMPS. THE POWER SUPPLY TO THESE VALVES LOAD SHED ON A SAFETY INJECTION. IF VALVES WERE OPEN PRIOR TO EVENT, OPERATOR CAN ASSUME STILL OPEN.
	RCP CCW Sply & Ret Vlv Status Lights	-	CB-03	HS4696, 4699, 4700&01, 4708&09	CC NR	SQ
	CCW Non-Sfgds Loop Vlv Status Lights	-	CB-03	HS4524- 4527	CC NR	SQ
	RCP Seal Water Inj Vlv Status Lights	-	CB-05	8351A - 8351D	CS ✓	SQ ADDED
	CCW Pump Status Lights	-	CB-03	HS-4518A HS-4519A	CC ✓	SQ
	RCP Seal Water Out Temp	-	Cmptr	T0181A - T0184A	RC NR	** NOT SQ. INDICATION ON THE PLANT COMPUTER USED IN ALIGNMENT OF SEAL INJECTION FLOW TO THE REACTOR COOLANT PUMPS.
	RCP Low Seal Water Brg Temp	-	Cmptr	T0417A,37A, 57A,77A	RC NR	
	RCP Therm Barr Isoletion Indication		CB-03	ALB- 3B/2.11, 4.11	EI NR	** NOT SQ. INDICATION USED TO DETERMINE IF A THERMAL BARRIER HIGH TEMPERATURE OR FLOW CONDITION EXISTS THAT CLOSES THE RCP THERM BARR ISOLATION VALVES.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
28 Cont'd	-	RCP Seal Inj Isol Throttle Vlvs	Local	CS-8369A,B,C,D	CS	NOTE 1
	-	RCP CCW Therm Barr Ret Vlvs	CB-03	HS4691 - 4694	CC NR	NOTE 1
	-	RCP CCW Sply & Ret Vlvs	CB-03 & Local	HS4694, 4699, 4700&01, 4708&09	CC NR	NOTE 1
	-	CCW Non-Sfgds Loop Vlvs	CB-03	HS4524 - 4527	CC NR	NOTE 1
	-	RCP Seal Water Inj Vlvs	CB-05	8351A - 8351D	DS	NOTE 1 ADDED
	-	CCW Pump	CB-03	HS 4528A HS4519A	CC ✓	NOTE 1
29	Seal Water HX CCW Return Flow	-	CB-03	ALB-3B/1.16	EI NR	* NOT SQ. INDICATION USED TO CONFIRM CCW AVAILABLE TO SEAL WATER HX PRIOR TO ALIGNING RCP SEAL WATER RETURN. LOCAL TEMPERATURE INDICATION AND VALVE ALIGNMENT CAN BE USED TO DETERMINE CCW COOLING CAPABILITY
	CCW Non-Sfgds Loop Viv Status Lights	-	CB-03	HS4523-4527	CC NR	SQ
	CCW Sfgds Loop X-Tie Vlv Status Lights	-	CB-03	HS4512-4515	CC NR	SQ
	Seal Water Return Isol Vlv Status Lights	-	CB-05	8100&8112	CC ✓	SQ
	Excess Ltdn Divert Vlv Status Lights	-	CB-06	8143	CS NR	** NOT SQ. INDICATION USED TO DETERMINE THAT RCP SEAL RETURN IS ALIGNED TO THE VCT. VALVE LOCATED INSIDE CONTAINMENT; THEREFORE, LOCAL CHECK NOT AVAILABLE. ALTERNATE NON-SQ INDICATION AVAILABLE, VCT LEVEL & PRESSURE OR RCDT LEVEL & PRESSURE.
	-	Seal Water Return Isol Vlv	CB-05	8100&8112	CS ✓	NOTE 1
	-	Excess Ltdn Divert Vlv	CB-06	8143	CS NR	NOTE 1
30	Nuclear Instrumentation	-	CB-07	NI-50A-2 & 50B-2	NI ✓	SQ

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
30 Cont'd	Nuclear Instrumentation	-	CB-07	NI31B,32B, 35B&36B	NI	NOT SQ. INTERMEDIATE AND SOURCE RANGE USED TO DETERMINE IF SOURCE RANGE DETECTORS ENERGIZED. ADEQUATE INDICATION AVAILABLE ON THE SQ NI INDICATION TO MONITOR CORE SHUTDOWN.
31	None					
32	RCP #1 Seal Diff Pressure	-	CB-05	PI150A-153A	RC NR	* NOT SQ. INDICATION USED TO DETERMINE IF MINIMUM CONDITIONS FOR RCP OPERATION ARE SATISFIED. WITH LOSS OF NON-SFGDS BUSSES, RCPS ARE NOT RUNNING.
	RCP Seal Leakoff Flow	-	CB-05	FR154-157	RC NR	
	RCP Status Lights	-	CB-05	PCPX1-4	RC NR	* NOT SQ. INDICATION USED TO DETERMINE IF RCPS ARE OFF. WITH LOSS OF NON-SFGDS BUSSES, RCPS ARE NOT RUNNING.
	-	RCP	CB-05	PCPX1-4	RC NR	NOT REQ'D WITH LOSS OF POWER.
33	RCS Hot Leg Temp - WR	-	CB-05	TI413A-423A TR413A-433A	RC ✓	SQ
	RCS Pressure - Wide Range	-	CB-05	PI403, PR437, PI3616	RC ✓	SQ
	RHR Pump Status Lights	-	CB-04	APRH-1/2	RH ✓	SQ
	RHR Valve Status Lights	-	CB-04	8701A&B 8702A&B FCV610&611	RH ✓	SQ
	-	RHR Pump	CB-04	APRH1/2	RH ✓	NOTE 1
	-	RHR Valves	CB-04	8701A&B 8702A&B FCV610&611 HC606&607	RH ✓	NOTE 1
34	Containment Hydrogen Concentration	-	H2 ANAL MICRO-PROCESS	AE-5506A - D	AM NR	SQ
	-	Hydrogen Micro-Processor	H2 ANAL MICRO-PROCESS	AE-5506A - D	AM NR	NOTE 2
	-	Containment PASS Sampling	Local	-	PS NR	NOTE 1

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
35	RCS Hot Leg Temp - WR	-	CB-05	TI413A&423A TR413A&433A	RC ✓	SQ
36	RCS Hot Leg Temp - WR **Maintain Cold Shutdown Conditions**	-	CB-05	TI413A&423A TR413A&433A	RC ✓	SQ

REACTOR TRIP
WITH A LOSS OF OFFSITE POWER AND SUBSEQUENT NATURAL CIRCULATION COOLDOWN FOLLOWING A SEISMIC EVENT

EOP-0.0A/B, Reactor Trip or Safety Injection (Step 1 through 4)
EOS-0.1A/B, Reactor Trip Response (Step 1 through 13)
EOS-0.2A/B, Natural Circulation Cooldown (Step 1 through 22)

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
EOP-0.0A/B STEP 1 THROUGH 4						
1 - 4	Same as indications evaluated for Scenario 1	Same as controls evaluated for Scenario 1				
	Transition to EOS-0.1A/B then EOS-0.2A/B.					

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
EOS-0.1A/B STEP 1 THROUGH 13 EOS-0.2A/B STEP 1 THROUGH 22						
	Indications evaluated for Scenario 1. Additional indications included below.	Controls evaluated for Scenario 1. Additional controls included below.				
	Main FW Pump Stop Valve Status Lights	-	CB-08	ZL2111A&B ZL2112A&B	FW	* NOT SQ. INDICATION USED WHEN TRIPPING MAIN FEEDWATER PUMPS DUE TO EXCESSIVE RCS COOLDOWN. STEP DIRECTION INCLUDES CLOSING MSIVS AS OPTION; THEREFORE, SINCE MSIVS ARE SQ, ALTERNATE CONTROLS EXIST.
	Main FW Pump Trip Status Lights	-	CB-08	HS-2111C HS-2112C	FW	
	-	Main FW Pump Trip	CB-08	HS-2111C HS-2112C	FW	NOTE 2
	Main FW Pump Stop Valve Status Lights	-	CB-08	ZL2111A&B ZL2112A&B	FW	* NOT SQ. INDICATION USED WHEN ALIGNING MAIN FEEDWATER TO THE SGS DUE TO A LOSS OF ALL AUXILIARY FEEDWATER. THIS DIRECTION IS A CONTINGENCY AND IS NOT THE NORMAL OR EXPECTED DIRECTION; THEREFORE, THE NORMAL AUXILIARY FEEDWATER INDICATION, WHICH IS SQ IS EXPECTED TO BE AVAILABLE.
	Main FW Pump Speed	-	CB-08	SI-2111F SI-2112F	FW	
	Main FW Pump Potentiometer	-	CB-08	SC-2111B SC-2112B	FW	
	Main FW Pump Suction Flow	-	CB-08	FI-2289 FI-2290	FW	
	FW Isolation Reset	-	CB-09	ALB-8A/1.13	EI	
	Main FW Pump Discharge Pressure	-	CB-08	PI2100&08	FW	
	-	Main FW Pump Reset	CB-08	HS-2111D HS-2112D	FW	NOTE 2
	-	Main FW Isolation Reset	CB-09	FWIRA FWIRB	FW	NOTE 2
	-	Main FW Pump Potentiometer	CB-08	SC-2111B SC-2112B	FW	NOTE 2
	-	Reactor Trip Breaker	CB-07	RTC	EC ✓	NOTE 1
	-	FW Preheater Bypass Valve	Local	FV-2193-06	FW	NOTE 1
	-	FW Preheater Bypass Valve Isol Valve	Local	FW-0203-06	FW	NOTE 1

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
Page 2 Cont'd	-	FW Control Valve	Local	FCV-510, 520, 530, 540	FW	NOTE 1
	Charging Flow	-	CB-06	FI-121A	CS	** SQ FOR PRESSURE BOUNDARY INTEGRITY. INDICATION USED TO MONITOR CHARGING FLOW TO MAINTAIN PRZR LEVEL DURING RECOVERY ACTIONS.
	Letdown Flow	-	CB-06	FI-132	CS	
	PD Pump Status Lights	-	CB-06	APPD	CS	** NOT SQ. INDICATION USED FOR RESTORATION OF LETDOWN FLOW IF NORMAL LETDOWN FLOW IS ISOLATED IN RESPONSE TO THE EVENT.
	PD Pump Speed Controller	-	CB-06	SK-459A	CS	
	Letdown Press Cntrlr Status Lights	-	CB-06	PK-131	CS	
	Letdown Temp Cntrlr Status Lights	-	CB-06	TK-130	CS	
	Letdown Pressure	-	CB-06	PI-131	CS	
	Letdown Temperature	-	CB-06	TI-130	CS	
	-	PD Pump Speed Control	CB-06	SK-459A	CS	NOTE 1
	-	Letdown Pressure Control	CB-06	PK-131	CS	NOTE 1
	-	Letdown Temperature Control	CB-06	TK-130	CS	NOTE 1
	480 Volt Bus Status Lights	-	CB-11	EB1 - 4	EPB	* MCB INDICATION NOT SQ. SQ INDICATION AVAILABLE AT SWITCHGEAR.
	Ventilation Chiller Status Lights	-	Local	CPX-CHCICE-01 - 04	CH-MS	* NOT SQ. INDICATION USED TO DETERMINE IF COOLING IS AVAILABLE TO VENTILATION FAN UNITS (e.g. CNTMT FN CLRS, CRDM VNT FNS). ONLY INDICATION IS LOCAL. IF THE CHILLER IS AVAILABLE, THE OPERATOR CAN VERIFY STATUS LOCALLY.
	-	480 Bus Breakers	CB-11	CS-: EB1-1, EB2-1, EB3-1, EB4-1, BTEB13, BTEB24	EPB	NOTE 1
	-	Ventilation Chillers	Local	CPX-CHCICE-01 - 04	CH-MS	NOTE 2
	Steam Dump Pressure Cntrlr Status Lights	-	CB-08	PK-507	MS	* NOT SQ. INDICATION USED FOR PLACING STEAM DUMPS IN PRESSURE MODE FOR COOLDOWN. WITH LOSS OF OFFSITE POWER, STEAM DUMPS NOT AVAILABLE. SG ATMOSPHERICS SQ.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
Page 3 Cont'd	-	Steam Dump Mode Selector Switch	CB-08	43/SD	MS	NOTE 2
	-	Steam Dump Pressure Cntrlr	CB-08	PK-507	MS	NOTE 2
	RCP Oil Lift Pump Status Lights	-	CB-05	PCPX1-4-LP	RC	NOT SQ. INDICATION USED TO ATTEMPT RESTART OF RCP. WITH LOSS OF OFFSITE POWER, RCPS WILL NOT BE AVAILABLE; THEREFORE, INDICATION NOT REQUIRED TO SUPPORT PROCEDURE DIRECTION SINCE STEPS TO ACCOMPLISH NATURAL CIRCULATION WILL BE PERFORMED.
	RCS Flow	-	CB-05	FI-: 414-416 424-426 434-436 444-446	RC	
	VCT Temperature	-	CB-06	TI-116	CS	
	RWST Temperature	-	CB-02	TI-4793	CT	
	RCP Motor Bearing Temperature	-	Cmptr	T0413A-16A T0433A-36A T0453A-56A T0473A-76A	RC	
	RCP Motor Winding Temperature	-	Cmptr	T0412A,32A, 52A,72A	RC	
	Steam Generator Temperature	-	CB-09	TI2177A-80A	FW	
	RCP Oil Reservoir Alarms	-	CB-05	ALB-5A/1.4-4.4, 1.5-4.5	EI	
	RCP Seal Leakoff Flow	-	CB-05	FR154-157	RC	
	RCP Seal Water Standpipe Alarms	-	CB-05	ALB-5A/3.1,4.1	RC	
	-	RCP Oil Lift Pump	CB-05	PCPX1-4-LP	RC	NOTE 2
	-	RCP Overcurrent Trip Selector Control	Local	1A1/2,1A2/2 1A3/8,1A4/8 2A1/8,2A2/8 2A3/2,2A4/2	EPA	NOTE 2
	NR-45 NI Recorder	-	CB-07	NR-45	NI	* NOT SQ. INDICATION USED TO MONITOR SOURCE RANGE INSTRUMENTATION DURING REACTOR POWER DECAY. WITH REDUNDANT INDICATION THAT IS SQ, NR-45 IS NOT REQUIRED TO PERFORM THIS TASK.
	CRDM Vent Fan Status Lights	-	CB-03	HS-5421 HS-5423	VAC	* NOT SQ. INDICATION USED TO CONFIRM THAT ADDITIONAL REACTOR VESSEL HEAD COOLING IS AVAILABLE DURING NATURAL CIRCULATION COOLDOWN. ALTERNATE STEP DIRECTION PROVIDED IN THE EVENT CRDM VENT FANS ARE NOT AVAILABLE.

ERG STEP	INDICATION	CONTROL	LOCATION	TAG	SYSTEM	COMMENTS
Page 4 Cont'd	-	CRDM Vent Fan	CB-03	HS-5421 HS-5423	VAC	NOTE 2
	RVLIS	-	CB-05	LI-3613A-1/8 LI-3613B-1/8	AM	SQ
	-	Low Temperature Overpressure Protection System	-	-	RC	NOTE 2
	-	SI Pump Power Supply	Local	EA1 & 2	EPA	NOTE 1
	-	CCP Pump Power Supply	Local	EA1 & 2	EPA	NOTE 1

ERGCRDB INSTRUMENTS

TAG	NOUN NAME	SYSTEM	CAT
1-FI-0142	RCP 4 SEAL WTR INJ FLO	CS	N
1-FI-0618	RHR TO CL 1 & 2 INJ FLO	RH	N
1-FI-0917	CCP SI FLO	CS	N
1-FI-0918	SIP 1 DISCH FLO	SI	N
1-FI-2463A	SG 1 AFW FLO	AF	I
1-FI-4258A	SSWP 1 DISCH FLO	SW	I
1-FI-4536A	CCW HX 1 OUT FLO	CC	I
1-FI-4556	RHR HX 1 CCW RET FLO	CC	I
1-FI-4772-1	CSP 1 DISCH FLO	CT	I
1-FK-0121	CCP CHRG FLO CTRL	CS	N
1-FK-2453A	MD AFWP 1 SG 1 FLO CTRL	AF	I
1-HS-2162	SG 1 FW BYP & CTRL VLV	FW	I
1-HS-2185	FWIBV 1	FW	I
1-HS-2193	FWPBV 1	FW	I
1-HS-2333A	MSIV 1	MS	I
1-HS-2333B	MAIN STM LOOP 1 BYPASS ISOLATION VLV	MS	I
1-HS-2397	SG 1 BLDN ISOL VLV	SB	I
1-HS-2450A	MD AFWP 1	AF	I
1-HS-2491	AFWIV 1	AF	I
1-HS-4250A	SSWP 1	SW	I
1-HS-4393	DG 1 CLR SSW RET VLV	SW	I
1-HS-4518A	CCWP 1	CC	I
1-HS-4572	RHR HX 1 CCW RET VLV	CC	I
1-HS-5421	CRDM VENT FN 1	VAC	I
1-LI-0459A	PRZR LVL CHAN I	RC	I
1-LI-0518	SG 1 LVL (NR) CHAN III	MS	I
1-LI-0551	SG 1 LVL (NR) CHAN I	MS	I
1-LI-0930	RWST LVL CHAN I	SI	I
1-LI-2478A	CST LVL	AF	I
1-LI-4779A	CNTMT RECIRC SMP LVL	CT	I
1-MLB-1A-1	MONITOR LIGHT BOX	EI	I
1-MLB-1A-2	MONITOR LIGHT BOX	EI	I
1-MLB-45A	MONITOR LIGHT BOX	EI	I
1-MLB-4A-1	MONITOR LIGHT BOX	EI	I
1-MLB-4A-2	MONITOR LIGHT BOX	EI	I
1-MLB-4A-3	MONITOR LIGHT BOX	CC	I
1-MLB-9	MONTIOR LIGHT BOX	EI	I
1-NI-0050A-2	NEUTRON FLUX SOURCE RANGE	NI	I
1-PI-0120A	CHRG HDR PRESS	CS	N
1-PI-0514A	MSL 1 PRESS CHAN I	MS	I
1-PI-0614	RHRP 1 DISCH PRESS	RH	N
1-PI-0919	SIP 1 DISCH PRESS	SI	N
1-PI-0935	CNTMT PRESS (IR) CHAN III	AM	I
1-PI-0937	CNTMT PRESS (IR) CHAN I	AM	I
1-PI-2453A	MD AFWP 1 DISCH PRESS	AF	I
1-PI-3616	RCS PRESS (WR)	RC	I
1-PI-4252A	SSWP 1 DISCH PRESS	SW	I
1-PI-4520	CCWP 1 DISCH PRESS	CC	I
1-PK-2325	SG 1 ATMOS RLF VLV CTRL	MS	I
1-RIC-6290A	CNTMT RAD LVL HI RNG	RM	I

ERGCRDB INSTRUMENTS

TAG	NOUN NAME	SYSTEM	CAT
1-TI-0413A	RCS HL 1-01 TRAIN A WIDE RANGE TEMP IND 0413A	XI	I
1-TI-3611-1	U1 RCS SAT MARGIN TEMP IND 3611-1	XI	I
1-ZL-0455A	PRESSURIZER POWER OP RELIEF VALVE POSITION INDICATING LIGHT	RC	I
1-ZL-0459	CVCS FROM RCS LETDOWN TO REGENERATIVE HEAT EXCHANGER INDICATING LIGHT	CS	I
1-ZL-0610	RHRP 1-01 MINIFLO VLV INDICATING LIGHT	RH	I
1-ZL-0610	RHRP 1-01 MINIFLO VLV INDICATING LIGHT	RH	I
1-ZL-2134	FW TO SG 1 PISTON OPER ISOLATION VALVE 1-HS-2134 INDICATING LIGHT	FW	I
1-ZL-2162	FW TO SG 1 CONTR VLV BY-PASS VLV ONHS-2162	FW	I
1-ZL-2185	FW LOOP 1 TO SG 1 MAIN FW NOZZLE ISO BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2193	FW LOOP 1 TO SG 1 AUX FW NOZZLE PURGE BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2325	LOOP 1 MAIN STEAM POWER RELIEF VLV PRESSURE INDICATING LIGHT	PC	I
1-ZL-2333B	MAIN STM LOOP 1 BYPASS ISOL VLV ON HS-2333-B INDICATING LIGHT	MS	I
1-ZL-2401AB	SG 1 DRUM SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2401BB	SG 1 BLDN SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2450A	AF PUMP CP1-AFAPMD-01 CTRL CIRCUIT INDICATING LIGHT	AF	I
1-ZL-2453A	MOT DRVN AFW PMP 01 DISCH TO SG 1 CONTR VLV	AF	I
1-ZL-2491A	STM GEN LOOP #1 ISOL VLV INDICATING LIGHT ON HS-2491	AF	I
1-ZL-2491A	STM GEN LOOP #1 ISOL VLV INDICATING LIGHT ON HS-2491	AF	I
1-ZL-4250A	SSW PMP 01 REMOTE CONTROL SWITCH IND LIGHT	SW	I
1-ZL-4518A	CCW PUMP 01 CONTROL SWITCH AND LIGHT	CC	I
1-ZL-4524	CCW HX TO NON-SFGD LOOP RET HDR ISOL VLV INDIC LT ON HS-4524	CC	I
1-ZL-4526	CCW HX TO NON-SFGD LOOP ISOL VLV INDIC LT ON HS-4526	CC	I

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-4572	CCW RHR HX 01 OUT MO CONTR VLV INDICATING LIGHT ON HS-4537	CC	I
1-ZL-4764A	CT PUMP CP1-CTAPCS-01 INDICATING LIGHT	CT	I
1-ZL-4776	CS HX 1 OUT VLV ON IND LITE	CT	I
1-ZL-8000A	RC PRESSURIZER RELIEF ISOL VLV INDICATING LIGHT	RC	I
1-ZL-8010A	PRESSURIZER SAFETY RELIEF DISCHARGE TEMP INDICATING LIGHT CB-05	RC	I
1-ZL-8106	CVCS CHRG PUMPS TO RCS ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8110	CVCS CHRG PUMP MINIFLOW ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8112	RCP SEAL WATER RET LINE ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8149A	CVCS LTDN ORIFICE ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8351A	CVCS SEAL WTR CHRG TO SEAL WTR INJ ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8511A	CVCS CHRG PUMP 01 MINIFLOW ISOL BYPASS VLV INDICATING LIGHT	CS	I
1-ZL-8701A	CL/OPEN IND LIGHTS - RHR LOOP 1 INLET ISOL VLV	RH	I
1-ZL-8716A	RHRP 1-01 XTIE VLV INDICATING LIGHT	RH	I
1-ZL-8801A	DISCH OF CVCS CHRG PUMP TO RCS COLD LEG INJ ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8804A	RHR PUMPS TO CHRG PUMPS AND SIS PUMP 01 INDICATING LIGHT	CS	I
1-ZL-8807A	SI PUMPS TO CHRG PUMPS SUCT HDR CROSS CONN VLV INDICATING LIGHT	SI	I
1-ZL-8809A	RHRS PUMP 01 TO COLD LEG ISOL VLV INDICATING LIGHT	RH	I
1-ZL-8811A	RHR PUMP 01 SUMP CTRL VLV INDICATING LIGHT	RH	I
1-ZL-8811A	RHR PUMP 01 SUMP CTRL VLV INDICATING LIGHT	RH	I
1-ZL-8812A	RHR PUMP 01 TO RWST ISOL VLV INDICATING LIGHT	RH	I
1-ZL-8821A	SI PUMP 01 CROSS-CONNECT VLV INDIC LT	SI	I
1-ZL-8835	SI PUMPS TO RCS CTRL VLV INDIC LTT	SI	I
1-ZL-8880	SIS ACCUM N2 GAS SUPPLY ISOL VLV INDIC LT	SI	I
1-ZL-APCH1	INDICATING LIGHT - STARTS CENTRIFUGAL CHRG PP 01	CS	I

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-APRH1	STOP/AUTO/RUN IND LIGHTS - RHR PUMP RM EMER FAN-COIL UNIT 01	VAS	I
1-ZL-APSI1A	STOP/AUTO/START IND LIGHTS-SI PUMP 11	SI	I
1/1-8000A	PRZR PORV BLK VLV	RC	I
1/1-8106	CHRG PMP TO RCS ISOL VLV	CS	I
1/1-8112	RCP SEAL WTR RET ISOL VLV	CS	I
1/1-8149A	LTDN ORIFICE ISOL VLV (45 GPM)	CS	I
1/1-8149B	LTDN ORIFICE ISOL VLV (75 GPM)	CS	I
1/1-8716A	RHRP 1 XTIE VLV	RH	I
1/1-8801A	CCP SI ISOL VLV ORC	CS	I
1/1-8804A	RHRP 1 TO CCP SUCT VLV	CS	I
1/1-8807A	SI<->CHRG SUCT HDR XTIE VLV	SI	I
1/1-8809A	RHR TO CL 1 & 2 INJ ISOL VLV	RH	I
1/1-8811A	CNTMT SMP TO RHRP 1 SUCT ISOL VLV ORC	RH	I
1/1-8821A	SIP 1 XTIE VLV	SI	I
1/1-8835	SI TO CL 1 & 4 INJ ISOL VLV	SI	I
1/1-8880	SI/PORV ACCUM N2 ISOL VLV ORC	SI	I
1/1-APCH1	CCP 1	CS	I
1/1-APRH1	RHRP 1	RH	I
1/1-APSI1	SIP 1	SI	I
1/1-CIPAA1	CNTMT ISOL-PHASE A/CNTMT VENT ISOL MAN ACT	ES	I
1/1-CIPBA1A	CS/CNTMT ISOL-PHASE B MAN ACT	ES	I
1/1-CSRA	CS RESET	CT	I
1/1-LCV-0459	LTDN ISOL VLV	CS	I
1/1-PCV-0455A	PRZR PORV	RC	I
1/1-RTBAL	LIGHT CB-07	CR	I
1/1-RTC	RX TRIP BKR	ES	I
1/1-RWSTA	RHR AUTO SWOVR RESET	SI	I
1/1-SIA1	SI MAN ACT	ES	I
1/1-SIA2	SI MAN ACT 1/1 SIA2	ES	I
1/1-SIRA	SI RESET	SI	I
1/1-SLSIRBA	MSL ISOL SI RESET/BLOCK	SI	I
CS-1DG1E	DG 1 EMER START/STOP	DG	I
CS-1DG1N	HAND SWITCH	DG	I
CS-1EA1-1	INCOMING BKR 1EA1-1 CONTROL SWITCH	EPA	I
CS-1EA1-2	INCOMING BKR 1EA1-2 CONTROL SWITCH	EPA	I
F-1EG1	DG 1 FREQ	DG	I
F-1EG1	DG 1 FREQ	DG	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EG1	DG 1 VOLT	DG	I
V-1EG1	DG 1 VOLT	DG	I
WH/1EG1	A.C. WATTHOUR METER	DG	I
X-HS-5805A	SFP HX & PMP RM FN CLR FN 1	VAF	I
X-HS-5825A	CR MU AIR SPLY FN 37 & SUCT DMPR	VAR	I

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-APRH1	STOP/AUTO/RUN IND LIGHTS - RHR PUMP RM EMER FAN-COIL UNIT 01	VAS	I
1-ZL-APSI1A	STOP/AUTO/START IND LIGHTS-SI PUMP 11	SI	I
1/1-8000A	PRZR PORV BLK VLV	RC	I
1/1-8106	CHRG PMP TO RCS ISOL VLV	CS	I
1/1-8112	RCP SEAL WTR RET ISOL VLV	CS	I
1/1-8149A	LTDN ORIFICE ISOL VLV (45 GPM)	CS	I
1/1-8149B	LTDN ORIFICE ISOL VLV (75 GPM)	CS	I
1/1-8716A	RHRP 1 XTIE VLV	RH	I
1/1-8801A	CCP SI ISOL VLV ORC	CS	I
1/1-8804A	RHRP 1 TO CCP SUCT VLV	CS	I
1/1-8807A	SI<->CHRG SUCT HDR XTIE VLV	SI	I
1/1-8809A	RHR TO CL 1 & 2 INJ ISOL VLV	RH	I
1/1-8811A	CNTMT SMP TO RHRP 1 SUCT ISOL VLV ORC	RH	I
1/1-8821A	SIP 1 XTIE VLV	SI	I
1/1-8835	SI TO CL 1 & 4 INJ ISOL VLV	SI	I
1/1-8880	SI/PORV ACCUM N2 ISOL VLV ORC	SI	I
1/1-APCH1	CCP 1	CS	I
1/1-APRH1	RHRP 1	RH	I
1/1-APSI1	SIP 1	SI	I
1/1-CIPAA1	CNTMT ISOL-PHASE A/CNTMT VENT ISOL MAN ACT	ES	I
1/1-CIPBA1A	CS/CNTMT ISOL-PHASE B MAN ACT	ES	I
1/1-CSRA	CS RESET	CT	I
1/1-LCV-0459	LTDN ISOL VLV	CS	I
1/1-PCV-0455A	PRZR PORV	RC	I
1/1-RTBAL	LIGHT CB-07	CR	I
1/1-RTC	RX TRIP BKR	ES	I
1/1-RWSTA	RHR AUTO SWOVR RESET	SI	I
1/1-SIA1	SI MAN ACT	ES	I
1/1-SIA2	SI MAN ACT 1/1 SIA2	ES	I
1/1-SIRA	SI RESET	SI	I
1/1-SLSIRBA	MSL ISOL SI RESET/BLOCK	SI	I
CS-1DG1E	DG 1 EMER START/STOP	DG	I
CS-1DG1N	HAND SWITCH	DG	I
CS-1EA1-1	INCOMING BKR 1EA1-1 CONTROL SWITCH	EPA	I
CS-1EA1-2	INCOMING BKR 1EA1-2 CONTROL SWITCH	EPA	I
F-1EG1	DG 1 FREQ	DG	I
F-1EG1	DG 1 FREQ	DG	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EG1	DG 1 VOLT	DG	I
V-1EG1	DG 1 VOLT	DG	I
WH/1EG1	A.C. WATTHOUR METER	DG	I
X-HS-5805A	SFP HX & PMP RM FN CLR FN 1	VAF	I
X-HS-5825A	CR MU AIR SPLY FN 37 & SUCT DMPR	VAR	I

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-APRH1	STOP/AUTO/RUN IND LIGHTS - RHR PUMP RM EMER FAN-COIL UNIT 01	VAS	I
1-ZL-APSI1A	STOP/AUTO/START IND LIGHTS-SI PUMP 11	SI	I
1/1-8000A	PRZR PORV BLK VLV	RC	I
1/1-8106	CHRG PMP TO RCS ISOL VLV	CS	I
1/1-8112	RCP SEAL WTR RET ISOL VLV	CS	I
1/1-8149A	LTDN ORIFICE ISOL VLV (45 GPM)	CS	I
1/1-8149B	LTDN ORIFICE ISOL VLV (75 GPM)	CS	I
1/1-8716A	RHRP 1 XTIE VLV	RH	I
1/1-8801A	CCP SI ISOL VLV ORC	CS	I
1/1-8804A	RHRP 1 TO CCP SUCT VLV	CS	I
1/1-8807A	SI<->CHRG SUCT HDR XTIE VLV	SI	I
1/1-8809A	RHR TO CL 1 & 2 INJ ISOL VLV	RH	I
1/1-8811A	CNTMT SMP TO RHRP 1 SUCT ISOL VLV ORC	RH	I
1/1-8821A	SIP 1 XTIE VLV	SI	I
1/1-8835	SI TO CL 1 & 4 INJ ISOL VLV	SI	I
1/1-8880	SI/PORV ACCUM N2 ISOL VLV ORC	SI	I
1/1-APCH1	CCP 1	CS	I
1/1-APRH1	RHRP 1	RH	I
1/1-APSI1	SIP 1	SI	I
1/1-CIPAA1	CNTMT ISOL-PHASE A/CNTMT VENT ISOL MAN ACT	ES	I
1/1-CIPBA1A	CS/CNTMT ISOL-PHASE B MAN ACT	ES	I
1/1-CSRA	CS RESET	CT	I
1/1-LCV-0459	LTDN ISOL VLV	CS	I
1/1-PCV-0455A	PRZR PORV	RC	I
1/1-RTBAL	LIGHT CB-07	CR	I
1/1-RTC	RX TRIP BKR	ES	I
1/1-RWSTA	RHR AUTO SWOVR RESET	SI	I
1/1-SIA1	SI MAN ACT	ES	I
1/1-SIA2	SI MAN ACT 1/1 SIA2	ES	I
1/1-SIRA	SI RESET	SI	I
1/1-SLSIRBA	MSL ISOL SI RESET/BLOCK	SI	I
CS-1DG1E	DG 1 EMER START/STOP	DG	I
CS-1DG1N	HAND SWITCH	DG	I
CS-1EA1-1	INCOMING BKR 1EA1-1 CONTROL SWITCH	EPA	I
CS-1EA1-2	INCOMING BKR 1EA1-2 CONTROL SWITCH	EPA	I
F-1EG1	DG 1 FREQ	DG	I
F-1EG1	DG 1 FREQ	DG	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EG1	DG 1 VOLT	DG	I
V-1EG1	DG 1 VOLT	DG	I
WH/1EG1	A.C. WATTHOUR METER	DG	I
X-HS-5805A	SFP HX & PMP RM FN CLR FN 1	VAF	I
X-HS-5825A	CR MU AIR SPLY FN 37 & SUCT DMPR	VAR	I

ERGCRDB INSTRUMENTS

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-APRH1	STOP/AUTO/RUN IND LIGHTS - RHR PUMP RM EMER FAN-COIL UNIT 01	VAS	I
1-ZL-APSI1A	STOP/AUTO/START IND LIGHTS-SI PUMP 11	SI	I
1/1-8000A	PRZR PORV BLK VLV	RC	I
1/1-8106	CHRG PMP TO RCS ISOL VLV	CS	I
1/1-8112	RCP SEAL WTR RET ISOL VLV	CS	I
1/1-8149A	LTDN ORIFICE ISOL VLV (45 GPM)	CS	I
1/1-8149B	LTDN ORIFICE ISOL VLV (75 GPM)	CS	I
1/1-8716A	RHRP 1 XTIE VLV	RH	I
1/1-8801A	CCP SI ISOL VLV ORC	CS	I
1/1-8804A	RHRP 1 TO CCP SUCT VLV	CS	I
1/1-8807A	SI<->CHRG SUCT HDR XTIE VLV	SI	I
1/1-8809A	RHR TO CL 1 & 2 INJ ISOL VLV	RH	I
1/1-8811A	CNTMT SMP TO RHRP 1 SUCT ISOL VLV ORC	RH	I
1/1-8821A	SIP 1 XTIE VLV	SI	I
1/1-8835	SI TO CL 1 & 4 INJ ISOL VLV	SI	I
1/1-8880	SI/PORV ACCUM N2 ISOL VLV ORC	SI	I
1/1-APCH1	CCP 1	CS	I
1/1-APRH1	RHRP 1	RH	I
1/1-APSI1	SIP 1	SI	I
1/1-CIPAA1	CNTMT ISOL-PHASE A/CNTMT VENT ISOL MAN ACT	ES	I
1/1-CIPBA1A	CS/CNTMT ISOL-PHASE B MAN ACT	ES	I
1/1-CSRA	CS RESET	CT	I
1/1-LCV-0459	LTDN ISOL VLV	CS	I
1/1-PCV-0455A	PRZR PORV	RC	I
1/1-RTBAL	LIGHT CB-07	CR	I
1/1-RTC	RX TRIP BKR	ES	I
1/1-RWSTA	RHR AUTO SWOVR RESET	SI	I
1/1-SIA1	SI MAN ACT	ES	I
1/1-SIA2	SI MAN ACT 1/1 SIA2	ES	I
1/1-SIRA	SI RESET	SI	I
1/1-SLSIRBA	MSL ISOL SI RESET/BLOCK	SI	I
CS-1DG1E	DG 1 EMER START/STOP	DG	I
CS-1DG1N	HAND SWITCH	DG	I
CS-1EA1-1	INCOMING BKR 1EA1-1 CONTROL SWITCH	EPA	I
CS-1EA1-2	INCOMING BKR 1EA1-2 CONTROL SWITCH	EPA	I
F-1EG1	DG 1 FREQ	DG	I
F-1EG1	DG 1 FREQ	DG	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EG1	DG 1 VOLT	DG	I
V-1EG1	DG 1 VOLT	DG	I
WH/1EG1	A.C. WATTHOUR METER	DG	I
X-HS-5805A	SFP HX & PMP RM FN CLR FN 1	VAF	I
X-HS-5825A	CR MU AIR SPLY FN 37 & SUCT DMPR	VAR	I

TAG	NOUN NAME	SYSTEM	CAT
X-HS-5855	CR EXH FN 1	VAR	I
X-HS-5857	CR KTCHN & TOIL EXH FN 3 & EXH DMPR	VAR	I

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TAG	NOUN NAME	SYSTEM	CAT
1-ALB-2A	ALARM LIGHT BOX	EI	N
1-ALB-2B	ALARM LIGHT BOX	EI	N
1-ALB-3B	ALARM LIGHT BOX	EI	N
1-ALB-6C	ALARM LIGHT BOX	EI	N
1-CS-ALB-06C	ANNUNCIATOR PUSH	EI	N
1-FI-0121A	CHRG FLOW	CS	N
1-FI-0142	RCP 4 SEAL WTR INJ FLO	CS	N
1-FI-0143	RCP 3 SEAL WTR INJ FLO	CS	N
1-FI-0144	RCP 2 SEAL WTR INJ FLO	CS	N
1-FI-0145	RCP 1 SEAL WTR INJ FLO	CS	N
1-FI-0183A	EMER BORATE FLO	CS	N
1-FI-0618	RHR TO CL 1 & 2 INJ FLO	RH	N
1-FI-0619	RHR TO CL 3 & 4 INJ FLO	RH	N
1-FI-0917	CCP SI FLO	CS	N
1-FI-0918	SIP 1 DISCH FLO	SI	N
1-FI-0922	SIP 2 DISCH FLO	SI	N
1-FI-2463A	SG 1 AFW FLO	AF	I
1-FI-2463C	SG 1 AFW FLO	AF	I
1-FI-2464A	SG 2 AFW FLO	AF	I
1-FI-2464C	SG 2 AFW FLO	AF	I
1-FI-2465A	SG 3 AFW FLO	AF	I
1-FI-2465C	SG 3 AFW FLO	AF	I
1-FI-2466A	SG 4 AFW FLO	AF	I
1-FI-2466C	SG 4 AFW FLO	AF	I
1-FI-4258A	SSWP 1 DISCH FLO	SW	I
1-FI-4259A	SSWP 2 DISCH FLO	SW	I
1-FI-4391	DG 1 CLR SSW RET FLO	SW	N
1-FI-4392	DG 2 CLR SSW RET FLO	SW	N
1-FI-4536A	CCW HX 1 OUT FLO	CC	I
1-FI-4537A	CCW HX 2 OUT FLO	CC	I
1-FI-4556	RHR HX 1 CCW RET FLO	CC	I
1-FI-4558	RHR HX 2 CCW RET FLO	CC	I
1-FI-4678	RCP 1 THBR CLR CCW RET FLO	CC	I
1-FI-4682	RCP 2 THBR CLR CCW RET FLO	CC	I
1-FI-4686	RCP 3 THBR CLR CCW RET FLO	CC	I
1-FI-4690	RCP 4 THBR CLR CCW RET FLO	CC	I
1-FI-4772-1	CSP 1 DISCH FLO	CT	I
1-FI-4772-2	CSP 3 DISCH FLO	CT	I
1-FI-4773-1	CSP 2 DISCH FLO	CT	I
1-FI-4773-2	CSP 4 DISCH FLO	CT	I
1-FK-0121	CCP CHRG FLO CTRL	CS	N
1-FK-0510	SG 1 FW FLO CTRL	FW	N
1-FK-0520	SG 2 FW FLO CTRL	FW	N
1-FK-0530	SG 3 FW FLO CTRL	FW	N
1-FK-0540	SG 4 FW FLO CTRL	FW	N
1-FK-2181	FSBV 1 FLO CTRL	FW	N
1-FK-2182	FSBV 2 FLO CTRL	FW	N
1-FK-2183	FSBV 3 FLO CTRL	FW	N
1-FK-2184	FSBV 4 FLO CTRL	FW	N
1-FK-2453A	MD AFWP 1 SG 1 FLO CTRL	AF	I
1-FK-2453B	MD AFWP 1 SG 2 FLO CTRL	AF	I

TAG	NOUN NAME	SYSTEM	CAT
1-FK-2454A	MD AFWP 2 SG 3 FLO CTRL	AF	I
1-FK-2454B	MD AFWP 2 SG 4 FLO CTRL	AF	I
1-FK-2459A	TD AFWP SG 1 FLO CTRL	AF	I
1-FK-2460A	TD AFWP SG 2 FLO CTRL	AF	I
1-FK-2461A	TD AFWP SG 3 FLO CTRL	AF	I
1-FK-2462A	TD AFWP SG 4 FLO CTRL	AF	I
1-HS-2134	FWIV 1	FW	I
1-HS-2135	FWIV 2	FW	I
1-HS-2136	FWIV 3	FW	I
1-HS-2137	FWIV 4	FW	I
1-HS-2162	SG 1 FW BYP & CTRL VLV	FW	I
1-HS-2163	SG 2 FW BYP & CTRL VLV	FW	I
1-HS-2164	SG 3 FW BYP & CTRL VLV	FW	I
1-HS-2165	SG 4 FW BYP & CTRL VLV	FW	I
1-HS-2185	FWIBV 1	FW	I
1-HS-2186	FWIBV 2	FW	I
1-HS-2187	FWIBV 3	FW	I
1-HS-2188	FWIBV 4	FW	I
1-HS-2193	FWPBV 1	FW	I
1-HS-2194	FWPBV 2	FW	I
1-HS-2195	FWPBV 3	FW	I
1-HS-2196	FWPBV 4	FW	I
1-HS-2333A	MSIV 1	MS	I
1-HS-2333B	MAIN STM LOOP 1 BYPASS ISOLATION VLV	MS	I
1-HS-2333B	MAIN STM LOOP 1 BYPASS ISOLATION VLV	MS	I
1-HS-2334A	MSIV 2	MS	I
1-HS-2334B	MAIN STM LOOP 2 BYPASS ISOLATION VLV	MS	I
1-HS-2334B	MAIN STM LOOP 2 BYPASS ISOLATION VLV	MS	I
1-HS-2335A	MSIV 3	MS	I
1-HS-2335B	MAIN STM LOOP 3 BYPASS ISOLATION VLV	MS	I
1-HS-2335B	MAIN STM LOOP 3 BYPASS ISOLATION VLV	MS	I
1-HS-2336A	MSIV 4	MS	I
1-HS-2336B	MAIN STM LOOP 4 BYPASS ISOLATION VLV	MS	I
1-HS-2336B	MAIN STM LOOP 4 BYPASS ISOLATION VLV	MS	I
1-HS-2397	SG 1 BLDN ISOL VLV	SB	I
1-HS-2397A	SG 1 BLDN HELB ISOL VLV	SB	I
1-HS-2400	SG 4 BLDN ISOL VLV	SB	I
1-HS-2450A	MD AFWP 1	AF	I
1-HS-2451A	MD AFWP 2	AF	I
1-HS-2452-1	AFWPT STM SPLY VLV-MSL 1	AF	I
1-HS-2491	AFWIV 1	AF	I
1-HS-4250A	SSWP 1	SW	I
1-HS-4251A	SSWP 2	SW	I

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TAG	NOUN NAME	SYSTEM	CAT
1-HS-4393	DG 1 CLR SSW RET VLV	SW	I
1-HS-4394	DG 2 CLR SSW RET VLV	SW	I
1-HS-4518A	CCWP 1	CC	I
1-HS-4519A	CCWP 2	CC	I
1-HS-4572	RHR HX 1 CCW RET VLV	CC	I
1-HS-4573	RHR HX 2 CCW RET VLV	CC	I
1-HS-4758	RWST TO CSP 1 & 3 SUCT VLV	CT	I
1-HS-4759	RWST TO CSP 2 & 4 SUCT VLV	CT	I
1-HS-4764	CSP 1	CT	I
1-HS-4765	CSP 3	CT	I
1-HS-4766	CSP 2	CT	I
1-HS-4767	CSP 4	CT	I
1-HS-4772-1	CSP 1 RECIRC VLV	CT	I
1-HS-4772-2	CSP 3 RECIRC VLV	CT	I
1-HS-4773-1	CSP 2 RECIRC VLV	CT	I
1-HS-4773-2	CSP 4 RECIRC VLV	CT	I
1-HS-4776	CS HX 1 OUT VLV	CT	I
1-HS-4777	CS HX 2 OUT VLV	CT	I
1-HS-4782	CNTMT SMP TO CSP 1 & 3 SUCT ISOL VLV	CT	I
1-HS-4783	CNTMT SMP TO CSP 2 & 4 SUCT ISOL VLV	CT	I
1-HS-5421	CRDM VENT FN 1	VAC	I
1-HS-5423	CRDM VENT FN 2	VAC	I
1-HS-5804A	PDP RM FN CLR FN 3	VAA	N
1-II-RCP1	RCP 1 MOTOR CURRENT	RC	N
1-II-RCP2	RCP 2 MOTOR CURRENT	RC	N
1-II-RCP3	RCP 3 MOTOR CURRENT	RC	N
1-II-RCP4	RCP 4 MOTOR CURRENT	RC	N
1-LI-0459A	PRZR LVL CHAN I	RC	I
1-LI-0460A	PRZR LVL CHAN II	RC	I
1-LI-0461	PRZR LVL CHAN III	RC	I
1-LI-0517	SG 1 LVL (NR) CHAN IV	MS	I
1-LI-0518	SG 1 LVL (NR) CHAN III	MS	I
1-LI-0519	SG 1 LVL (NR) CHAN II	MS	I
1-LI-0527	SG 2 LVL (NR) CHAN IV	MS	I
1-LI-0528	SG 2 LVL (NR) CHAN III	MS	I
1-LI-0529	SG 2 LVL (NR) CHAN I	MS	I
1-LI-0537	SG 3 LVL (NR) CHAN IV	MS	I
1-LI-0538	SG 3 LVL (NR) CHAN III	MS	I
1-LI-0539	SG 3 LVL (NR) CHAN I	MS	I
1-LI-0547	SG 4 LVL (NR) CHAN IV	MS	I
1-LI-0548	SG 4 LVL (NR) CHAN III	MS	I
1-LI-0549	SG 4 LVL (NR) CHAN II	MS	I
1-LI-0551	SG 1 LVL (NR) CHAN I	MS	I
1-LI-0552	SG 2 LVL (NR) CHAN II	MS	I
1-LI-0553	SG 3 LVL (NR) CHAN II	MS	I
1-LI-0554	SG 4 LVL (NR) CHAN I	MS	I
1-LI-2478A	CST LVL	AF	I
1-LI-2479A	CST LVL	AF	I
1-LI-4779A	CNTMT RECIRC SMP LVL	CT	I

ERGCRDB INSTRUMENTS

TAG	NOUN NAME	SYSTEM	CAT
1-LI-4779B	CNTMT RECIRC SMP LVL	CT	I
1-LI-4781A	CNTMT RECIRC SMP LVL	CT	I
1-LI-4781B	CNTMT RECIRC SMP LVL	CT	I
1-LK-0550	SG 1 FW BYP CTRL	FW	N
1-LK-0560	SG 2 FW BYP CTRL	FW	N
1-LK-0570	SG 3 FW BYP CTRL	FW	N
1-LK-0580	SG 4 FW BYP CTRL	FW	N
1-MLB-10	MONITOR LIGHT BOX	EI	I
1-MLB-1A-1	MONITOR LIGHT BOX	EI	I
1-MLB-1A-2	MONITOR LIGHT BOX	EI	I
1-MLB-1B-1	MONITOR LIGHT BOX	EI	I
1-MLB-1B-2	MONITOR LIGHT BOX	EI	I
1-MLB-45A	MONITOR LIGHT BOX	EI	I
1-MLB-45B	MONITOR LIGHT BOX	EI	I
1-MLB-4A-1	MONITOR LIGHT BOX	EI	I
1-MLB-4A-2	MONITOR LIGHT BOX	EI	I
1-MLB-4A-3	MONITOR LIGHT BOX	CC	I
1-MLB-4B-1	MONITOR LIGHT BOX	MS	I
1-MLB-4B-2	MONITOR LIGHT BOX	EI	I
1-MLB-4B-3	MONTIOR LIGHT BOX	EI	I
1-MLB-9	MONTIOR LIGHT BOX	EI	I
1-NI-0050A-2	NEUT FLUX SR	NI	I
1-NI-0050B-2	NEUT FLUX SR	NI	I
1-PCIP	PERMISSIVE STATUS LIGHT BOX	EI	N
1-PI-0120A	CHRG HDR PRESS	CS	N
1-PI-0150A	RCP 4 SEAL 1 DELTA P	CS	N
1-PI-0151A	RCP 3 SEAL 1 DELTA P	CS	N
1-PI-0152A	RCP 2 SEAL 1 DELTA P	CS	N
1-PI-0153A	RCP 1 SEAL 1 DELTA P	CS	N
1-PI-0403	HL 4 PRESS (WR)	RC	I
1-PI-0403A	HL 4 PRESS (NR)	RC	I
1-PI-0455A	PRZR PRESS CHAN I	RC	N
1-PI-0456	PRZR PRESS CHAN II	RC	N
1-PI-0457	PRZR PRESS CHAN III	RC	N
1-PI-0458	PRZR PRESS CHAN IV	RC	N
1-PI-0514A	MSL 1 PRESS CHAN I	MS	I
1-PI-0515A	MSL 1 PRESS CHAN II	MS	I
1-PI-0516A	MSL 1 PRESS CHAN IV	MS	I
1-PI-0524A	MSL 2 PRESS CHAN I	MS	I
1-PI-0525A	MSL 2 PRESS CHAN II	MS	I
1-PI-0526A	MSL 2 PRESS CHAN III	MS	I
1-PI-0534A	MSL 3 PRESS CHAN I	MS	I
1-PI-0535A	MSL 3 PRESS CHAN II	MS	I
1-PI-0536A	MSL 3 PRESS CHAN III	MS	I
1-PI-0544A	MSL 4 PRESS CHAN I	MS	I
1-PI-0545A	MSL 4 PRESS CHAN II	MS	I
1-PI-0546A	MLS 4 PRESS CHAN IV	MS	I
1-PI-0614	RHRP 1 DISCH PRESS	RH	N
1-PI-0615	RHRP 2 DISCH PRESS	RH	N
1-PI-0919	SIP 1 DISCH PRESS	SI	N
1-PI-0923	SIP 2 DISCH PRESS	SI	N

TAG	NOUN NAME	SYSTEM	CAT
1-PI-0934	CNTMT PRESS (IR) CHAN IV	AM	I
1-PI-0935	CNTMT PRESS (IR) CHAN III	AM	I
1-PI-0936	CNTMT PRESS (IR) CHAN II	AM	I
1-PI-0937	CNTMT PRESS (IR) CHAN I	AM	I
1-PI-2453A	MD AFWP 1 DISCH PRESS	AF	I
1-PI-2454A	MD AFWP 2 DISCH PRESS	AF	I
1-PI-2455A	TD AFWP DISCH PRESS	AF	I
1-PI-3616	RCS PRESS (WR)	RC	I
1-PI-4252A	SSWP 1 DISCH PRESS	SW	I
1-PI-4253A	SSWP 2 DISCH PRESS	SW	I
1-PI-4520	CCWP 1 DISCH PRESS	CC	I
1-PI-4521	CCWP 2 DISCH PRESS	CC	I
1-PI-4774-1	CSP 1 DISCH PRESS	CT	I
1-PI-4774-2	CSP 3 DISCH PRESS	CT	I
1-PI-4775-1	CSP 2 DISCH PRESS	CT	I
1-PI-4775-2	CSP 4 DISCH PRESS	CT	I
1-PK-0455B	RC LOOP 1 PRZR SPR VLV CTRL	RC	N
1-PK-0455C	RC LOOP 4 PRZR SPR VLV CTRL	RC	N
1-PK-0507	STM DMP PRESS CTRL	MS	N
1-PK-2325	SG 1 ATMOS RLF VLV CTRL	MS	I
1-PK-2328	SG 4 ATMOS RLF VLV CTRL	MS	I
1-PR-0437	RC WIDE RANGE LOOP 1 HOT LEG PRESSURE RECORDER	RC	I
1-RIC-6290A	CNTMT RAD LVL HI RNG	RM	I
1-RIC-6290B	CNTMT RAD LVL HI RNG	RM	I
1-TI-0412	RC LOOP 1 T AVE CHAN I	RC	N
1-TI-0413A	RCS HL 1-01 TRAIN A WIDE RANGE TEMP IND 0413A	XI	I
1-TI-0422	RC LOOP 2 T AVE CHAN II	RC	N
1-TI-0423A	RCS HL 1-02 TRAIN A WIDE RANGE TEMP IND 0423A	XI	I
1-TI-0432	RC LOOP 3 T AVE CHAN III	RC	N
1-TI-0442	RC LOOP 4 T AVE CHAN IV	RC	N
1-TI-3611-1	U1 RCS SAT MARGIN TEMP IND 3611-1	XI	I
1-TI-3612-1	U1 RCS SAT MARGIN TEMP IND 3612-1	XI	I
1-ZL-0455B	PRESSURIZER SPRAY VALVE POSITION INDICATOR LIGHT	RC	N
1-ZL-0455C	PPESSURIZER SPRAY VALLVE POSITION INDICATOR LIGHT	RC	N
1-ZL-0459	CVCS FROM RCS LETDOWN TO REGENERATIVE HEAT EXCHANGER INDICATING LIGHT	CS	I
1-ZL-0460	CVCS FROM RCS LETDOWN TO REGENERATIVE HEAT EXCHANGER INDICATING LIGHT	CS	I
1-ZL-0510	MAIN FEED WATER CONTROL VALVE INDICATING LIGHT CB-09	PC	I
1-ZL-0520	MAIN FEED WATER CONTROL VALVE INDICATING LIGHT CB-09	PC	I

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TAG	NOUN NAME	SYSTEM	CAT
1-ZL-0530	MAIN FEED WATER CONTROL VALVE INDICATING LIGHT CB-09	FW	I
1-ZL-0540	MAIN FEEDWATER CONTROL VALVE INDICATING LIGHT CB-09	FW	I
1-ZL-0610	RHRP 1-01 MINIFLO VLV INDICATING LIGHT	RH	I
1-ZL-0611	RHRP 1-02 MINIFLO VLV INDICATING LIGHT	RH	I
1-ZL-2134	FW TO SG 1 PISTON OPER ISOLATION VALVE 1-HS-2134 INDICATING LIGHT	FW	I
1-ZL-2135	FW TO SG 2 PISTON OPER ISO VALVE 1-HS-2135 IND LIGHT	FW	I
1-ZL-2136	FW TO SG 3 PISTON OPER ISO VALVE 1-HS-2136 IND LIGHT	FW	I
1-ZL-2137	FW TO SG 4 PISTON OPER ISO VALVE 1-HS-2137 IND LIGHT	FW	I
1-ZL-2162	FW TO SG 1 CONTR VLV BY-PASS VLV ONHS-2162	FW	I
1-ZL-2163	FW TO SG 2 CONTR VLV BY-PASS VLV ON HS-2163	FW	I
1-ZL-2164	FW TO SG 3 CONTR VLV BY-PASS VLV ON HS-2164	FW	I
1-ZL-2165	FW TO SG 4 CONTR VLV BY-PASS VLV ON HS-2165	FW	I
1-ZL-2181	FW LP1 TO SG1 MAIN NZL BYPASS FLOW VLV	FW	I
1-ZL-2182	FW LP2 TO SG2 MAIN NZL BYPASS FLOW VLV	FW	I
1-ZL-2183	FW LP3 TO SG3 MAIN NZL BYPASS FLOW VLV	FW	I
1-ZL-2184	FW LP4 TO SG4 MAIN NZL BYPASS FLOW VLV	FW	I
1-ZL-2185	FW LOOP 1 TO SG 1 MAIN FW NOZZLE ISO BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2186	FW LOOP 2 TO SG 2 MAIN FW NOZZLE ISO BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2187	FW LOOP 3 TO SG 3 MAIN FW NOZZLE ISO BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2188	FW LOOP 4 TO SG 4 MAIN FW NOZZLE ISO BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2193	FW LOOP 1 TO SG 1 AUX FW NOZZLE PURGE BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2194	FW LOOP 2 TO SG 2 AUX FW NOZZLE PURGE BYPASS VALVE INDICATING LIGHT	FW	I

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TAG	NOUN NAME	SYSTEM	CAT
1-ZL-2195	FW LOOP 3 TO SG 3 AUX FW NOZZLE PURGE BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2196	FW LOOP 4 TO SG 4 AUX FW NOZZLE PURGE BYPASS VALVE INDICATING LIGHT	FW	I
1-ZL-2325	LOOP 1 MAIN STEAM POWER RELIEF VLV PRESSURE INDICATING LIGHT	PC	I
1-ZL-2326	LOOP 2 MAIN STEAM POWER RELIEF VLV PRESSURE INDICATING LIGHT	MS	I
1-ZL-2327	LOOP 3 MAIN STEAM POWER RELIEF VLV PRESSURE INDICATING LIGHT	MS	I
1-ZL-2328	LOOP 4 MAIN STEAM POWER RELIEF VLV PRESSURE INDICATING LIGHT	MS	I
1-ZL-2333B	MAIN STM LOOP 1 BYPASS ISOL VLV ON HS-2333-B INDICATING LIGHT	MS	I
1-ZL-2336B	MAIN STM LOOP 4 BYPASS ISOL VLV ON HS-2336B INDICATING LIGHT	MS	I
1-ZL-2369A	MAIN STM DUMP VLV TO CNDSR A SHELL	MS	N
1-ZL-2369B	MAIN STM DUMP VLV TO CNDSR A SHELL	MS	N
1-ZL-2369C	MAIN STM DUMP VLV TO CNDSR B SHELL	MS	N
1-ZL-2370A	MAIN STM DUMP VLV TO CNDSR B SHELL	MS	N
1-ZL-2370B	MAIN STM DUMP VLV TO CNDSR A SHELL	MS	N
1-ZL-2370C	MAIN STM DUMP VLV TO CNDSR A SHELL	MS	N
1-ZL-2370D	MAIN STM DUMP VLV TO CNDSR B SHELL	MS	N
1-ZL-2370E	MAIN STM DUMP VLV TO CNDSR B SHELL	MS	N
1-ZL-2370F	MAIN STM DUMP VLV TO CNDSR A SHELL	MS	N
1-ZL-2370G	MAIN STM DUMP VLV TO CNDSR A SHELL	MS	N
1-ZL-2370H	MAIN STM DUMP VLV TO CNDSR B SHELL	MS	N
1-ZL-2370J	MAIN STM DUMP VLV TO CNDSR B SHELL	MS	N
1-ZL-2401AB	SG 1 DRUM SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2401BB	SG 1 BLDN SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2402AB	SG 2 DRUM SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2402BB	SG 2 BLDN SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-2403AB	SG 3 DRUM SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2403BB	SG 3 BLDN SAMPLE ISOLATION VLV OPEN	MS	I
1-ZL-2404AB	SG 4 DRUM SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2404BB	SG 4 BLDN SAMPLE ISOLATION VLV OPEN INDICATING LIGHT	MS	I
1-ZL-2405AA	MS GEN 01 SAMPLE ISOL VLV INDICATING LIGHT	MS	I
1-ZL-2405AA	MS GEN 01 SAMPLE ISOL VLV INDICATING LIGHT	MS	I
1-ZL-2406AA	MS GEN 02 SAMPLE ISOL VLV INDICATING LIGHT	MS	I
1-ZL-2406AB	INDICATING LIGHT, STM GEN 2 SAMPLE ISOL VLV 1-HV-2406	MS	I
1-ZL-2407AA	MS GEN 03 SAMPLE ISOL VLV INDICATING LIGHT	MS	I
1-ZL-2407AB	INDICATING LIGHT, STM GEN 3 SAMPLE ISOL VLV 1-HV-2407	MS	I
1-ZL-2408AA	INDICATING LIGHT	MS	I
1-ZL-2408AB	INDICATING LIGHT, STM GEN 4 SAMPLE ISOL VLV 1-HV-2408	MS	I
1-ZL-2450A	AF PUMP CP1-AFAPMD-01 CTRL CIRCUIT INDICATING LIGHT	AF	I
1-ZL-2451A	AF PUMP CP1-AFAPMD-02 CTRL CIRCUIT INDICATING LIGHT	AF	I
1-ZL-2452-1A	MAIN STM HDR #1 ISOL VLV INDICATING LIGHT ON HS-2452-1	AF	I
1-ZL-2453A	MOT DRVN AFW PMP 01 DISCH TO SG 1 CONTR VLV	AF	I
1-ZL-2453B	MOT DRVN AFW PMP 01 DISCH TO SG 2 CONTR VLV INDICATING LIGHT	AF	I
1-ZL-2454A	MOT DRVN AFW PMP 02 DISCH TO SG 3 CONTR VLV	AF	I
1-ZL-2454B	MOT DRVN AFW PMP 02 DISCH TO SG 4 CONTR VLV INDICATING LIGHT	AF	I
1-ZL-2459A	TURB DR AFW PUMP DISCH TO SG 1 CONTR VLV INDICATING LIGHT	AF	I
1-ZL-2460A	TURB DR AFW PUMP DISCH TO SG 2 CONTR VLV INDICATING LIGHT	AF	I
1-ZL-2461A	TURB DR AFW PUMP DISCH TO SG 3 CONTR VLV INDICATING LIGHT	AF	I
1-ZL-2462A	TURB DR AFW PUMP DISCH TO SG 4 CONTR VLV INDICATING LIGHT	AF	I
1-ZL-2491A	STM GEN LOOP #1 ISOL VLV INDICATING LIGHT ON HS-2491	AF	I
1-ZL-2491A	STM GEN LOOP #1 ISOL VLV INDICATING LIGHT ON HS-2491	AF	I

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-2491B	STM GEN LOOP #1 ISOL VLV ON HS-2491 INDICATING LIGHT	AF	I
1-ZL-2491B	STM GEN LOOP #1 ISOL VLV ON HS-2491 INDICATING LIGHT	AF	I
1-ZL-2492A	STM GEN LOOP #2 ISOL VLV ON HS-2492 INDICATING LIGHT	AF	I
1-ZL-2492B	STM GEN LOOP #2 ISOL VLV ON HS-2492 INDICATING LIGHT	AF	I
1-ZL-2493A	STM GEN LOOP #3 ISOL VLV ON HS-2493 INDICATING LIGHT	AF	I
1-ZL-2493B	STM GEN LOOP #3 ISOL VLV ON HS-2493 INDICATING LIGHT	AF	I
1-ZL-2494A	STM GEN LOOP #4 ISOL VLV ON HS-2494 INDICATING LIGHT	AF	I
1-ZL-2494A	STM GEN LOOP #4 ISOL VLV ON HS-2494 INDICATING LIGHT	AF	I
1-ZL-2494B	STM GEN LOOP #4 ISOL VLV ON HS-2494 INDICATING LIGHT	AF	I
1-ZL-2494B	STM GEN LOOP #4 ISOL VLV ON HS-2494 INDICATING LIGHT	AF	I
1-ZL-3451	INSTRUMENT AIR COMPR1-01 MASTER COMPRESSOR RUNNING	CI	I
1-ZL-3463	INSTRUMENT AIR COMPR -02 INDICATING LITE	CI	N
1-ZL-3487	INST AIR HDR TO CONTAINMENT ISO VLV ON HS-3487	CI	I
1-ZL-4250A	SSW PMP 01 REMOTE CONTROL SWITCH IND LIGHT	SW	I
1-ZL-4251A	SSW PUMP 02 REMOTE CONTROL SWITCH IND LIGHT	SW	I
1-ZL-4518A	CCW PUMP 01 CONTROL SWITCH AND LIGHT	CC	I
1-ZL-4519A	CCW PUMP 02 CONTROL SWITCH IND LIGHT	CC	I
1-ZL-4524	CCW HX TO NON-SFGD LOOP RET HDR ISOL VLV INDIC LT ON HS-4524	CC	I
1-ZL-4525	NON-SFGD LOOP RET TO CCW HDR ISOL VLV INDIC LT ON HS-4525	CC	I
1-ZL-4526	CCW HX TO NON-SFGD LOOP ISOL VLV INDIC LT ON HS-4526	CC	I
1-ZL-4527	CCW HX TO NON-SFGD LOOP ISOL VLV INDIC LT ON HS-4527	CC	I
1-ZL-4572	CCW RHR HX 01 OUT MO CONTR VLV INDICATING LIGHT ON HS-4537	CC	I
1-ZL-4573	CCW RHR HX 02 OUT MO CONTR VLV INDICATING LIGHT ON HS-4573	CC	I
1-ZL-4696	CCW THBR CLRS MO ISOL VLV INDICATING LIGHT ON HS-4696	CC	I
1-ZL-4699	CCW N/S LOOP TO RC PMPS CLRS CTRL MO ISL VLV IND LIGHT ON HS-4699	CC	I

TAG	NOUN NAME	SYSTEM	CAT
1-ZL-4700	CCW N/S LOOP TO RC PMPS CLRS CTL MO ISL VLV IND LIGHT ON HS-4700	CC	I
1-ZL-4701	RCP MOT AIR & L/O CLRS CCW MO IS VLV INDICATING LIGHT ON HS-4701	CC	I
1-ZL-4708	CCW CNTMT ISOL VLV TO RETURN HDR INDICATING LIGHT ON HS-4708	CC	I
1-ZL-4709	RCP THRM BARR CLR CCW CNTMT MTR OP ISOL VLV POS IND LITES ON HS-4709	CC	I
1-ZL-4764A	CT PUMP CP1-CTAPCS-01 INDICATING LIGHT	CT	I
1-ZL-4765A	CT PUMP CP1-CTAPCS-03 INDICATING LIGHT	CT	I
1-ZL-4766A	CT PUMP CP1-CTAPCS-02 INDICATING LIGHT	CT	I
1-ZL-4767A	CT PUMP CP1-CTAPCS-04 INDICATING LIGHT	CT	I
1-ZL-4776	CS HX 1 OUT VLV ON IND LITE	CT	I
1-ZL-4777	CS HX 2 OUT VLV ON IND LITE	CT	I
1-ZL-5349A	REACTOR MAKEUP WTR PMP UNIT 1 INDICATING LIGHT	DD	I
1-ZL-8000A	RC PRESSURIZER RELIEF ISOL VLV INDICATING LIGHT	RC	I
1-ZL-8000B	RC PRESSURIZER RELIEF ISOL VLV INDICATING LIGHT	RC	I
1-ZL-8010A	PRESSURIZER SAFETY RELIEF DISCHARGE TEMP INDICATING LIGHT CB-05	RC	I
1-ZL-8010B	PRESSURIZER SAFETY RELIEF DISCHARGE TEMP INDICATING LIGHT CB-05	RC	I
1-ZL-8010C	PRESSURIZER SAFETY RELIEF DISCHARGE TEMP INDICATING LIGHT CB-05	RC	I
1-ZL-8100	INDICATING LIGHT	CS	I
1-ZL-8104	CVCS BA FLTR TO CHRG PUMP CTRL VLV INDICATING LIGHT	CS	I
1-ZL-8105	CVCS CHRG PUMPS TO RCS ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8106	CVCS CHRG PUMPS TP RCS ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8110	CVCS CHRG PUMP MINIFLOW ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8111	CVCS CHRG PUMP MINIFLOW ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8112	RCP SEAL WATER RET LINE ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8143	CVCS XS LTDN HX CTRL VLV INDICATING LIGHT	CS	I

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TAG	NOUN NAME	SYSTEM	CAT
1-ZL-8149A	CVCS LTDN ORIFICE ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8149B	CVCS LTDN ORIFICE ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8149C	CVCS LTDN ORIFICE ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8511A	CVCS CHRG PUMP 01 MINIFLOW ISOL BYPASS VLV INDICATING LIGHT	CS	I
1-ZL-8511B	CVCS CHRG PUMP 02 MINIFLOW ISOL BYPASS VLV INDICATING LIGHT	CS	I
1-ZL-8701A	CL/OPEN IND LIGHTS - RHR LOOP 1 INLET ISOL VLV	RH	I
1-ZL-8701B	CL/OPEN IND LIGHTS - RHR LOOP 2 INLET ISOL VLV	RH	I
1-ZL-8702A	CL/OPEN IND LTS - RHR LOOP 1 INLET ISOL VLV (NORM PWR SPLY)	RH	I
1-ZL-8702B	CL/OPEN IND LTS - RHR LOOP 2 INLET ISOL VLV	RH	I
1-ZL-8716A	RHRP 1-01 XTIE VLV INDICATING LIGHT	RH	I
1-ZL-8716B	RHRP 1-02 XTIE VLV INDICATING LIGHT	RH	I
1-ZL-8801A	DISCH OF CVCS CHRG PUMP TO RCS COLD LEG INJ ISOL VLV INDICATING LIGHT	CS	I
1-ZL-8801B	INDICATING LIGHT	CS	I
1-ZL-8804A	RHR PUMPS TO CHRG PUMPS AND SIS PUMP 01 INDICATING LIGHT	CS	I
1-ZL-8804B	RHR PUMPS TO CHRG PUMPS SIS PUMP 02 INDICATING LIGHT	SI	I
1-ZL-8807A	SI PUMPS TO CHRG PUMPS SUCT HDR CROSS CONN VLV INDICATING LIGHT	SI	I
1-ZL-8807B	SI PUMPS TO CHRG PUMPS SUCT HDR CROSS CONN VLV INDICATING LIGHT	SI	I
1-ZL-8808A	SIS ACCUM TNK 01 TO RCS COLD LEG 01 ISOL VLV INDICATING LIGHT	SI	I
1-ZL-8808B	SI ACCUM TNK 02 TO RCS COLD LEG 02 ISOL VLV INDICATING LIGHT	SI	I
1-ZL-8808C	SI ACCUM TNK 03 TO RCS COLD LEG 03 ISOL VLV INDICATING LIGHT	SI	I
1-ZL-8808D	SI ACCUM TNK 04 TO RCS COLD LEG 04 ISOL VLV INDICATING LIGHT	SI	I
1-ZL-8809A	RHRS PUMP 01 TO COLD LEG ISOL VLV INDICATING LIGHT	RH	I

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TAG	NOUN NAME	SYSTEM	CAT
1-ZL-8809B	RHRS PUMP 02 TO COLD LEG ISOL VLV INDICATING LIGHT	RH	I
1-ZL-8811A	RHR PUMP 01 SUMP CTRL VLV INDICATING LIGHT	RH	I
1-ZL-8811B	RHR PUMP 02 SUMP CTRL VLV INDICATING LIGHT	RH	I
1-ZL-8812A	RHR PUMP 01 TO RWST ISOL VLV INDICATING LIGHT	RH	I
1-ZL-8812B	RHR PUMP 02 TO RWST ISOL VLV INDICATING LIGHT	RH	I
1-ZL-8821A	SI PUMP 01 CROSS-CONNECT VLV INDIC LT	SI	I
1-ZL-8821B	SI PUMP 02 CROSS-CONNECT VLV INDIC LT	SI	I
1-ZL-8880	SI [illegible] N2 GAS SUPPLY ISOL VLV IND[illegible] LT	SI	I
1-ZL-APBA1	INDICATING LIGHT - FOR BORIC ACID TRANS PP 01 (STOP)	CS	I
1-ZL-APBA2	INDICATING LIGHT - STOPS BORIC ACID TRANS PP 02	CS	I
1-ZL-APCH1	INDICATING LIGHT - STARTS CENTRIFUGAL CHRG PP 01	CS	I
1-ZL-APCH2	INDICATING LIGHT - FOR CENTRIF CHRG PP 12 - START	CS	I
1-ZL-APRH1	STOP/AUTO/RUN IND LIGHTS - RHR PUMP RM EMER FAN-COIL UNIT 01	VAS	I
1-ZL-APSI1A	STOP/AUTO/START IND LIGHTS-SI PUMP 11	SI	I
1-ZL-APSI2A	STOP/AUTO/START IND LIGHTS-SI PUMP 12	SI	I
1-ZL-PCPR1	STOP/AUTO/START IND LIGHTS - PRZR HTR 01 BACKUP GP-A	RC	I
1-ZL-PCPR2	STOP/AUTO/START IND LIGHTS - PRZR HTR 02 BACKUP GP-B	RC	I
1-ZL-PCPR3	STOP/AUTO/START IND LIGHTS - PRZR HTR BACKUP GP-B	RC	I
1/1-8000A	PRZR PORV BLK VLV	RC	I
1/1-8000B	PRZR PORV BLK VLV	RC	I
1/1-8100	RCP SEAL WTR RET ISOL VLV	CS	I
1/1-8104	EMER BORATE VLV	CS	I
1/1-8105	CHRG PMP TO RCS ISOL VLV	CS	I
1/1-8106	CHRG PMP TO RCS ISOL VLV	CS	I
1/1-8112	RCP SEAL WTR RET ISOL VLV	CS	I
1/1-8143	XS LTDN DIVERT VLV	CS	I
1/1-8145	PRZR AUX SPR VLV	CS	I
1/1-8149A	LTDN ORIFICE ISOL VLV (45 GPM)	CS	I
1/1-8149B	LTDN ORIFICE ISOL VLV (75 GPM)	CS	I
1/1-8149C	LTDN ORIFICE ISOL VLV (75 GPM)	CS	I
1/1-8351A	RCP 1 SEAL WTR INJ VLV	CS	I
1/1-8351B	RCP 2 SEAL WTR INJ VLV	CS	I
1/1-8351C	RCP 3 SEAL WTR INJ VLV	CS	I

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TAG	NOUN NAME	SYSTEM	CAT
1/1-8351D	RCP 4 SEAL WTR INJ VLV	CS	I
1/1-8716A	RHRP 1 XTIE VLV	RH	I
1/1-8716B	RHRP 2 XTIE VLV	RH	I
1/1-8801A	CCP SI ISOL VLV ORC	CS	I
1/1-8801B	CCP SI ISOL VLV ORC	CS	I
1/1-8804A	RHRP 1 TO CCP SUCT VLV	CS	I
1/1-8804B	RHRP 2 TO SIP SUCT VLV	CS	I
1/1-8807A	SI<->CHRG SUCT HDR XTIE VLV	SI	I
1/1-8807B	SI<->CHRG SUCT HDR XTIE VLV	SI	I
1/1-8808A	ACCUM 1 INJ VLV	SI	I
1/1-8808B	ACCUM 2 INJ VLV	SI	I
1/1-8808C	ACCUM 3 INJ VLV	SI	I
1/1-8808D	ACCUM 4 INJ VLV	SI	I
1/1-8809A	RHR TO CL 1 & 2 INJ ISOL VLV	RH	I
1/1-8809B	RHR TO CL 3 & 4 INJ ISOL VLV	RH	I
1/1-8811A	CNTMT SMP TO RHRP 1 SUCT ISOL VLV ORC	RH	I
1/1-8811B	CNTMT SMP TO RHRP 2 SUCT ISOL VLV	RH	I
1/1-8821A	SIP 1 XTIE VLV	SI	I
1/1-8821B	SIP 2 XTIE VLV	SI	I
1/1-8835	SI TO CL 1 & 4 INJ ISOL VLV	SI	I
1/1-8880	SI/PORV ACCUM N2 ISOL VLV ORC	SI	I
1/1-APBA1	BA XFER PMP 1	CS	I
1/1-APBA2	BA XFER PMP 2	CS	I
1/1-APCH1	CCP 1	CS	I
1/1-APCH2	CCP 2	CS	I
1/1-APPD	PDP	CS	I
1/1-APRH1	RHRP 1	RH	I
1/1-APRH2	RHRP 2	RH	I
1/1-APSI1	SIP 1	SI	I
1/1-APSI2	SIP 2	SI	I
1/1-CIPAA1	CNTMT ISOL-PHASE A/CNTMT VENT ISOL MAN ACT	ES	I
1/1-CIPBA1A	CS/CNTMT ISOL-PHASE B MAN ACT	ES	I
1/1-CIPBA1B	CS/CNTMT ISOL-PHASE B MAN ACT	ES	I
1/1-CIPBA2A	CS/CNTMT ISOL-PHASE B MAN ACT	ES	I
1/1-CIPBA2B	CS/CNTMT ISOL-PHASE B MAN ACT	ES	I
1/1-CSRB	CS RESET	CT	I
1/1-LCV-0459	LTDN ISOL VLV	CS	I
1/1-LCV-0460	LTDN ISOL VLV	CS	I
1/1-PCPR1	PRZR BACKUP HTR GROUP A	RC	I
1/1-PCPR2	STOP/AUTO/START CTRL SW PRZR HTR 02 BACKUP GP-B	RC	I
1/1-PCPR3	PRZR BACKUP HTR GROUP D	RC	I
1/1-PCPX1	RCP 1	RC	N
1/1-PCPX2	RCP 2	RC	N
1/1-PCPX3	RCP 3	RC	N
1/1-PCPX4	RCP 4	RC	N
1/1-PCV-0455A	PRZR PORV	RC	I
1/1-PCV-0455A	PRZR PORV	RC	I

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TAG	NOUN NAME	SYSTEM	CAT
1/1-PCV-0456	PRZR PORV	RC	I
1/1-PCV-0456	PRZR PORV	RC	I
1/1-RTBAL	LIGHT CB-07	CR	I
1/1-RTBBL	LIGHT CB-07	CR	I
1/1-RTC	RX TRIP BKR	ES	I
1/1-RWSTB	RHR AUTO SWOVR RESET	SI	I
1/1-SIA1	SI MAN ACT	ES	I
1/1-SIA2	SI MAN ACT 1/1 SIA2	ES	I
1/1-SIRA	SI RESET	SI	I
1/1-SIRB	SI RESET	SI	I
CP1-ECPRCR-01	SOLID STATE SAFEGUARDS SYSTEM SEQUENCER CABINET 1-CR-01	ES	I
CS-1A2-1	INCOMING BKR 1A2-1 CONTROL SWITCH	EPA	N
CS-1B1-1	INCOMING BKR 1B1-1	EPB	N
CS-1B2-1	INCOMING BKR 1B2-1	EPB	N
CS-1DG1E	DG 1 EMER START/STOP	DG	I
CS-1DG1N	HAND SWITCH	DG	I
CS-1EA1-1	INCOMING BKR 1EA1-1 CONTROL SWITCH	EPA	I
CS-1EA1-2	INCOMING BKR 1EA1-2 CONTROL SWITCH	EPA	I
CS-1EB3-1	INCOMING BKR 1EB3-1	EPB	I
CS-1EB4-1	INCOMING BKR 1EB4-1	EPB	I
F-1EG1	DG 1 FREQ	DG	I
F-1EG2	DG 2 FREQ	DG	I
V-1EA1-1	BUS 1EA1 VOLT	EPA	I
V-1EA2-1	BUS 1EA2 VOLT	EPA	I
V-1EG1	DG 1 VOLT	DG	I
V-1EG2	DG 2 VOLT	DG	I
W-4XD/1G	WATT TRANSDUCER-GEN 1G	GE	N
WH/1EG1	A.C. WATTHOUR METER	DG	I
X-HS-5805A	SFP HX & PMP RM FN CLR FN 1	VAF	I
X-HS-5806A	SFP HX & PMP RM FN CLR FN 2	VAF	I
X-HS-5825A	CR MU AIR SPLY FN 37 & SUCT DMPR	VAR	I
X-HS-5828A	CR MU AIR SPLY FN 38 & SUCT DMPR	VAR	I
X-HS-5855	CR EXH FN 1	VAR	I
X-HS-5856	CR EX FN 2	VAR	I
X-HS-5857	CR KTCHN & TOIL EXH FN 3 & EXH DMPR	VAR	I
X-HS-5858	CR KTCHN & TOIL EXH FN 4 & EXH DMPR	VAR	I
X-ZL-5350A	REACTOR MAKEUP WTR PMP IND LITE	DD	I

CONTAINMENT REVIEW

FOR

COMANCHE PEAK STEAM ELECTRIC STATION

SEISMIC IPEEE

Attachment B

CONTAINMENT REVIEW
FOR
COMANCHE PEAK STEAM ELECTRIC STATION
SEISMIC IPEEE

1. INTRODUCTION

The purpose of this work is to document the containment review required in support of the IPEEE seismic evaluation for Comanche Peak Steam Electric Station. A review of the work done for the IPE internal events systems and containment performance analyses was conducted to identify systems and components associated with containment performance that should be evaluated in the seismic margin containment walkdown. Consistent with the methodology developed in EPRI NP-6041 for the SSEL development, it is assumed that the seismic event is equivalent in magnitude to the Safe Shutdown Earthquake (SSE) and that it is accompanied by an extended loss of offsite power and a primary coolant leak equivalent to a one-inch pipe break, a Very Small Break LOCA. the systems that enhance containment performance in mitigating the consequences of these events through containment cooling and isolation were reviewed.

2. REQUIREMENTS AND SCOPE OF THE CONTAINMENT REVIEW FOR CPSES

The purpose and scope of this review are discussed in NUREG-1407, 'Procedural and Submittal Guidance for the Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities', Section 3.2.6. These are stated as follows:

> The primary purpose of the evaluation for a seismic event is to identify vulnerabilities that involve early failure of containment functions. These include containment integrity, containment isolation, prevention of bypass functions, and some specific systems depending upon a containment design (e.g., igniters, suppression pools, ice baskets). The analyses performed for internal events IPE should be used to determine the scope of systems for the examination.
>
> Each licensee should develop a plan to address containment performance during a seismic event consistent with the above-defined purpose. Additional guidance (no requirements implied) on extending margin-type approaches to obtain containment insights is contained in Budnitz 1991a and 1991b, and Reed, et al., 1990. Some general guidance is provided here based on past PRA experience and some generic capacity estimates of typical components involved in containment systems. From a survey of past PRAs (Amico,1989), it appears that high-consequence sequences involve gross structural failure of the containment itself or failure of major equipment

> or structures within the containment at very high accelerations (HCLPF values greater that 0.5g) and isolation failure due to seismically induced relay chatter.
>
> Generally, containment penetrations are seismically rugged; a rigorous fragility analysis is needed only at review levels greater than 0.3g, but a walkdown to evaluate for unusual conditions (e.g., spacial interactions, unique penetration configurations) is recommended. An evaluation of the backup air systems of the equipment hatch and personnel lock that employs inflatable seals should be performed at all review levels. Also, some penetrations need cooling, and the possibility and consequence of cooling loss caused by an earthquake should be considered.
>
> Valves involved in the containment isolation systems are expected to be seismically rugged (NUREG/CR 4734). A walkdown to ensure that they are similar to test data and have known high capacities and that there are no spacial systems interactions will suffice. Seismic failures of actuation and control systems are more likely to cause isolation system failures and should be included in the examination. For valves relying on a backup air systems, the air system should also be included in the seismic examination.
>
> Components of the containment heat removal/pressure suppression functional system that are not included elsewhere and are not known to have high capacities should be examined. An example of such a component might be a fan cooler unit supported on isolator shims. The walkdown should include examination of such components and their anchorages. Similarly, support systems and other systems interaction effects (e.g., relay chatter) should be examined as applicable.

For a reduced-scope plant utilizing the EPRI margins evaluation approach described in EPRI NP-6041, an evaluation of the containment per se is not required. However, the NRC Staff stated in response to a recommendation that the containment performance evaluation be eliminated for reduced scope plant that

> The Staff is still recommending retention of the walkdown of containment systems <u>necessary to prevent early failures</u> because the walkdown will <u>identify anchorage and spacial interaction problems</u> that can occur. Such a review of containment is consistent with the defense-in-depth philosophy adopted in other parts of this program. [emphasis added] (Reference NUREG-1407, Appendix D)

Based on the foregoing, the scope of the containment performance review for CPSES was determined to be as follows:

> A walkdown of certain containment systems (as described below) required to prevent

early containment failures for the purpose of identifying anchorage and spacial systems interaction problems. The systems are:

Containment Spray System (not including the chemical addition portion) modeled in the IPE

Containment Isolation System as modeled in the IPE (not including SGTR considerations)

The containment structure and containment internal structures will not be evaluated. Fan coolers will not be evaluated as these are not required for success of the containment.

3. CONTAINMENT REVIEW

Some of the information presented in the IPE Back-End report and in the FSAR relating to the containment is presented here for purposes of familiarization with the containment design features and containment systems. Particular attention is given to the Containment Spray System and the Containment Isolation System as discussed above. First a brief description of the important design features of the containment itself is given.

3.1 Containment Design and Structures

The CPSES containment is a large, dry, reinforced concrete structure with approximately 3 million cu. ft. volume and a 50 psig (64.7 psia) design pressure. This section contains an overview of the structure and a description of the reinforcements, liner, and penetrations.

Overview of the CPSES Containment Structure

The Comanche Peak containment is designed as a seismic Category I structure. The containment structure is a fully continuous, steel-lined reinforced concrete structure, consisting of a vertical right cylinder with a flat base and a hemispherical dome. It is supported on an essentially flat foundation with a reactor cavity pit. A welded steel liner is attached to the entire inside surface of the containment (walls, dome and mat) with anchors to ensure a high degree of leak-tightness. The design objective is to provide vapor containment and limit leakage of radioactive material which might be released from the core during a design basis accident. It also protects the RCS from extreme environmental conditions including tornados and external missiles.

The containment structure consists of the following:

- A cylindrical wall (internal diameter of 135 ft 0 in.), measuring 195 ft from the top of the base to the springline of the dome with a thickness of 4 ft 6 in.

- A hemispherical dome with a thickness of 2 ft 6 in. The inside radius of the dome is equal to the inside radius of the cylinder, so that the discontinuity at the springline due to the change in the thickness is on the outside surface.

- A flat concrete foundation base mat with a thickness of 12 ft 0 in.

Reinforcements

The principal reinforcement used in the containment shell (mat, walls, and dome) are No. 18 bars, made continuous at splices by the use of cadweld connections. The reinforcing steel pattern in the cylindrical wall consists of vertical bars (inside and outside faces), horizontal hoop bars (also at each face) and 45 degree diagonal bars in each direction, near the outside face. The dome reinforcement consists of top and bottom meridional layers of rebars, extending from the cylindrical wall vertical bars. Circumferential hoop bars are provided in the top and bottom layers of the dome. The meridional reinforcement terminated at the apex of the dome is anchored by cadwelding the end of the rebar to a fabricated steel ring assembly.

At penetration openings, reinforcing steel is generally bent around the openings; supplementary bars are provided around the opening when required by design. At the major penetrations (i.e., the Personnel Lock and the Equipment Hatch) some of the wall reinforcement is terminated at the opening by cadwelding steel plates on the end of the bar. Additional reinforcing is provided around these openings to carry stress concentrations and make redistributions at these openings.

The foundation mat is reinforced with top and bottom layers of bars.

Liner

The entire inside surface is lined with welded steel 3/8 inch thick at the wall, 1/2 inch in the dome. A 1/4 inch thick plate is used on top of the foundation mat and covered with a 2 ft 6 in. concrete slab, the top of which forms the floor of the containment. Liner chase channels are provided at liner seams which, after construction, are inaccessible for other means of leak tightness examination. The liner steel plates on the wall and dome are anchored into the concrete with 5/8 in. by 6 3/8 in. long headed, welded studs. The studs in the cylindrical wall and dome are spaced approximately 12 inches each way. The vertical wall liner is anchored at the foundation mat. The bottom liner is installed after foundation mat construction and is welded at seams to structural members embedded in the top of the mat. The embedded structural members are approximately 8 to 10 ft apart. Locally thickened liner plate sections are provided at penetrations, at major pipe and duct support attachments and at the bottom of the cylindrical wall's steel liner.

Containment Penetrations

From the perspective of severe accidents, the CPSES containment penetrations can be divided into the four categories: Large Opening Penetrations, Purge and Vent System Isolation Valves, Piping Penetrations and Electrical Penetration Assemblies. These four categories of penetrations were examined in the IPE, and for the accidents studied, it was concluded that the CPSES penetrations are not likely to fail before the ultimate capacity of the containment is reached. Penetrations will not be walked down but will be walked-by with the associated isolation valve walkdown.

3.2 Containment Systems

The key systems associated with the containment are the safeguards and isolation systems.

3.2.1 Safeguards and Isolation Systems

The containment safeguards systems are the Containment Spray System (CT) and the Fan Coolers (FC) that are part of the Containment Air Cooling and Recirculation System (CACRS). The Containment Isolation System (CZ) is a system designed to provide integrity of the containment boundary. These systems are discussed in detail in the following sections.

Containment Spray System (CT)

The Containment Spray System is discussed in this section and a diagram of the system is shown in Figure 3.2.1.

The CT system consists of two separate, independent, and full capacity trains. Each train contains two spray pumps, one heat exchanger, two chemical eductors, spray headers, spray nozzles, associated piping, valves, and instrumentation. Failure of the CT system does not result in an initiating event.

The function of the CT system is to maintain the containment pressure within its design limit after the following initiating events:

- Loss-Of-Coolant-Accident (LOCA)
- Main Steam Line Break (MSLB) inside containment
- Feedwater Line Break (FWLB) inside containment

The CT pumps are provided with suction lines from both the Refueling Water Storage Tank (RWST) and the containment sumps. Thus, the system is capable of providing the containment with short term (injection mode) and long term (recirculation mode) cooling. Each pump train takes suction from the RWST via normally open motor-operated valve 1-HV-4758/4759. The CT system shares the RWST with the Safety Injection System (SI), Residual Heat Removal System (RH) and Chemical and Volume Control System (CS). In addition, the RH, SI, and CT systems share RWST isolation valve 1SI-047. Following depletion of the RWST, the suction of the CT pump train is switched over to its respective containment sump via normally closed motor-operated valve 1-HV-4782/4783. The RH and CT systems share the containment sumps.

The design flow rate of each CT pump is 3000 gpm at 260 psid. The design of the system is such that both pumps per train are required to deliver enough flow to the spray header to remove an adequate amount of heat from the containment atmosphere. The pumps are powered from separate Class 1E 6.9kV buses. Each CT pump room contains two spray pumps and two associated room cooler units to ensure that the ambient room temperature remains within equipment qualification limits. The room cooler units are powered by Class 1E 480V Motor Control Centers (MCC) and are supplied chilled water by the Safety Chilled Water System (CH). CT pump miniflow protection is provided by normally open motor-operated valve 1-FV-4772-1/4772-2/4773-1/4773-2. The pump seals are cooled by the Component Cooling Water (CC) system; the pump bearings are cooled by the Station Service Water (SW) system. The pumps are actuated by a Safety Injection ("S") signal. The pumps also receive a confirmation start signal when containment pressure reaches the hi-3 ("P") setpoint. Following the "S" signal, the pumps operate in miniflow until the hi-3 setpoint is reached. At that point, the spray header isolation valves 1-HV-4776,4777 open and the miniflow valves close.

Each pump is equipped with as associated chemical eductor which delivers a 28-30 weight percent solution of sodium hydroxide to the pump suction. One chemical additive tank provides gravity flow to each eductor venturi section. Success of the chemical addition system is not considered essential for system operation.

Each pump discharges to a header which routes flow to its respective heat exchanger. The CC system supplies cooling to the shell side of the heat exchanger via normally closed motor-operated valve 1-HV-4574/4575. The valve is opened automatically by a "P" signal. Upon discharge from the heat exchanger, flow is routed to the spray header via normally closed motor-operated isolation valve 1-HV-4776/4777. The spray headers route flow to ring headers located in four regions of the containment. Each header contains a restriction orifice which balances the flow to each ring.

Technical specifications require the CT pumps and active valves to be operability tested quarterly. During the pump test, CT flow is recirculated back to the RWST via normally locked-closed test header isolation valve 1CT-050/049. Among the valves stroke tested are RWST suction isolation valve 1-HV-4758/4759, containment sump suction isolation valve 1-HV-4782/4783, and spray header isolation valve 1-HV-4776/4777. For the duration of the testing, the CT train remains inoperable. In addition, the CT train is disabled prior to quarterly Engineers Safety Features Actuation System (ESFAS) slave relay actuation testing in order to prevent pump damage.

Containment Fan Coolers

The fan coolers are part of the Containment Air Cooling and Recirculation System (CACRS). The CACRS for each unit consists of four 33-1/3 percent capacity cooling units and fans. The cooling unit consists of eight cooling coils. During normal operation, three out of four cooling units and fans will operate. The CACRS is not required to operate following a Design Basis Accident (DBA). Following a LOCA, the "S" signal shuts the fans down and closes the fan discharge dampers. Following a loss-of-offsite power, the Blackout Signal (BOS) automatically starts the fans. The CACRS fans and dampers are each powered from two separate and independent electrical sources Train A and B of Class 1E AC and DC buses, respectively. The non-safety related chilled water system provides cooling to the CACRS cooling coils.

Fan cooler operation is not credited in the CPSES IPE. However, the benefits of fan coolers were evaluated for potential use in accident management. The potential impact of fan coolers on the severe accident progression is twofold: (1) they can extend the RWST duration by preventing or delaying the containment pressure from reaching the spray set point; and (2) fan coolers can prevent containment failure due to overpressure. These advantages notwithstanding, fan coolers were not credited because: (1) fans at CPSES are cooled by chilled water which is isolated on a containment isolation signal; (2) restarting the fans would require operator intervention which is not proceduralized for severe accident situations, and (3) the fans are not qualified for operation in a severe accident environment. Therefore, fans are assumed to operate only until an SI signal is generated, since this is the expected boundary condition for the accident sequence development.

Containment Isolation System (CZ)

The design objective of the CZ is to allow normal and emergency passage of fluids through the containment boundary while preserving the integrity of the boundary. The CZ logic is part of the Engineered Safety Features Actuation System. The CZ was modeled in the Front-End of the IPE. For completeness it should be mentioned that the CZ includes the following subsystems:

- Steam Line Isolation - closes the main steam isolation valves (MSIV) and main steam drain pot isolation valve. Once steam line isolation is initiated, the ESFAS output relays are latched and must be manually reset. Resetting the steam line isolation signal does not cause the valves to re-open.
- Main Feedwater Line Isolation - closes all feedwater isolation valves. Once feedwater line isolation is initiated, the ESFAS output relays are latched and must be manually reset. Resetting the feedwater isolation signal does not cause the valves to re-open.
- Containment Isolation Phase A - closes all non-essential process lines

penetrating the containment. Containment Isolation Phase A is initiated by the Safety Injection Signal or manual actuation of either of two control switches per train for Phase A Isolation on the control board. Once Containment Isolation Phase A is initiated, the ESFAS output relays are latched and must be manually reset. Resetting the Containment Isolation Phase A initiation signal does not cause the isolation valves to re-open.

- Containment Isolation Phase B - closes all remaining process lines, with the exception of those serving Engineered Safety Features functions penetrating the containment. Containment Isolation Phase B is initiated by a "P" signal derived from the containment spray actuation signal or by manual activation of both of the two control switches per train for Containment Spray Actuation on the control board. Once Containment Isolation Phase B is initiated, the ESFAS output relays are latched and must be manually reset. Resetting the Containment Isolation Phase B initiation signal does not cause the isolation valves to re-open.

- Containment Ventilation Isolation (CVI) - closes all ventilation lines connected directly to the containment atmosphere. CVI is initiated by automatic or manual initiation of Containment Isolation Phase A or manual initiation of Phase B to limit radioactive emissions during accident/post-accident operations. To limit radioactive emissions during normal operation, the CVI is also initiated by high containment airborne radiation. Once the CVI is initiated, the ESFAS output relays are latched and must be manually reset. Resetting the CVI does not cause the isolation valves to re-open.

Containment penetrations and their respective isolation schemes can be classified as:

- Type A - Lines that form part of the reactor coolant pressure boundary (RCPB). These penetrations are provided with one of the following isolation schemes:
  - One locked-closed isolation valve inside and one locked-closed valve outside the containment.
  - One automatic isolation valve inside and one locked-closed isolation valve outside the containment.
  - One locked-closed isolation valve inside and one automatic isolation valve outside the containment.
  - One automatic isolation valve inside and one automatic isolation valve outside the containment.

- Type B - Lines that connect directly to the containment atmosphere. These penetrations are provided with isolation schemes identical to those set forth for Type A penetrations as well as the following additional isolation schemes:

  - The redundancy requirement is satisfied by having two isolation barriers in series, one on each side of Type A and Type B penetrations.
  - One blind flange inside the containment and one locked-closed isolation valve outside the containment.
  - One blind flange inside the containment and one blind flange outside the containment.

- Type C - Lines that are part of a closed system, i.e., lines that are neither part of the RCPB nor connected to the containment atmosphere. These penetrations are provided with at least one containment isolation valve that is either automatic, locked-closed, or capable of remote-manual operation. These valves are located outside the containment and as close to it as practicable.

- Special Containment Isolation Provisions - Special provisions are provided for certain valves. Valves in lines required to operate post accident are designed to remain open or be opened following the accident, but consistent with containment isolation requirements, they can be closed by remote-manual operation from the control room.

There are four instrument lines that penetrate the containment that are required to remain functional following a LOCA or steam line break. Isolation is provided by means of sealed bellows that are connected to a fluid filled tube. The arrangement consists of a double isolation barrier. If the instrument line breaks outside the containment, leakage of the containment atmosphere is prevented by virtue of the sealed bellows. If the instrument line breaks inside the containment, leakage is prevented by a leak-tight diaphragm installed in the pressure instrument that is designed to withstand the full containment design pressure.

3.3 Containment Systems Review

As noted above the two systems that are required to be evaluated for this review are the Containment Spray System and the Containment Isolation System. A method similar to that used to determine the SSEL components was used for these systems. That is, the minimum success criteria for each system were determined from a review of the systems notebooks prepared for the IPE, then the logic diagrams were followed through to determine the segments, and thus the components required for success. The determination of these segments is presented here.

3.3.1 Containment Spray System Components Determination

4. RESULTS

The results of this review are presented in the Containment System Report, Table 4-1. It should be noted that support systems that are required for operation of these systems but which are already included in the SSEL are not duplicated here. In addition relays and some subcomponents are not included in the report consistent with the approach used in the development of the SSEL. A subset of components in the Containment Systems Report is included in the Containment Walkdown List, Table 4-2.

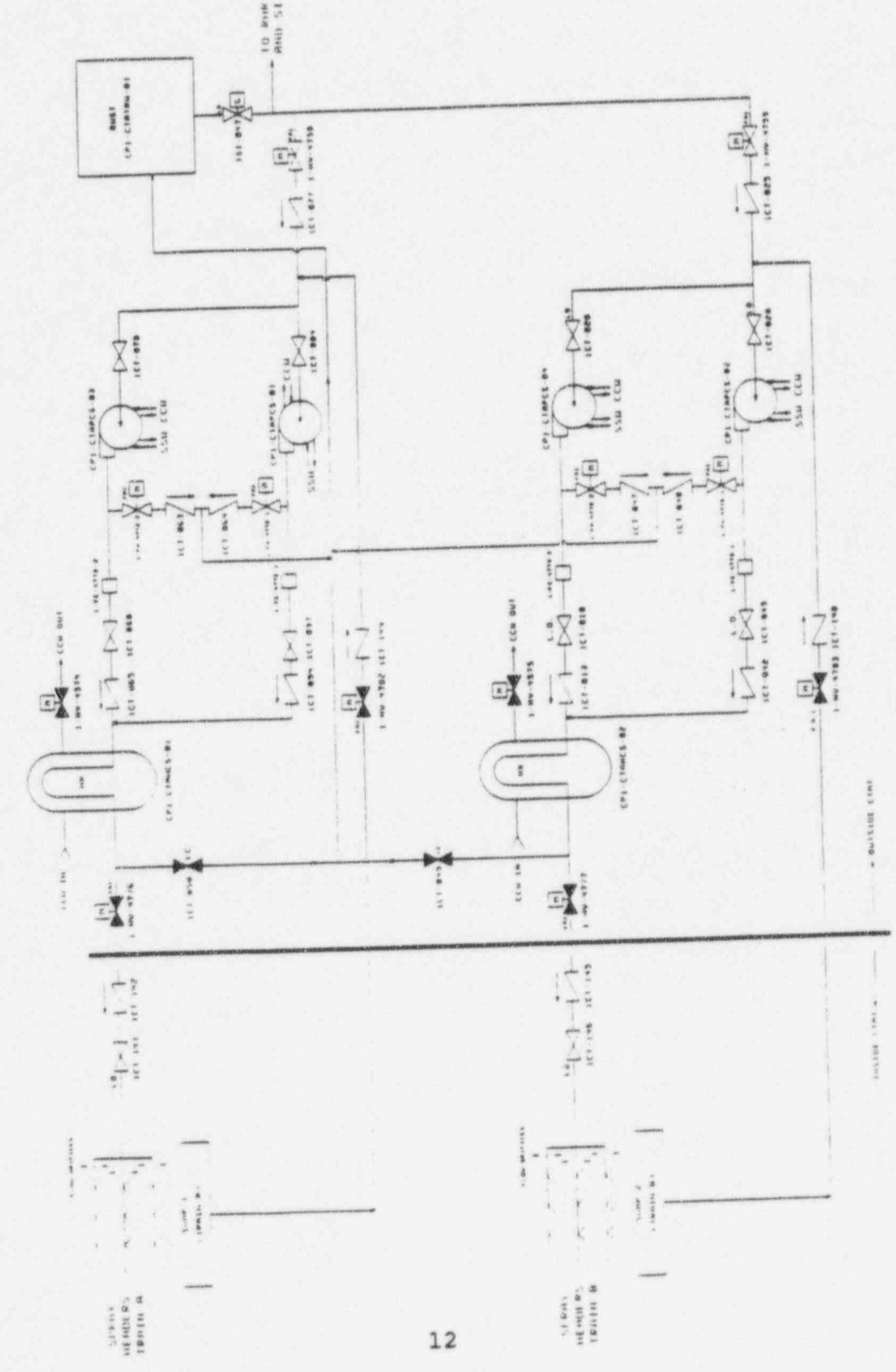

Figure 3.2.1: Containment Spray System

TABLE 4-1
CONTAINMENT SYSTEMS REPORT
SEISMIC IPEEE

ROOM	BLDG	SYS	TAG	NOUN NAME	CAT	SUMM PACK
1-054	SG	CC	1-FIS-4542	CT PUMPS 1-01 & 1-03 SEAL COOLER CCW OUTLET FLOW INDICATING SWITCH	I	MS-0618-001
1-054	SG	CC	1CC-0098	CT PMP 1-01 SL CLR CCW UPSTRM RET ISOL VLV	I	MS-20A.1-015
1-054	SG	CC	1CC-0266	CT PMP 1-01 SL CLR CCW DNSTRM RET ISOL VLV	I	MS-20A.1-015
1-054	SG	CC	1CC-0280	CT PMP 1-01/1-03 SL CLR CCW RET FLO IND SW 4542 UPSTRM ISOL VLV	I	MS-20A.1-015
1-054	SG	CC	1CC-0281	CT PMP 1-01/1-03 SL CLR CCW RET FLO IND SW 4542 DNSTRM ISOL VLV	I	MS-20A.1-015
1-054	SG	CHS	CP1-CHFHCH-21	CT PUMP RM EMER FAN COIL UNIT 1-11 CHILLED WATER SPLY FLEX HOSE 1-21	I	CPD-0322-001
1-054	SG	CHS	CP1-CHFHCH-22	CT PUMP RM EMER FAN COIL UNIT 1-11 CHILLED WATER RET FLEX HOSE 1-22	I	CPD-0322-001
1-054	SG	CHS	CP1-CHFHCH-25	CT PUMP RM EMER FAN COIL UNIT 1-13 CHILLED WATER RET FLEX HOSE 1-25	I	CPD-0322-001
1-054	SG	CHS	CP1-CHFHCH-26	CT PUMP RM EMER FAN COIL UNIT 1-13 CHILLED WATER SPLY FLEX HOSE 1-26	I	CPD-0322-001
1-054	SG	CT	CP1-CTAPCS-01	CONTAINMENT SPRAY PUMP 1-01	I	
1-054	SG	CT	CP1-CTAPCS-03	CONTAINMENT SPRAY PUMP 1-03	I	
1-054	SG	VAS	CP1-VAAUSE-11	CONTAINMENT SPRAY PUMP 1-01/1-03 ROOM FAN COOLER FAN 1-11	I	MS-0081-004
1-054	SG	VAS	CP1-VAAUSE-13	CONTAINMENT SPRAY PUMP 1-01/1-03 ROOM FAN COOLER FAN 1-13	I	MS-0081-004
1-056A	SG	CHS	1CH-0364	CT PMP EMER FN COIL UNIT 1-13 CH WTR SPLY ISOL VLV	I	MS-20A.1-014
1-056A	SG	CHS	1CH-0365	CT PMP EMER FN COIL UNIT 1-13 CH WTR RET ISOL VLV	I	MS-20A.1-014

TABLE 4-1
CONTAINMENT SYSTEMS REPORT
SEISMIC IPEEE

ROOM	BLDG	SYS	TAG	NOUN NAME	CAT	SUMM PACK
1-056B	SG	CC	1CC-0091	CT PMP 1-03 SL CLR CCW UPSTRM RET ISOL VLV	I	MS-20A.1-015
1-056B	SG	CC	1CC-0094	CT PMP 1-03 SL CLR CCW SPLY ISOL VLV	I	MS-20A.1-015
1-056B	SG	CC	1CC-0095	CT PMP 1-01 SL CLR CCW SPLY ISOL VLV	I	MS-20A.1-015
1-056B	SG	CC	1CC-0265	CT PMP 1-03 SL CLR CCW DNSTRM RET ISOL VLV	I	MS-20A.1-015
1-056B	SG	CHS	1CH-0366	CT PMP EMER FN COIL UNIT 1-11 CH WTR SPLY ISOL VLV	I	MS-20A.1-014
1-056B	SG	CHS	1CH-0367	CT PMP EMER FN COIL UNIT 1-11 CH WTR RET ISOL VLV	I	MS-20A.1-014
1-056B	SG	SW	1SW-0367	CT PMP 1-01 BRG CLR SSW OUT THROT VLV	I	MS-20A.1-011
1-056B	SG	SW	1SW-0368	CT PMP 1-01 BRG CLR SSW IN ISOL VLV	I	MS-20A.1-011
1-056B	SG	SW	1SW-0369	CT PMP 1-03 BRG CLR SSW OUT THROT VLV	I	MS-20A.1-011
1-056B	SG	SW	1SW-0370	CT PMP 1-03 BRG CLR SSW IN ISOL VLV	I	MS-20A.1-011
1-056B	SG	SW	1SW-0399	CT PMP 1-01/1-03 BRG CLR SSW IN VLV	I	MS-20A.1-029
1-056B	SG	SW	CP1-SWSRCS-01	CONTAINMENT SPRAY PUMPS 1-01/1-03 BEARING COOLER SSW INLET STRAINER	I	MS-0029A-001
1-062F	SG	CT	1CT-0063	CT PMP 1-03 MINIFLO LN CHK VLV	I	
1-062F	SG	CT	1CT-0064	CT PMP 1-01 MINIFLO LN CHK VLV	I	
1-062H	SG	CT	1CT-0065	CT PMP 1-03 DISCH CHK VLV	I	
1-065	SG	CT	1-HV-4782	CNTMT SMP TO CT PMP 1-01/1-03 SUCT ISOL VLV	I	
1-065	SG	CT	1CT-0149	CNTMT SMP TO CT PMP 1-01/1-03 CHK VLV	I	
1-067	SG	CT	1-FV-4772-1	CT PMP 1-01 RECIRC VLV	I	
1-067	SG	CT	1-FV-4772-1	CT PMP 1-01 RECIRC VLV	I	
1-067	SG	CT	1-FV-4772-2	CT PMP 1-03 RECIRC VLV	I	
1-067	SG	CT	1-FV-4772-2	CT PMP 1-03 RECIRC VLV	I	

TABLE 4-1
CONTAINMENT SYSTEMS REPORT
SEISMIC IPEEE

ROOM	BLDG	SYS	TAG	NOUN NAME	CAT	SUMM PACK
1-067	SG	CT	1CT-0050	CT PMPS 1-01/1-03 DISCH TST LN ISOL VLV	I	
1-067	SG	CT	1CT-0060	CT PMP 1-03 DISCH ISOL VLV	I	
1-067	SG	CT	1CT-0077	RWST TO CT PUMP 1-01/1-03 SUCT CHK VLV	I	
1-067	SG	CT	1CT-0078	CT PMP 1-03 SUCT ISOL VLV	I	
1-067	SG	CT	1CT-0084	CT PMP 1-01 SUCT ISOL VLV	I	
1-067	SG	CT	1CT-0097	CT PMP 1-01 DISCH ISOL VLV	I	
1-069	SG	CT	1CT-0094	CT PMP 1-01 DISCH CHK VLV	I	
1-069	SG	CT	CP1-CTAHCS-01	CONTAINMENT SPRAY HEAT EXCHANGER 1-01	I	
1-070	SG	CC	1-HV-4574	CT HX 1-01 CCW RET VLV	I	MS-0600-033
1-070	SG	CC	1CC-0107	CT HX 1-01 CCW SPLY ISOL VLV	I	MS-0020C-006
1-076	SG	CT	1-HV-4758	RWST TO CT PMP 1-01/1-03 SUCT VLV	I	
1-077A	SG	WP	1-LCV-1003	LWPS RCDT 1-01 LVL CTRL VLV	I	
1-077B	SG	CT	1-HV-4776	CT HX 1-01 OUT VLV	I	
1-088	SG	AM	1-PT-0934	UNIT 1 CONTAINMENT PRESSURE TRANSMITTER 0934 PROT CHAN IV	I	
1-154A	RB	CI	1CI-0030	U1 INST AIR HDR TO U1 CNTMT CHK VLV	I	MS-20B.1-004
1-154A	RB	CS	1-8160	U1 LTDN CNTMT IRC ISOL VLV	I	WECM-0034
1-154A	RB	CT	1CT-0142	U1 CT TRN A HDR IRC CHK VLV	I	
1-154D	RB	VD	1-HV-5158	RX CAV SMP & CNTMT SMP 1-01/1-02 DISCH HDR IRC ISOL VLV	I	
1-155A	RB	CC	1-HV-4725	CNTMT CCW DRN TK 1-02 IRC ISOL VLV	I	MS-0600-018
1-155A	RB	CT	1CT-0141	U1 CT TRN A HDR IRC ISOL VLV	I	
1-155O	RB	VAC	1-HV-5549	U1 CNTMT PRESS RLF SYS IRC ISOL DMPR AO 5549	I	

TABLE 4-2
CONTAINMENT WALKDOWN LIST
SEISMIC IPEEE

ROOM	BLDG	SYS	TAG	NOUN NAME	CAT	SUMM PACK
1-054	SG	CC	1-FIS-4542	CT PUMPS 1-01 & 1-03 SEAL COOLER CCW OUTLET FLOW INDICATING SWITCH	I	MS-0618-001
1-054	SG	CC	1CC-0098	CT PMP 1-01 SL CLR CCW UPSTRM RET ISOL VLV	I	MS-20A.1-015
1-054	SG	CC	1CC-0266	CT PMP 1-01 SL CLR CCW DNSTRM RET ISOL VLV	I	MS-20A.1-015
1-054	SG	CC	1CC-0280	CT PMP 1-01/1-03 SL CLR CCW RET FLO IND SW 4542 UPSTRM ISOL VLV	I	MS-20A.1-015
1-054	SG	CHS	CP1-CHFHCH-21	CT PUMP RM EMER FAN COIL UNIT 1-11 CHILLED WATER SPLY FLEX HOSE 1-21	I	CPD-0322-001
1-054	SG	CHS	CP1-CHFHCH-22	CT PUMP RM EMER FAN COIL UNIT 1-11 CHILLED WATER RET FLEX HOSE 1-22	I	CPD-0322-001
1-054	SG	CT	CP1-CTAPCS-01	CONTAINMENT SPRAY PUMP 1-01	I	
1-054	SG	VAS	CP1-VAAUSE-11	CONTAINMENT SPRAY PUMP 1-01/1-03 ROOM FAN COOLER FAN 1-11	I	MS-0081-004
1-056B	SG	CC	1CC-0095	CT PMP 1-01 SL CLR CCW SPLY ISOL VLV	I	MS-20A.1-015
1-056B	SG	CHS	1CH-0366	CT PMP EMER FN COIL UNIT 1-11 CH WTR SPLY ISOL VLV	I	MS-20A.1-014
1-056B	SG	CHS	1CH-0367	CT PMP EMER FN COIL UNIT 1-11 CH WTR RET ISOL VLV	I	MS-20A.1-014
1-056B	SG	SW	1SW-0367	CT PMP 1-01 BRG CLR SSW OUT THROT VLV	I	MS-20A.1-011
1-056B	SG	SW	1SW-0368	CT PMP 1-01 BRG CLR SSW IN ISOL VLV	I	MS-20A.1-011
1-056B	SG	SW	1SW-0399	CT PMP 1-01/1-03 BRG CLR SSW IN VLV	I	MS-20A.1-029
1-056B	SG	SW	CP1-SWSRCS-01	CONTAINMENT SPRAY PUMPS 1-01/1-03 BEARING COOLER SSW INLET STRAINER	I	MS-0029A-001
1-062F	SG	CT	1CT-0064	CT PMP 1-01 MINIFLO LN CHK VLV	I	
1-065	SG	CT	1-HV-4782	CNTMT SMP TO CT PMP 1-01/1-03 SUCT ISOL VLV	I	

TABLE 4-2
CONTAINMENT WALKDOWN LIST
SEISMIC IPEEE

ROOM	BLDG	SYS	TAG	NOUN NAME	CAT	SUMM PACK
1-065	SG	CT	1CT-0149	CNTMT SMP TO CT PMP 1-01/1-03 CHK VLV	I	
1-067	SG	CT	1-FV-4772-1	CT PMP 1-01 RECIRC VLV	I	
1-067	SG	CT	1CT-0050	CT PMPS 1-01/1-03 DISCH TST LN ISOL VLV	I	
1-067	SG	CT	1CT-0077	RWST TO CT PUMP 1-01/1-03 SUCT CHK VLV	I	
1-067	SG	CT	1CT-0084	CT PMP 1-01 SUCT ISOL VLV	I	
1-067	SG	CT	1CT-0097	CT PMP 1-01 DISCH ISOL VLV	I	
1-069	SG	CT	1CT-0094	CT PMP 1-01 DISCH CHK VLV	I	
1-069	SG	CT	CP1-CTAHCS-01	CONTAINMENT SPRAY HEAT EXCHANGER 1-01	I	
1-070	SG	CC	1-HV-4574	CT HX 1-01 CCW RET VLV	I	MS-0600-033
1-070	SG	CC	1CC-0107	CT HX 1-01 CCW SPLY ISOL VLV	I	MS-0020C-006
1-076	SG	CT	1-HV-4758	RWST TO CT PMP 1-01/1-03 SUCT VLV	I	
1-077A	SG	WP	1-LCV-1003	LWPS RCDT 1-01 LVL CTRL VLV	I	
1-077B	SG	CT	1-HV-4776	CT HX 1-01 OUT VLV	I	
1-088	SG	AM	1-PT-0934	UNIT 1 CONTAINMENT PRESSURE TRANSMITTER 0934 PROT CHAN IV	I	
1-154A	RB	CI	1CI-0030	U1 INST AIR HDR TO U1 CNTMT CHK VLV	I	MS-20B.1-004
1-154A	RB	CS	1-8160	U1 LTDN CNTMT IRC ISOL VLV	I	WECM-0094
1-154A	RB	CT	1CT-0142	U1 CT TRN A HDR IRC CHK VLV	I	
1-154D	RB	VD	1-HV-5158	RX CAV SMP & CNTMT SMP 1-01/1-02 DISCH HDR IRC ISOL VLV	I	
1-155A	RB	CC	1-HV-4725	CNTMT CCW DRN TK 1-02 IRC ISOL VLV	I	MS-0600-018
1-155A	RB	CT	1CT-0141	U1 CT TRN A HDR IRC ISOL VLV	I	
1-155O	RB	VAC	1-HV-5549	U1 CNTMT PRESS RLF SYS IRC ISOL DMPR AO 5549	I	

APPENDIX B

Comanche Peak Steam Electric Station

Seismic IPEEE

Walkdown Report

COMANCHE PEAK STEAM ELECTRIC STATION

Individual Plant Examination of External Events

Seismic

Walkdown Report

Prepared by: DGPatankar Date: 8/5/94
Reviewed by: Sam Rao 8/5/94
Approved by: 8/5/94

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1. INTRODUCTION

Generic Letter 88-20 Supplement 4 (Reference 1) requests that all utilities perform an Individual Plant Examination of External Events (IPEEE) of their units to identify any severe accident vulnerabilities. The external events included are seismic, internal fire, flooding and "other" events. The Comanche Peak Unit 1 seismic IPEEE walkdowns are summarized in this report.

The NRC has defined three categories of margin requiring varying levels of effort. The three categories are full-scope, focused-scope, and reduced scope. Comanche Peak, with a relatively low seismic hazard and recent vintage design, has been placed in the reduced scope category.

Performance of a reduced-scope seismic IPEEE is not as comprehensive as full-scope or focused-scope examinations; relay evaluation is not required and features are reviewed to the plant design basis rather than beyond the plant safe shutdown earthquake (SSE). The Electric Power Research Institute (EPRI) Seismic Margin methodology described in Generic Letter 88-20 is used for performing the Comanche Peak IPEEE, incorporating enhancements as listed in Appendix 1 of the Generic Letter.

Activities required to complete a reduced-scope seismic IPEEE walkdown are outlined below:

- Develop a primary and alternate safe shutdown success path list (see Section 2).
- Identify the response spectra to be utilized in the performance of the seismic IPEEE. (see Section 3).
- Walkdown preparation such as team selection, review of existing qualification data (see Section 4).
- Perform walkdowns and evaluate findings (see Section 5).
- Summarize conclusions (see Section 6).
- Perform an independent peer review.

2. SUCCESS PATH LIST

TU Electric Nuclear Engineering Risk and Reliability engineers developed the success path list for safe shutdown/accident mitigation equipment for the seismic margin assessment (SMA). The lists includes components on redundant/diverse success paths required for small break loss of coolant accident (SBLOCA) mitigation and containment isolation/cooling. Impact of non-seismic failures and human actions were considered in the selection of success paths and alternatives. Components and systems needed to prevent early failure of containment functions were included in this list. The functions are containment integrity, containment isolation, prevention of bypass functions, and some specific systems depending on a containment design (e.g., igniters, suppression pools). Guidance provided in NUREG-1407 (Reference 2) was followed in the selection of the components for review.

The process involved in development of Safe Shutdown Equipment List (SSEL) and SSEL itself have been included in the Appendix A of the seismic IPEEE report.

3. SEISMIC INPUT

For reduced-scope plants such as Comanche Peak, the SSE ground response spectra and in-structure response spectra are generally used for performing the seismic IPEEE.

Therefore for the seismic evaluation of systems, components and structures listed in SSEL, CPSES plant SSE ground response and in-structure response spectra (Ref. 3) were used as seismic input.

4. WALKDOWN PREPARATION

Walkdown preparation involved assembling walkdown teams, research of applicable design documentation and organizing area walkdown documentation. These activities are outlined in the following sub-sections.

4.1 Selection of Assessment Team

Walkdown teams were assembled by drawing on the resources of two TU Electric organizations and on outside consultant in order to achieve the following Seismic Review Team (SRT) composition:

- A member of the Comanche Peak Design Engineering Organization (DEO), Civil Engineering Department.
- A [illegible]er of the TU Electric Reactor Engineering Risk and Reliability group.
- A representative from EQE Engineering Consultants

Additionally, a representative from operations, radiation protection and other Comanche Peak organizations assisted the SRT on as-needed basis.

The SRT composition ensured each team included engineers with extensive Comanche Peak knowledge and design experience, understanding of the individual plant examination

(IPE) results and associated sequences, and industry experience in Seismic Qualification Utility Group (SQUG) (Reference 4) and EPRI SMA methods (Reference 5). A summary of the SRT qualifications are provided in Table 4-1. Brief resumes of SRT members are included as Attachment 1.

An independent peer review was also performed. The review included a plant walkdown of selected areas, and a review of the overall program plan and program documentation. The resume of the peer reviewer is included in Attachment 1.

4.2 Plant Familiarization & Information Gathering

Prior to commencing the walkdowns, assessment team members collected and reviewed plant information such as system information, plant drawings, schematics, design basis documents, equipment qualification reports and other related information.

Existing seismic equipment qualification documents were reviewed for each walkdown list item in order to gain an understanding of the methods, acceptance criteria and results of the design basis seismic qualification. Such information is contained in Comanche Peak seismic equipment summary packages (SEQSP).

The SEQSP were prepared prior to plant operation in order to ascertain and document the seismic qualification of Comanche Peak Seismic Category I equipment in clear and concise engineering packages. Inputs into the qualification packages included the following:

- Vendor documentation (drawings, shake table test reports, etc.)
- Supplemental calculations
- Specifications
- Station Drawings
- Master Equipment List
- Amendments to documents (i.e., design changes)
- As-installed conditions based on physical walkdowns
- Non-Conformance Reports (and similar documents)
- Anchorage calculations
- Response spectra

Table 4-1
WALKDOWN TEAM MEMBERS

Team Member*	Organization	Expertise	Experience (years)	Training		P.E.
				A-46	IPEEE	
J.P. Conescente	EQE International	Seismic	7	X		X
H.G. Hamzehee	TU Risk and Reliability	PRA	13		X	X
S.D. Karpyak	TU Risk and Reliability	PRA	25	X	X	X
P.N. Passalugo	TU Design Engineering	Seismic	14	X	X	X
D.G. Patankar	TU Design Engineering	Seismic	18	X	X	X
T.R. Roche	EQE International	Seismic	12	X	X	X

* Each SRT included a representative from EQE international, TU Risk and Reliability and TU Design Engineering.

Based on the above inputs, the qualification status was determined and documented in SEQ packages that included a history, resolution of open items and assumptions, references, plant database inputs, and other pertinent information. Key information relative to the seismic IPEEE effort is contained on the seismic qualification review summary (SQRS) and equipment footprint load transmittal (EFLT) sections of the packages.

The SQRS forms summarize the equipment qualification in 6 concise sections:

- Component data such as name, description, location, mounting conditions and function.
- Equipment qualification method such as test, analysis, report number and company that prepared the report.
- Qualification input (seismic input)
- Qualification test information on the test type, input, modeling data and load combinations.
- Qualification Analysis information such as type, input, modeling data, and load combinations.
- Actual equipment comparison of the model tested versus the model installed in the plant.

The EFLT forms document equipment parameters required to determine anchorage footprint loads and contain the anchorage calculation number that demonstrates sufficient anchorage capacity for the postulated loads.

4.3 Walkdown Documentation

The Walkdown Screening and Evaluation Sheets (WSES) were specifically developed to document walkdown and its results based on following key factors.

- Walkdown evaluations are organized on the basis of room/area in Seismic Category I buildings.
- Reduced-Scope nature of SMA review.
- Acceptance criteria is plant FSAR and design basis earthquake (SSE).
- CPSES is a non-SQUG plant of very recent vintage.

The WSES as developed, included four sections: location description, equipment evaluation which included itemized listings of all SSEL qualification documentation, systems interaction effects and signature blocks. These WSES essentially formed the walkdown packages for the room/area. Example of WSES is included as figure 4-1.

Items included on the walkdown SSEL were prescreened prior to performing field investigations as follows:

- Items were grouped by area and general information entered into forms.
- The SEQSP was reviewed in order to gain an understanding of the Seismic Category I qualification process and methods for each items. Supporting analyses and test reports were also reviewed when deemed appropriate by the SRT.
- The SRT verified an anchorage calculation was performed and reviewed the calculations for representative and unique items.
- Basic information such as the SEQSP document number, qualification method (test versus analyses) and anchorage calculation number were entered into the IPEEE walkdown packages.

After Assembling the walkdown packages field reviews were scheduled and coordinated with operations, maintenance and radiation personnel.

Figure 4-1: Example Walkdown Package

Sheet ____of ____

PLANT WALKDOWN SCREEN EVALUATION SHEET

Plant Name: ____________________ Unit: ____________________

A. DESCRIPTION

Walkdown Area Identification

Building: Floor Elevation: Room No.:

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.				Y N U N/A	Y N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. _________ seismically qualified? Y N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U N/A

3. No other interaction concerns? Y N U N/A

Is all above listed equipment in room free from interaction effects? Y N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Figure 4-1: Example Walkdown Package (continued) Sheet ____ of ____

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Floor Elevation: Room No:

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

Are all potential problems satisfactorily addressed? Y N N/A

Is further investigation required? Y N N/A

Comments: ______________________________

D. Evaluated By:

Name: ______________________ Date: ________

Name: ______________________ Date: ________

Name: ______________________ Date: ________

5. WALKDOWN

Walkdown area reviews are outlined in Section 5.1. Walkdown observations and corresponding resolutions are summarized in Section 5.2.

5.1 Area Reviews

Comanche Peak Unit 1 seismic IPEEE walkdowns were performed on an area basis with the primary focus on items listed on the SSEL. In the case of certain categories of items (e.g. valves) that were in large numbers in SSEL, walkdown evaluations were performed on a selected sample. Seismic interaction issues and suspended systems such as piping and raceways were also observed on an area basis to verify that no anomalies existed that could lead to unacceptable performance.

The SRT reviewed components based on the screening guidelines listed in Appendix F to EPRI NP-6041 (Reference 5), considering knowledge gained during the prescreening activity. Since Comanche Peak is of recent vintage and designed to conservative in-structure spectra, many components were observed to be too robust to meet the EPRI screening guidelines. For example, valves sometimes exceeded the experience data operator weight and eccentricity charts, however, operators were mounted on very stout steel support yokes and the piping systems were well supported. It was observed during the prescreening activity that valve yokes were analyzed and/or tested to meet SSE required response spectra at input levels determined by piping system dynamic analyses.

Certain areas or locations were inaccessible due to presence of high radiation/contamination. A documentation review was performed for SSEL items that were inaccessible. To examine potential seismic interaction issues Seismic/Nonseismic Program area matrices were reviewed. These matrices list all source (nonseismic) commodities in the area (room) with respect to their interaction with safety related commodities. Review of this documentation confirmed that inaccessible SSEL components do not have unresolved interactions with source commodities in a particular area (room).

5.2 Walkdowns Observations and Resolutions

There were few cases where the SRT observed anomalies in the field. These items were documented as observations and further evaluated to ensure that observed field condition was either accounted for in the design or did not compromise the design requirements. Walkdown packages are included in Attachment 2.

Table 5-1 lists these walkdowns observations and corresponding resolutions. The observations were generally minor issues related to equipment access, maintenance issues, recommendations for further design documentation reviews and concrete shrinkage cracks in equipment foundations. The two most significant observations and corresponding resolutions are summarized below.

Control Room Proximity Issues

Some temporary equipment, such as desks, music stands, and file cabinets were located near safety related equipment in the Control Room with possible interactions occurring during a seismic event. Resolution included removal of the non-plant equipment from the vicinity of safety related equipment and ensuring overall compliance with the applicable station procedure (STA 661) for properly locating non-plant equipment. Also discussions were held with operations personnel addressing the significance of this issue.

Motor Control Center Clearance

Motor Control Center MCC-XEB1-2 has marginal clearance with cable tray supports. The issue is impact during an earthquake and resulting high frequency vibrations that could result in relay chatter.

A review of MCC logic diagrams concluded that chatter would be acceptable for the six GE CR120 control relays contained within the MCC. The relays are associated with HVAC fans and dampers.

Nevertheless, as part of the operability call, an Operations Notifications and Evaluation (ONE Form) was initiated to document the issue.

Table 5-1
WALKDOWN OBSERVATIONS AND RESOLUTIONS

AREA	TAG NUMBER	WALKDOWN OBSERVATION	RESOLUTION
065	1-8811A	The valve is located inside a tank with access inaccessible	Documentation review was conducted. No seismic interactions are applicable.
072	CP1-CIATAF-07	Review anchorage calculation, adequate anchorage could not be verified by visual review.	Documentation review was done. Anchorage design is satisfactory.
072	CP1-VAAUSE-07	No cross bracing was observed on the fan cooler, other similar units are braced	Documentation review was performed. Design is acceptable without bracing.
083	T1EB1	A threaded fire protection line was noted above the vented transformer feeder breaker	Condition of the fire protection line over the transformer is addressed by the generic report, 11-0210-0007.
084	CP1-MEDGEE-01	The DG inlet air silencers appear to be restrained for axial (z) direction loads only by friction U-straps	DG air silencers are adequately restrained per calculation IMT-CA-EQ-409-MS34.
99B	1-DO-0049	The valve is listed for Room 99B and physically located within Room 99D	The valve is located in Room 99D. Master Equipment List was revised to reflect the correct location.

AREA	TAG NUMBER	WALKDOWN OBSERVATION	RESOLUTION
99D	CP1-DOATDT-01	An approximately .5mm crack was noted in the raised foundation for the day tank	The anchorage calculation was verified with the crack in the pad having no impact on the results of the anchorage of the tank.
115A	Fire Barriers	The fire barrier wall between chillers appears to have local deterioration due to moisture	Maintenance was notified of the deterioration to the fire barrier wall. A work request, WR 179515, was initiated by Maintenance.
135	Control Cabinets	Various temporary items (such as desks, music stands, file cabinets) are located near safety related cabinets which may contain essential relays.	Those temporary items which could pose credible interaction were moved. Station procedure STA 661, "Non-Plant Equipment Storage and Use Inside Seismic Category I Structures", provides criteria for the storage requirements of temporary plant equipment. Subsequent walkdowns confirmed that no temporary equipment was stored near safety related cabinets. Discussions have been held with operations explaining STA 661 and the concerns noted here.

AREA	TAG NUMBER	WALKDOWN OBSERVATION	RESOLUTION
150	CPX-VAACCR-01	The control room A/C unit has a cracked concrete pad	The cracks are small, hairline in nature. The anchorage is not affected.
151A	CP1-VASFNID-07	Battery room exhaust fan anchorage should be verified by drawing review	A review of the anchorage calculation was done and is acceptable.
241	MCC-XEB1-2	The motor control center has marginal clearances with cable tray supports creating a potential for impact and relay chatter	ONE form 94-999 has been issued to resolve the issue.
275	CP1-SWAPSW-01	The pump motor junction box appears to have marginal support relative to typical CPSES details.	A documentation review was performed. Mounting of the junction box is satisfactory.
X-123	CP2-EPBTED-01	Clearance between the battery rack (machine bolt) and the wall should be verified. A gap of 1/4" to 3/8" exists between the rack and the wall.	A review of calculation IMT-CA-EQ-0079 showed the deflections of the rack (.135") to be small enough not to close the gap between the rack machine bolts and the wall.

6. RESULTS AND CONCLUSION

CPSES has extensive design documentation in the form of drawings, calculations, seismic equipment qualification packages, various historic plant walkdown documentation and computerized equipment list. Prior to undertaking of actual walkdowns, SRT reviewed a number of design documents pertaining to SSEL components. All the reviewed documentation was found to be in order and technically satisfactory. Seismic spatial interaction relationship was found to be well addressed through seismic/non-seismic interaction and commodity clearance programs. The seismic capability walkdowns further emphasized the fact that SSEL components in general do not have any adverse field conditions.

The walkdowns did result in a few observations. These observations and their resolutions are discussed in detail in section 5.1 and Table 5-1 of this appendix. Most observations were minor and involve maintenance type issues. The only two significant observations pertained to a Control Room proximity issue (the presence of unanchored non-plant equipment close to safety related plant equipment) and an instance of insufficient clearance between an MCC and adjacent cable tray supports. To address both of these issues the SRT took appropriate follow-up action ensuring their satisfactory resolution.

In summary, the SRT has concluded that equipment required to function in order to safely shutdown the plant following a design basis earthquake meets the necessary design requirements and is installed adequately with regard to anchorage and seismic spatial interaction considerations.

7. REFERENCES

1. USNRC Generic Letter 88-20 Supplement 4, Individual Plant Examination of External Events (IPEEE) for Severe Accident Vulnerabilities - 10CFR50.54 (f), June 28, 1991.

2. USNRC NUREG 1407, Procedural and Submittal Guidance for the individual Plant Examination of External Events IPEEE) for Severe Accident Vulnerabilities, June 1991.

3. CPSES Document Number: CPES-S-1032G. "Floor Response Spectra".

4. Seismic Qualification Utility Group, "Generic Implementation Procedure (GIP)," Revision 2, February 14, 1992.

5. EPRI NP-6041, "A Methodology for Assessment of Nuclear Power Plant Seismic Margin ", Revision 1, August 1991.

ATTACHMENT 1

RESUMES

Seismic Review Team

Jean-Paul Conoscente

Hossein Hamzehee

Steven D. Karpyak

Paul N. Passalugo

Dilip G. Patankar

Thomas R. Roche

Independent Peer Reviewer

Greg S. Hardy

SRT MEMBERS

Jean-Paul Conoscente has over seven years of experience of practical and research experience in structural engineering, earthquake engineering, equipment qualification, dynamic analysis, and structural mechanics. Recent projects include seismic IPEEE and Unresolved Safety Issue (USI) A-46 programs for commercial and Department of Energy nuclear facilities. Mr. Conoscente has extensive experience with Comanche Peak seismic issues, including walkdowns and evaluations of equipment, raceways, piping and HVAC systems. He has completed the SQUG walkdown training course. He holds MS and BS degrees in Structural Engineering and Mechanics. He is a registered Professional Engineer in the state of California.

Hossein Hamzehee has over thirteen years of experience in PRA, Reliability/Availability Improvement, System Analysis and Plant Operation. In the past, he was involved in the development and implementation of a number of full-scope PRAs. He participated in the seismic PRA for two of those full-scope PRAs. He also completed the IPEEE seismic Add-on training course sponsored by EPRI. Hossein holds a M.S. and B.S. Degrees in Mechanical Engineering. He is a Registered Professional Engineer in the State of Texas. Hossein was responsible for overall project management.

Steven D. Karpyak has over twenty-five years of experience in Nuclear Plant Systems Engineering and Operations including four years in Risk and Reliability Engineering. He served in the Naval Nuclear Power Program and qualified as Chief Engineer. He has recently participated in implementing a Reliability Centered Maintenance Program and provides support of various Risk and Reliability related activities as a Consulting Engineer in the Engineering Analysis Group. He completed the SQUG course and the IPEEE seismic Add-on course in preparation for the Seismic IPEEE. He was responsible for developing the Seismic SSEL for CPSES. He holds a MS and BS in Aeronautics and Astronautics. He is a registered Professional Engineer in the State of Texas.

Paul N. Passalugo has over fourteen years of experience associated with the design and construction of nuclear power plants. For the majority of that time he has been involved with the seismic qualification of equipment. He has reviewed vendor reports and prepared calculations and reports documenting the dynamic analysis and qualification of tanks, vessels, valves, and mechanical and electrical equipment for seismic loads. Presently, as a supervisor in Civil Engineering, the seismic portion of the Equipment Qualification Program falls under his responsibility. He has completed the SQUG and the IPEEE Seismic Add-on courses in preparation of the seismic IPEEE. He has participated in the walkdowns, documentation reviews, and development of the report. He holds a BS in Civil Engineering. He is a registered Professional Engineer in the State of Texas.

Dilip G. Patankar has over 18 years of experience associated with the design and construction of nuclear power plants. He has been extensively involved with various Civil/Structural engineering aspects of the nuclear plant designs including pipe whip restraint , moment restraint support design and seismic qualification of equipment. He was responsible for developing methodology and design basis for the Seismic/Non seismic Scope of System Interacting Program and is currently the responsible engineer for that program. He has completed the SQUG and the IPEEE Seismic Add-on courses in preparation of the Seismic IPEEE. He participated, as a member of the Seismic Review Team, in walkdowns, documentation reviews and development of the report required for Seismic IPEEE study. He holds a MS and BS Degrees in Civil Engineering. He is a registered Professional Engineer in the state of New York.

Thomas R. Roche has over 12 years of experience in the design,l construction and startup of nuclear and industrial facilities. He has participated in several seismic PRAs and EPRI seismic margins assessments as well as seismic qualification and seismic II/I programs. He has extensive expertise with Comanche Peak seismic issues as a participant in Unit 1 and Unit 2 II/I and qualification programs. Mr. Roche completed the SQUG walkdowns course, the SQUG systems course and the IPEEE add-on course. He holds a BS degree in Mechanical Engineering and is registered professional Engineer in the state of California.

INDEPENDENT REVIEWER

Greg S. Hardy has over 18 years of experience in the analysis, testing, design and evaluation of equipment and structures subjected to seismic loads. He was a key contributor to the development of the state-of-the-art seismic methods used to resolve both Unresolved Safety Issue A-46 and seismic IPEEE. Mr. Hardy is one of the acknowledged contributors to NUREG 1407 (NRC procedural guidance on IPEEE). Mr. Hardy has been the project manager for several seismic margin studies and seismic PRAs while at EQE for the nuclear utility industry. He was selected to be a SQUG instructor by EPRI for the USI seismic IPEEE training course and for the EPRI seismic fragility report. He has authored over 20 technical papers relative to earthquake effects on systems, components and structures. He is a registered Professional Engineer in the state of.California. He holds MS and BS Degrees in Mechanical Engineering.

ATTACHMENT 2

AREA WALKDOWN PACKAGES

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification
Building: Safeguard Floor Elevation: 773 Room No.: 053

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR Pump Room Emer fan coil	CP1-VAAUSE-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RHR Pump 1-01	TBX-RHAPRH-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RHR Pump EMR Fan SPLY flex hose	CP1-CHFHCH-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	RHR Pump EMR Fan RET flex hose	CP1-CHFHCH-02	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 53 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Safeguard Floor Elevation: 77' Room No: 053

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1.
   - SEQSP-MS-81-02: Qualified by test
   - 16345-CS(B)-611A 64, 65, 46
2.
   - SEQSP-WECM-032: Pump qualified by analysis
   - SEQSP-AE-2-01: Motor qualified by test and analysis
3. SEQSP-CPD-0322-001: Qualified by analysis
4. SEQSP-CPD-0322-001: Qualified by analysis

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Kim Roche Date: 8/20/93

Name: Paul N Pascalugo Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: Safeguard Floor Elevation: 773 Room No.: 54

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR Discharge Flow Indicating Switch	1-FIS-0610	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RHR Cold Leg Flow Transmitter	1-FT-0618	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 54 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet __ of __

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Safeguard Floor Elevation: 773 Room No: 54

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS616-01: Qualified by test
16345-EM(B)-048-C2C: Anchorage calc

2. SEQSP-MS611A-02: Qualified by test
16345-EM(B)-C48: Anchorage calc

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

NONE

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments:

D. Evaluated By:

Name: Date: 8/20/93

Name: Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: Safeguard Floor Elevation: 773 Room No.: 62

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SI Pump 1-01	TBX-SIAPSI-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	SI Pump 1-01 L.O. Inlet Strainer	CP1-SWSRSI-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	SI Pump 1-01 Fan Cooler	CP1-VAAUSE-05	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 62 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet __ of __

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Safeguard   Floor Elevation: 773   Room No: 62

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. • SEQSP-WECM-028: Qualified by combination of test and analysis (test to determine f_n)
   • 16345-EM(CS)-600A-011: Anchorage calc.

2. SEQSP-MS29A-01: Qualified by analysis

3. • SEQSP-MS81-03: Qualified by test
   • Volume IV, Book 40: Anchorage calc.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000362

Name: Date: 8/20/93

Name: Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: Safeguard Floor Elevation: 785 Room No.: 62E

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR to SI PMP Suction Check VLV	1-8969B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RHR to SI PMPS SUCT Valve	1-8804B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 62E seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Safeguard Floor Elevation: 773 Room No: 62E

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-119: Qualified by analysis
2. SEQSP-WECM-109: Qualified by a combination of analysis and static test.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000364

Name: Ron Rook Date: 8/20/93

Name: Paul N [illegible] Date: 8-20-93

Name: H Y [illegible] Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification
Building: Safeguard Floor Elevation: 785 Room No.: 62 F

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR to CCP SUCT CHK VLV	1-8969A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RWST to RHR PMP CHK VLV	1-8958A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RHR HX 1-01 BYP FLO CTRL VLV	1-FCV-0618	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	U2 SIP/CCP SUCT HDR XTIE VLV	1-8807A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	SI PMP 1-01 Miniflo VLV	1-8814A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	SI Pump 1-01 XTIE VLV	1-8821A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	SI Pump 1-01 DISCH CHK VLV	1-8922A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 62 F seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Safeguard Floor Elevation: 773 Room No: 62F

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-119: Qualified by analysis
2. SEQSP-WECM-118: Qualified by analysis
3. SEQSP-WECM-043: Qualified by analysis
4. SEQSP-WECM-110: Qualified by combination of analysis and test.
5. SEQSP-WECM-056: Qualified by combination of analysis and test.
6. SEQSP-WECM-131: Valve qualified by analysis
   SEQSP-HE-4-01: Motor operator qualified by test
7. SEQSP-WECM-124: Qualified by analysis

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Date: 8/20/93

Name: Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 785 Room No.: 1-62G

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SI PUMP 1-01/1-02 SUCT. CHK. VALVE	1-8926	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 62G seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG

Floor Elevation: 786

Room No: 1-626

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-0114 - STRUCTURAL ANALYSIS AND SEISMIC ANALYSIS PERFORMED BY WEMD. QUALIFIED BY ANALYSIS.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Tom [illegible] Date: 8/20/93

Name: Paul N [illegible] Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 1-065

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CNTMT SUMP TO RHR PUMP 1-01 SUCTION ISOLATION VALVE	1-8811A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 65 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No: 1-065

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1 SEQSP- WECM- 0112 QUALIFIED BY ANALYSIS BY WEMD

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Valve 1-8811A is located inside a tank (valve isolation tank), walkdown limited to DWG review.

D. Evaluated By:

000370

Name: Date: 8/20/93

Name: Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 1-067

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR PUMP 1-01 TO CCP SUCT VALVE	1-8804 A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RHR HX 1-01 DISCH CHECK VALVE	1-8730 A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RHR PUMP 1-01 MINIFLOW VALVE	1-FCV-0610	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	RHR HX 1-01 FLO CONTROL VALVE	1-HCV-0606	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	SI PUMP 1-01/1-02 MINIFLOW RET VALVE	1-8813	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 67 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG   Floor Elevation: 790   Room No: 1-067

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-0109 QUALIFIED BY ANALYSIS AND BY TESTING OF SIMILAR VALVES THAT ENVELOP THIS TYPE.
2. SEQSP-WECM-0115 QUALIFIED BY ANALYSIS
3. SEQSP-WECM-007 QUALIFIED BY TEST AND ANALYSIS.
4. SEQSP-WECM-042 QUALIFIED BY ANALYSIS BY FISCHER CONTINENTAL
5. SEQSP-WECM-056 QUALIFIED BY ANALYSIS. STATIC DEFLECTION TEST PERFORMED TO VERIFY OPERABILITY.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000372

Name: Tom Rush   Date: 8/20/93

Name: Paul M Pasculego   Date: 8-20-93

Name.   Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 1-069

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RESIDUAL HEAT REMOVAL HEAT EXCHANGER 1-01	TBX-RHAHRS-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 69 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG

Floor Elevation: 790

Room No: 1-069

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-0064 QUALIFIED BY ANALYSIS
ANCHORAGE QUALIFIED BY W CALC. # 16345-CS-EM(S)377

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000374

Name: Tom [illegible] Date: 8/20/93

Name: Paul M [illegible] Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 1-070

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR HX 1-01 CCW RETURN FLOW XMTR	1-FT-4556	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RHR HX 1-01 CCW RET VLV	1-HV-4572	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RHR HX 1-01 CCW RETURN TEMP ELEMENT	1-TE-4557	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	480/120 VAC XFMR (1EB3-1/1EC3) T1EC3 FEEDER BREAKER	1EB3-1/2DL/ BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	RWST 1-01 TO RHR PMP 1-01 SUCT VALVE	1-8812A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	RWST 1-01 TO SI PMPS SUCT VALVE	1-8806	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	SSW TRN A TO U1 AFW PUMP SUCT VALVE	1-HV-4395	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	480 V MCC 1EB3-1 (Contains Item 4)	CP1-EPMCEB-03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 070 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No: 1-070

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0611A-002 QUALIFIED BY TESTING
   ANCHORAGE CALC # 16345-EM(B)-C48
2. SEQSP-MS-0600-033 QUALIFIED BY TEST AND ANALYSIS.
   MOUNTED IN-LINE
3. SEQSP-MS-0622-001 QUALIFIED BY TEST AND ANALYSIS.
   PROCESS INSTRUMENT
4. SEQSP-ES-0007-001 A SUB-COMPONENT OF CPI-EPMCEB-03
   ANCHORAGE CALC # 16345-EM(S)-672
5. SEQSP-WECM-0113 QUALIFIED BY ANALYSIS AND TESTING
   OF A REPRESENTATIVE VALVE.
6. SEQSP-WECM-0103 QUALIFIED BY ANALYSIS AND TEST.
7. SEQSP-MS-0600-030 QUALIFIED BY TEST AND ANALYSIS.
8. See item 4

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Lagging observed on FP lines near the MCC, NO spray issue

D. Evaluated By:

Name: Tom Date: 8/20/93

Name: Paul M Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification
Building: SAFEGUARDS Floor Elevation: 0790 Room No.: 1-072

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	MDAFWP 1-01 Flow Element	1-FE-2456	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	MDAFWP 1-01 Isolation Valve	1-HV-2480	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	MDAFWP 1-01 PRESSURE TRANSMITTER	1-PT-2453	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	MDAFWP 1-01 PRESSURE TRANSMITTER	1-PT-2475	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	MDAFWP 1-01 SUCTION CHECK VALVE	1AF-0014	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	MDAFWP 1-01 DISCHARGE CHECK VALVE	1AF-0065	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	MDAFWP 1-01 AIR SUP CHECK VALVE	1AF-0215	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	MDAFWP 1-01 AIR SUP CHECK	1AF-0216	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	MOTOR DRIVEN AUX. FEEDWATER PUMP 1-01	CP1-AFAPMD-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
10.	AIR ACCUMULATOR 1-07	CP1-CIATAF-07	I	[✓ Y] N U N/A	[✓ Y] N U N/A

Is all above listed equipment in room no. 72 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

CONTINUATION

Sheet 2 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARD Floor Elevation: 0790 Room No.: 1-072

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
11.	MDAFWP 1-01 FAN COOLER FAN 1-07	CP1-VAAUSE-07	I	[✓ Y] N U N/A	[✓ Y] N U N/A
~~2.~~				Y N U N/A	Y N U N/A
~~3.~~				Y N U N/A	Y N U N/A
~~4.~~				Y N U N/A	Y N U N/A
~~5.~~				Y N U N/A	Y N U N/A
~~6.~~				Y N U N/A	Y N U N/A
~~7.~~				Y N U N/A	Y N U N/A
~~8.~~				Y N U N/A	Y N U N/A
~~9.~~				Y N U N/A	Y N U N/A
~~10.~~				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 72 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 3 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 0790 Room No: 1-072

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	TEST /	ANALYSIS	ANCHORAGE CALC
1. MS62-01		✓	N/A
2 MS20B.1-031	✓	✓	N/A
3. MS611A-02	✓		16345-EM~~(B)-048~~
4 MS611A-02	✓		16345-EM(B)-048
5. MS20B.1-05		✓	N/A
6. MS20B.1-06		✓	N/A
7. MS625-05	✓		N/A
8. MS 625-05	✓		N/A
9. MS 7-01		✓	16345-CS(B)-602A3
10 MS 65-01		✓	16345-EM(B)-231
11. MS 81-03	✓		Volume IV Book 40

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Verified anchorage calc for Item 10, IR=.72, no action required. Verified no bracing required for item 11 (SEQSP-MS81-03)

D. Evaluated By:

000379

Name: Date: 8/20/93

Name: Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARD Floor Elevation: 0810 Room No.: 1-077A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RCP SL WATER RET ISOL VALVE	1-8100	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RC PUMP 1-03 SL WTR INJ VALVE	1-8351C	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RC PUMP 1-04 SL WTR INJ VALVE	1-8351D	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CHARGE PMP SUCT HI PNT VNT VALVE	1-HV-8220	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 77A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 0910 Room No: 1-077A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	Test /	ANALYSIS	ANCHORAGE CALC
1. WECM 56	✓	✓	N/A
2. WECM 56	✓	✓	N/A [redacted]
3. WECM 56	✓	✓	N/A
4. MS603-01	✓	✓	N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A --

D. Evaluated By:

000381

Name: Tom Date: 8/20/93

Name: Paul Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 0810 Room No.: 1-[illegible]

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CONTAINMENT ISOLATION VALVE	1-8106	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CONTAINMENT ORC ISOLATION VALVE	1-8152	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RC PUMP 1-01 SL WATER INJ VALVE	1-8351A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	RC PUMP 1-02 SL WATER INJ VALVE	1-8351B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	SI ISOLATION VALVE	1-8801A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	RHR INJ ISOLATION VALVE	1-8809A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	RHR INJ ISOLATION VALVE	1-8840	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	RHR HX 1-01 TEMPERATURE ELEMENT	1-TE-0606	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	SI INJ ISOLATION VALVE	1-8802A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
10.	SI INJ ISOLATION VALVE	1-8835	I	[✓ Y] N U N/A	[✓ Y] N U N/A

Is all above listed equipment in room no. 778 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 0810 Room No: 1-077B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

	SEQSID	TEST	/ ANALYSIS	ANCILLARY CALC
1.	WECM 134	✓	✓	N/A
2.	WECM 094	✓	✓	N/A
3.	WECM 056	✓	✓	N/A [redacted]
4.	WECM 056	✓	✓	N/A
5.	WECM 129	✓	✓	N/A
6.	WECM 111	✓	✓	N/A
7	WECM 111	✓	✓	N/A
8.	MS622-01	✓		N/A
9.	WECM 130	✓	✓	N/A
10.	WECM 133	✓	✓	N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000383

Name: Tom Pirk Date: 8/20/93

Name: Paul N Passalugo Date: 8-20-93

Name: MG Hamerzykee Date: 8/20/93

Sheet 1 of 4

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 0810 Room No.: 1-083

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	6.9KV SWGR 1EA1 EMERG FEEDER BKR	1EG1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RPS INVERTER IV1PC1 SUPPLY BREAKER	1EB1-1/2HL/3K	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	SAFEGUARDS BOP INV 1V1EC1 SUPPLY BKR	1EB1-1/2HR/BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	6.9KV SWGR 1EA1 INNER BUS TIE BKR	BT-1EA1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	6.9KV SWITCHGEAR 1EA1	CP1-EPSWEA-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	480 VAC SWGR 1EB1 PREFERRED FEEDER BKR	1EB1-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	480 V SWGR BUS 1EB1 COMPARTMENT	1EB1/3C/COMP	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	480 V SWGR BUS 1EB1 COMPARTMENT	1EB1/3D/COMP	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	480 VAC SWGR 1EB3 PREFERRED FEEDER BKR	1EB3-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
10.	480V SWGR BUS 1EB3 COMPARTMENT	1EB3/7C/COMP	I	[✓ Y] N U N/A	[✓ Y] N U N/A

Is all above listed equipment in room no. 83 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

CONTINUATION

Sheet 2 of 4

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 0810 Room No.: 1-083

B. EQUIPMENT EVALUATION

Success Path Equipment in Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
11.	480 VAC SWITCHGEAR 1EB1	CP1-EPSWEB-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
12.	6.9KV/480 VAC TRANSFORMER	CP1-EPTRET-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
13.	6.9KV/480 VAC TRANSF. FEEDER BREAKER	T1EB1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
14.	480 VAC MOTOR CONTROL CENTER	CP1-EPMCEB-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
15.	125 VDC BATTERY CHARGER SUPPLY BKR	1EB1-1/2M/BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
~~6.~~				Y N U N/A	Y N U N/A
~~7.~~				Y N U N/A	Y N U N/A
~~8.~~				Y N U N/A	Y N U N/A
~~9.~~				Y N U N/A	Y N U N/A
~~10.~~				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 83 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y [✓ N] U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? Y [✓ N] U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 3 of 4

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 0810 Room No: 1-083

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	TEST / ANALYSIS	ANCHORAGE CALC
1. ES5-01	✓	N/A
2. ES7-01	✓	N/A
3. ES7-01	✓	N/A [redacted]
4 ES5-01	✓	N/A
5 ES5-01	✓	16345-EM(B)-240
6. WECM 140	✓ ✓	
7. WECM 140	✓ ✓	
8 WECM 140	✓ ✓	
9. WECM 140	✓ ✓	
10. WECM 140	✓ ✓	

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

A threaded fire protection line is located above the 6.9kV/480VAC Breaker (T1EB1). The walkdown team observed a threaded joint near the open mesh top of the breaker (Continued on next sheet)

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: Reviewed Calc 16345-EM(B)-240 to verify plug welds were conservatively addressed, no further action required.

D. Evaluated By:

000386

Name: Tom Date: 8/20/93

Name: Paul N Date: 8-20-93

Name: Date: 8/20/93

CONTINUATION

Sheet 4 of 4

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 0810 Room No: 1-083

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

	SEQSP	Test	Analysis	Anchorage Calculation
11.	WECM 140	✓	✓	16345-EM(B)-246
12.	ES6-01	✓	✓	16345-EM(B)-243
13.	ES5-01	✓		N/A
14.	ES7-01	✓		16345-EM(S)-672
15.	ES7-01	✓		N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

(continued from previous sheet)
The issue was addressed in Impell Report No. 11-0210-0007, "Fire Protection Threaded Pipe Failure Evaluation Report."

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000387

Name: Date: 8/20/93

Name: Date: 8-21

Name: Date: 8-20

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARD Floor Elevation: 810'-0" Room No.: 84

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	DIESEL GENERATOR	CP1-MEDGEE-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	FUEL OIL TRANF. PUMP DISCHARGE VALVE	1-00-0002	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	FUEL OIL TRANF PUMP DISCH. CHECK VALVE	1-00-004	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	D.G. FUEL OIL TRANSFER PUMP	CP1-DOAPFT-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	D.G. FUEL OIL TRANSF. PUMP STRAINER	CP1-DOSRTP-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	D.G. Air inlet Silencers	CP1-MEFTAS-01	I	[✓ Y] N U N/A	Y [✓ N] U N/A
7.	D.G. Local Control Panel	CP1-MEDGEE-01B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	Neutral Grounding Resistor	1EG2/GR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	D.G. Control Panel	CP1-MEDGEE-01A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
10.	Various other skid items	various	I	[✓ Y] N U N/A	[✓ Y] N U N/A

Is all above listed equipment in room no. 84 seismically qualified? Y N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U N/A

3. No other interaction concerns? Y N U N/A

Is all above listed equipment in room free from interaction effects? Y N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 810'-0" Room No: 84

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	ANCHORAGE
1. MS-34-10	16345-CS(B)-605A34 605A35
2. MS-34-11	16345-CS(B)-605A9 -605A33
3. MS-29A-002,	N/A
4. MS-20A.1-015	N/A
5. MS-20A.1-016	N/A
6-10: MS-0034-various	N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

The intake air silencer (CP1-MEFTAS-01) is free to displace ~.5" in the long direction (Calc IMT-CA-EQ-409-MS34). This may result in an insignificant exceedence in the allowable expansion joint displacement (~.05" based, on Calc IMT-CA-EQ-0502-MS34). Not judged a concern.

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

TRR 9/3/94

Comments: ~~N/A~~ A MEL sort of DG and related systems was used during the walkdown to ensure mechanical, electrical and instrumentation were captured. List Attached (26 Pages).

D. Evaluated By:

Name: Tom Date: 8/20/93

Name: Paul M Date: 8-20-93

Name: Date: 7/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 810'-0" Room No.: 85-A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	FAN COOLER FAN	CP1-VAAUSE-17	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	FAN COOLER FAN	CP1-VADPGU-60	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 85-A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 810'-0" Room No: 85-A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	ANCHORAGE
1. MS-81-02, BY TEST.	16345-CS(B)-611A65, - 611A64, - 605A46
2. MS-84-05,	N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000391

Name: Date: 8/20/93

Name: Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFE GUARD Floor Elevation: 796'0" Room No.: 85D

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CONDST. STORAGE TANK LEVEL TRANSMITTER	1-LT-2479	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	AFW PUMP ISOLATION VALVE	1-AF-0007	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	REFUEL. WATER STORAGE TANK-LEVEL TRANSMITTER	1-LT-0930	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 85D seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 796'-0" Room No: 85D

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

	SEQSP	ANCHORAGE
1.	MS-0611A-002	16345-EM(B)-048
2.	MS-0020C-004, BY ANALYSIS.	N/A
3.	ESE-0004-002, BY TEST	16345-EM(B)-048

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000393

Name: Date: 8/20/93

Name: Paul N Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARD Floor Elevation: 844'-0" Room No.: 99B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	FUEL OIL DAY TANK OUTLET VALVE	1-DO-0029	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	FUEL OIL DAY TANK TRANSF. CHECK VALVE	1-DO-0049	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	DISCHARGE GRAVITY DAMPER-VENT FAN	CP1-VADPGU-48	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	VENTILATION FAN	CP1-VAFNAV-25	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 99B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 844'-0" Room No: 99 B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	ANCHORAGE
1. MS-20A.1-015	N/A
2. MS-20A.1-016	N/A
3. MS-0084-005, BY ANALYSIS	N/A
4. MS-0092B-001, BY ANALYSIS	16345-EM(S)-676

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

Valve 100-0049 is located in Area 1-0990. The Master Equipment List (MEL) was updated to reflect the correct location.

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By: **000395**

Name: Date: 8/2/94

Name: Date: 8-3-94

Name: Date: 8/3/94

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ELIF02                     Tag Location Updt Detail                     08/02/94
CLAZARO1                                                             PAGE  1 OF  1
Tag Number: 1DO-0049             Ver: 0     Equip Type: VAME      Status: ACT
Desc: DG_1-01_FO_DAY_TK_1-01_XFER_HDR_CHK_VLV____________________________
Alternate Id: ____________________
   t        : 1 +                      Room: 1-099D_ +
   tem      : DO_ +                    Name: DIESEL GENERATOR TANK 1-01 ROOM
Subsystem   : 00                       Bldg: SG
Startup Sys: 1-2901__                  Elev: 0844
Train (Sys): A_ +
X =  __ FT  _____ IN
Y =  __ FT  _____ IN        Measured From: __ +              Y-Ref: _______
Z =  __ FT  _____ IN        or Z Azimuth : ___               Z-Ref: _______
Specific Oper Location: TOP_OF_DAY_TANK,_NORTH_SIDE___________________________
                                                                 Resp Disc: ME
COMMAND ===> ____ DATA ___________________________________________________
F13=TAG FUNC
                                      F22=EQUIP ID F23=TECHNICL F24=XREF
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Page 3 of 3

Sheet 1 of [illegible]

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFE GUARDS Floor Elevation: 844'-0" Room No.: 99D

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	FUEL OIL DAY TANK LEVEL SWITCH	1-LS-3375A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	FUEL OIL DAY TANK	CP1-DOATDT-01	I	[✓ Y] N U N/A	Y [✓ N] U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 99D seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 4

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGAURDS Floor Elevation: 844'-0" Room No: 99D

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0034-018, BY TEST. ANCHORAGE - N/A
2. SEQSP-MS-0034-016, BY ANALYSIS. ANCHORAGE - 16345 - CS(B) - 655A1 AND 655A2

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

See calculation (Attached)

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000398

Name: Date: 8/20/93

Name: Paul N Pandya Date: 8-20-93

Name: Date: 8/20/93

EQE

EQE ENGINEERING

SHEET NO. 3 / 4

JOB NO. ________ JOB CPSES Unit 1 Seismic Margin Eval. BY Jm DATE 8/19/93

CALC. NO. ________ SUBJECT Fuel Oil Tanks, room 099D CHK'D HM DATE 8/20/93

PURPOSE: The purpose of this calculation is to evaluate the effect of cracks in the concrete pedestal where the fuel oil tanks are anchored, for resolution of IPEEE.

METHODOLOGY: The existing design basis calculation is reviewed, and interaction ratios for the critical elements are extracted. Reduced allowables are calculated to include the effects of cracks and new interaction ratios are calculated.

REFERENCES:
1) SWEC Calculation 16345-CS(B)-655A1, Revision 0, "Fuel Oil Day Tank-02, SG Bldg El. 844'-0"".

2) SWEC Calculation 16345-CS(B)-655A2, Revision 0, "Fuel Oil Day Tank-01, SG Bldg El. 844'-0"".

3) Seismic Qualification Utility Group (SQUG), "Generic Implementation Procedure (GIP) for Seismic Verification of Nuclear Plant Equipment", Revision 2, Appendix C

CALCULATION

. From References 1 & 2, the interaction ratios for the anchor bolt and the concrete pad are as follows:

- anchor bolt: concrete tension: 0.33
  shear: 0.81
  steel stud: 0.34

- concrete pad (shear): 35.8/126 = 0.28

. Cracks measured in the field were ~0.5mm = 0.02 in

SHEET NO. 4/

JOB NO. ______ JOB CPSES Unit 1 Seismic Margin Eval. BY Are DATE 8/19/9

CALC. NO. ______ SUBJECT Fuel Oil Tanks, room 099D CHK'D TR DATE 8/20/9

- Per Reference 3, for cracks between 0.01in and 0.06in, the shear capacity of the bolt remains unchanged, while the pullout capacity is reduced as follows:

$$RC_p = 1.08 - 8\,CS$$
$$= 1.08 - 8 \times 0.02 = 0.92$$

- The new interaction ratios are therefore:

shear: 0.81/1.0 = 0.81
pullout: 0.33/0.92 = 0.36

- Therefore, the anchor bolts are adequate for SSE loads

- The concrete pad shear interaction ratio is very small and is therefore not a concern.

- Furthermore, additional conservatism exist due to the fact that the concrete of the 2' pier was not considered in the anchor bolt capacity calculation. Since the pier is reinforced, and that the concrete is confined, the load path between the tank anchorage and the concrete floor is maintained.

CONCLUSION. The tank anchorage is adequate for SSE loads.

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARD Floor Elevation: 852'-0 Room No.: 100A

B. EQUIPMENT EVALUATION

Success Path Equipment in Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	MAIN STEAM LINE PRESSURE TRANSMITTER	1-PT-0514	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 100A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARD Floor Elevation: 852'-0" Room No: 100 A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-ESE-0001A-01, BY TEST. ANCHORAGE- DMI-1C-SET 2
16345-EM(B)-043-CZC

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000402

Name: Tom Ruh Date: 8/20/93

Name: Paul N Passalugo Date: 8-20-93

Name: Date: 8/20/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 852'-0" Room No.: 100B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	AUX. FEED WATER FLOW TRANSMITTER	1-FT-2463A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	STEAM GENERATOR ISOLATION VALVE	1-HV-2491B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	AUX. FEED WATER CHECK VALVE	1-AF-0075	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 100B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 852'-0" Room No: 100B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	ANCHORAGE
1. MS-0611A-002	16345-EM(B)-048
2. MS-208·1-035, BY TEST & ANALYSIS.	N/A
3. MS-208.1-001, BY ANALYSIS.	N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Tom Date: 8/20/93

Name: Paul M Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 874'-0" Room No.: 107

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	AIR ACCUMULATOR	CP1-MSATRT-01		[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 107 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 874'-0" Room No: 107

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0065-006, BY ANALYSIS. ANCHORAGE-16345-EM(B)-232

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000406

Name: Tom Park Date: 8/20/93

Name: Paul N Date: 8-20-93

Name: Date: 7/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 881'-0" Room No.: 108E

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	MAIN STEAM ISOLATION VALVE	1-HV-2333A		[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 108E seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 881'-0" Room No: 108E

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0076-001 - BY TEST & ANALYSIS. ANCHORAGE - N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000408

Name: Tom Date: 8/20/93

Name: Paul M Casalugo Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 881'-0" Room No.: 109

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	ATMOSPH. RELIEF VALVE	1-PV-2325		[✓ Y] N U N/A	[✓ Y] N U N/A
2.	ISOLATION VALVE	1-MS-0026		[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 109 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 881'-0" Room No: 109

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0078-001 - BY TEST & ANLYSIS. ANCHORAGE - N/A

2. SEQSP-MS-20B-1-021 - BY ANALYSIS. ANCHORAGE - N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Tom [illegible] Date: 8/20/93

Name: Paul N [illegible] Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 896'-0" Room No.: 112

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	ISOLATION VALVE	1-MS-0704	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 112 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SAFEGUARDS Floor Elevation: 896'-0" Room No: 112

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0625-001 - BY ANALYSIS. ANCHORAGE - N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000412

Name: Ron Park Date: 8/20/93

Name: Paul N Pandya Date: 8-20-

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Auxiliary Floor Elevation: 785 Room No.: 162

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SSW TRN A SPLY HDR CHK VLV	1-SW-0017	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 162 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary Floor Elevation: 785 Room No: 162

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-20B.1-008: Qualified by analysis

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Jean Paul Comomento Date: 08/18/93

Name: Steven D. Kayayah Date: 8/18/93

Name: DGParankar Date: 8/18/93

Sheet__ of __

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Auxiliary Floor Elevation: 790 Room No.: 175

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CCW HX 1-01 Outlet Flow	1-FT-4536A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	Component Cooling Water HX	CP1-CCAHHX-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CCW HX 1-01 Outlet Temp	1-TE-4530	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	U1 SFGD Loop A CCW Supply Valve	1-HV-4514	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 175 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary Floor Elevation: 790 Room No: 175

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS611A-02: Qualified by test
   16345-EM(B)-048: Anchorage calc
2. SEQSP-MS49-01: Qualified by test
   16345-CS - 700A052: Anchorage calc
3. SEQSP-MS622-01: Qualified by test & analysis
4. SEQSP-MS600-29: Qualified by test & analysis

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000416

Name: Jean Paul Conaserto Date: 08/18/93

Name: Shrvni D. Kazayal Date: 8/18/93

Name: D Parankar Date: 8/18/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Auxiliary Floor Elevation: 790 Room No.: 179

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U1 Train A CCW Supply Pressure	1-PS-4519	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 179 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary Floor Elevation: 790 Room No: X-179

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS616-01: Qualified by test
   16345-EM(B)-048-CZC: Anchorage Calc.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Date: 08/18/93

Name: Date: 8/18/93

Name: Date: 8/18/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Auxiliary Floor Elevation: 810 Room No.: 198

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U1 NON-SFGD Loop CCW Upstream	1-HV-4526	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	U1 NON-SFGD Loop CCW Downstream	1-HV-4527	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 198 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary Floor Elevation: 810 Room No: 198

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1, 2) SEGSP-MS600-29: Qualified by test and analysis

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000420

Name: Jean Paul Conquento Date: 08/18/93

Name: Steven A. Karpyak Date: 8/18/93

Name: D. Patankar Date: 8/18/93

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification
Building: Auxiliary Floor Elevation: 810 Room No.: 200

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	Centrifugal Charging pump	TBX-CSAPCH-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CCP 1-01 L/O CLR STRN 1-01 ISOL	1SW-0406	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CCP1-01 Lube oil Cooler strainer	CP1-SWSRCH-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CCP 1-01 Room Fan cooler	CP1-VAAUSE-03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CCP1-01 L/O CLR STRN 1-01 ISOL	1SW-0407	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 200 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary   Floor Elevation: 810   Room No: 200

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-031: Qualified by test and analysis (test for f_n)
   16345-CS -711A003: Anchorage calc.

2&5) SEQSP-MS20A.1-29: Qualified by analysis

3. SEQSP-MS29A-01: qualified by analysis

4. SEQSP-MS81-03: qualified by test
   16345-CS(S)-181 } Anchorage calc
   16345-CS(S) -151 }

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000422

Name: Jean Paul Coronente   Date: 08/18/93

Name: Date: 8/18/93

Name: DlParankar   Date: 8/18/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification
Building: Auxiliary Floor Elevation: 810 Room No.: 203

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CCP 1-01/1-02 Miniflow Valve	1-8110	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CCP 1-01 Disch Check Valve	1-8481A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RWST 1-01 to CHRG Pump Suct	1-8546	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	RC Pump Seal Water Control	1-HCV-0182	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	RC Pump Seal Water Inj Isolation	1CS-8345	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 203 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary   Floor Elevation: 810   Room No: 203

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-056: Qualified by Test & Analysis (Small bore globe MOV)
2. SEQSP-WECM-123: Qualified by analysis (4" Check Valve)
3. SEQSP-WECM-114: Qualified by analysis (8" Check valve)
4. SEQSP-WECM-090: Qualified by test & analysis (3" AOV)
5. SEQSP-MS20A.1-33: Qualified by analysis (2" Check valve)

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

VALVE 1-8110 IS LOCATED IN A CONTAMINATION AREA AND THE VALVE WAS INACCESSIBLE. THE AS-BUILT DRAWING BRP-CS-1-AB-006B WAS REVIEWED. THIS DRAWING IS QUALIFIED PER SWEC STRESS PROBLEMS 1-051A AND 1-052V. SYSTEM INTERACTION FOR THIS ROOM WAS COMPLETED AS PART OF THE COMMON AREA REVIEW, AND NO SOURCE OF II/I REMAINS IN THIS ROOM.

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000424

Name: Date: 8/18/93

Name: Steven A. Kapyak   Date: 8/18/93

Name: Date: 8/19/93

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Auxiliary Floor Elevation: 810 Room No.: 205

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CCW Pump 1-01 Discharge Pressure	1-PT-4520	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CCW Pump 1-01 Discharge CHK VLV	1-CC-031	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CCW Pump 1-01	CP1-CCAPCC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CCW Pump 1-01 Room Cooler	CP1-VAAUSE-09	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 205 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary Floor Elevation: 810 Room No: 205

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-611A-02: Qualified by Test
   16345-EM(B)-048: Anchorage Calc
2. SEQSP-MS20B.2-06: Qualified by analysis
   (24" Check Valve)
3. SEQSP-MS11-01: Qualified by analysis
   16345-CS(B)-711A009: Anchorage Calc
4. SEQSP-MS81-04: Qualified by test
   16345-CS(B)-711A25: Anchorage Calc.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000426

Name: Jean Paul Bonnement Date: 08/18/93

Name: Steven D. Kazyak Date: 8/18/93

Name: DlParankar Date: 8/18/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification
Building: Auxiliary Floor Elevation: 810 Room No.: 206

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	Charging Pump Disch Flow	1-FT-121	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 206 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary Floor Elevation: 810 Room No: 206

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-611A-02: Qualified by Test
16345-EM(B)-048: Anchorage Calc

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000428

Name: Date: 08/18/93

Name: Date: 8/18/93

Name: DGpatankar Date: 8/18/93

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification
Building: Auxiliary Floor Elevation: 810 Room No.: 207

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U1 SFGD Loop A CCW Return VLV	1-HV-4512	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	U1 NON-SFGD Loop CCW Ret VLV	1-HV-4524	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	U1 Non-SFGD Loop Upstream Ret VLV	1-HV-4525	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	RWST 1-01 to CHRG PMP Suct Valve	1-LCV-0112D	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CCP 1-01 Lube Oil Cooler SSW outlet Flow	1-FT-4352	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 207 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary Floor Elevation: 810 Room No: 207

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1, 2, 3) SEQSP-MS-600-029: Qualified by combination test & analysis

(24" Motor Operated Butterfly Valve)

4. SEQSP-WCEM-103: Qualified by test & analysis (valve)
SEQSP-HE-4-01: Qualified by test (Motor operator)

5. SEQSP-MS618-01: Qualified by test

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: Valve 1-HV-4525 (item#3) is adjacent to a 2"Ø rod hung conduit. The 24"Ø valve and operator are both massive and potential II/I interaction is not judged to be a concern.

D. Evaluated By:

Name: Jean Paul Bonament Date: 08/18/93

Name: Steven A. Karpyak Date: 8/18/93

Name: DGPatankar Date: 8/18/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Auxiliary Floor Elevation: 822 Room No.: 209

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RC Pump Alt Miniflo Isolation	1-8511A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 209 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary Floor Elevation: 822 Room No: 209

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-055: Combined Test & analysis qualification (2"Ø Motor Operated globe valve)

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000432

Name: Jean Paul Bonorento Date: 08/18/93

Name: Steven A. Karpyak Date: 8/18/93

Name: DG Patankar Date: 8/18/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Auxiliary Floor Elevation: 842 Room No.: 230

B. EQUIPMENT EVALUATION

Success Path Equipment in Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RC Pump Seal Water Filter Isolation	1-CS-8382B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 230 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary   Floor Elevation: 842   Room No: 230

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-M520A.1-037: Qualified by analysis (2"Ø Globe Valve)

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Jean Paul Borromente   Date: 08/18/93

Name: Steven A. Kaypyak   Date: 8/18/93

Name: Date: 8/18/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Auxiliary Floor Elevation: Room No.: 241

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	Alternate Feeder BKR (Item 2 Subcomponent)	XEB1-2/1M/BKR-2	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	Motor Control Center Center EB1	CPX-EPMCEB-01	I	[✓ Y] N U N/A	Y [✓ N] U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 241 seismically qualified? Y [✓ N] U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y [✓ N] U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? Y [✓ N] U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Auxiliary Floor Elevation: Room No: 241

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1&2) SEQSP-E57-001: Qualified by test
16345-EM(S)-672: Anchorage calc

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

The MCC has minimal clearance with adjacent cable tray supports in 3 different locations. Potential impact could cause relay chatter of sensitive relays. ONE 94-999 written which documents the potential interactions. Modifications will be made to prevent the possible interactions between the drip pan of the MCC and the adjacent cable tray supports.

Are all potential problems satisfactorily addressed? Y [✓ N] N/A

Is further investigation required? [✓ Y] N N/A

Comments: N/A

D. Evaluated By:

000436

Name: Date: 8/4/94

Name: Date: 8/4/94

Name: Date: 8/4/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 874 Room No.: X-245

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	COMPONENT COOLING WTR SURGE TANK 1-01 TNA LEVEL XMTR	1-LT-4500	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	COMPONENT COOLING WTR SURGE TANK 1-01	CP1-CCATST-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	SAFETY CHILLED WATER SURGE TANK 1-01 LEVEL SWITCH 6712	1-LS-6712	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	SAFETY CHILLED WATER SURGE TANK 1-01	CP1-CHATST-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 245 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB Floor Elevation: 874 Room No: X-245

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS - 0611A - 002 QUALIFIED BY TEST
   ANCHORAGE CALC # 16345- EM(B) -048 - CZC
2. SEQSP MS - 0065 - 004 QUALIFIED BY ANALYSIS
   ANCHORAGE CALC # 16345- EM(B) - 256
3. SEQSP MS - 0620 - 001 QUALIFIED BY TEST
   PROCESS INSTRUMENT
4. SEQSP - MS - 0065 - 007 QUALIFIED BY ANALYSIS
   ANCHORAGE CALC # 16345-CS(B) - 735A31

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000438

Name: Jean Paul Bonavente Date: 08/19/93

Name: D Patanker Date: 8/19/93

Name: Thomas A. Karpyak Date: 8/19/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Control Floor Elevation: 778 Room No.: 115A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	Safety Chiller 1-05 Pressure Xmitter	1-PT-4552	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	Safety Chiller 1-05 CCW RET PCV	1-PV-4552	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	IA Accumulator Check valve	1CC-1079	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	IA Accumulator Check Valve	1CC-1080	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	Chiller 1-05 CCW Return PCV Accumulator	CPI-CIATCC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	Chill water Pump 1-05 Pressure Switch	1-PS-6704	I	Y N U [✓ N/A]	Y N U [✓ N/A]
7.	Chill Water Pump 1-05	CPI-CHAPCP-05	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	Safety Chiller 1-05	CPI-CHCICE-05	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 115A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? Y [✓ N] U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Control   Floor Elevation: 778   Room No: 115A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS611A-02: Qualified by test
   16345-EM(B)-048: Anchorage calc
2. SEQSP-MS600-101: Qualified by a combination of test and analysis

3&4. SEQSP-MS625-05: Qualified by test

5. SEQSP-MS65-100: Qualified by analysis
   16345-EM(CS)-637: Anchorage calc.

6. 1-PS-6704 has been removed from the SSEL

7. SEQSP-MS15C-01: Pump qualified by analysis
   SEQSP-MS15C-02: Motor qualified by analysis
   16345-CS(B)-703A32: Anchorage calc
8. SEQSP-MS80B-01: Qualified by test & analysis
   SEQSP-MS80B-02: Control Panel qualified by test
   16345-CS(B)-703A30: Anchorage calc.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

A fire barrier wall between the two pumps has water damage. Although this water damage is not judged to significantly affect structural integrity, it was noted as a maintenance item. Resolved by maintenance request No. WR 179515

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: Tubing off accumulator (item#5) was judged to have enough flexibility to accomodate seismic displacements.

D. Evaluated By:

000440

Name: D Patankar   Date: 8/18/93

Name: [illegible] S. Kapyal   Date: 8/18/93

Name: ____   Date: ____

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification
Building: Control Floor Elevation: 778 Room No.: 115C

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	UPS A/C Unit 1 Discharge Damper	CPX-VADPGU-34	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	UPS Room Booster Return Fan	CPX-VAFNAV-42	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	UPS A/C Unit X-01	CPX-VAACUP-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	UPS A/C Unit X-01 CCW Ret PCV	X-PCV-H116A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 115C seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Control   Floor Elevation: 778   Room No: 115C

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS84-05: Qualified by analysis

2. SEQSP-MS92B-03: Fan qualified by analysis
SEQSP-ES1B-03: Motor qualified by analysis
Volume IV Book 34: Anchorage calc

3. SEQSP-MS87-11: Qualified by analysis and in-situ test.
16345-EM(B)-276: Anchorage calc

4. SEQSP-MS87-014: Qualified by a combination of test and analysis

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: Compressor was removed for work in progress.

D. Evaluated By:

000442

Name: Jean Paul [illegible]   Date: 08/18/93

Name: D Phatankar   Date: 8/18/93

Name: [illegible] Kayyal   Date: 8/18/9

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Control Floor Elevation: 792 Room No.: 121

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	118 VAC Safeguards BOP Inverter	CP1-ECIVEC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	480/120 VAC Bypass Transformer	CP1-ECTRET-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	118 VAC RPS Inverter	TBX-ESELIV-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	125 VDC Switch board	CP1-EPSWED-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	Disconnect Switch (Item 4 Subcomponent)	1ED1/1-5/DSW	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	Feeder Breaker (Item 4 Subcomponent)	1ED1/2-8/BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	125 VAC Swichboard	CP1-EPSWED-03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	Disconnect Switch (Item 7 Subcomponent)	1ED3/1-1/DSW	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	Feeder Breaker (Item 7 Subcomponent)	1ED3/2-8/BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
10.	125 VDC Battery Charger	CP1-EPBCED-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A

Is all above listed equipment in room no. 121 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Control Floor Elevation: 792 Room No: 121

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-ES09-01: Qualified by test
   16345-EM(S)-673: Anchorage calc.
2. SEQSP-ES09-02: Qualified by test
   16345-EM(B)-258: Anchorage calc.
3. SEQSP-WECM-139: Qualified by test.
   16345-EM(B)-290: Anchorage calc.

4-9) SEQSP-ES11-02: Qualified by test
16345-EM(B)-261: Anchorage calc.

10) SEQSP-ES08B-02: Qualified by test
16345-EM(B)-266: Anchorage calc

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? [✓ Y] N N/A

Comments: N/A

D. Evaluated By:

Name: Jean Paul [illegible] Date: 08/19/93

Name: D Parankar Date: 8/19/93

Name: Steven A. Karpyal Date: 8/19/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification

Building: Control Floor Elevation: 792 Room No.: 124

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	125 VDC Station Battery	CP1-EPBTED-03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 124 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? Y [✓ N] U N/A

Is all above listed equipment in room free from interaction effects? Y [✓ N] U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Control Floor Elevation: 792 Room No: 124

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-ES8A-02:-Battery qualified by test
   -Rack qualified by analysis

   16345-EM(B)-251: Anchorage calc

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

- Battery cells in adjacent room is supported off the floor by non seismic racks. Failure of the racks may result in a spill of the battery sulfuric acid. An acid spill would not impact electrical or instrumentation cables (Ref ND 6041, F-6).

Are all potential problems satisfactorily addressed? Y [✓ N] N/A

Is further investigation required? Y [✓ N] N/A

Comments: Space heater CPI-VAHEUH-03 above the batteries, is Cat. I and appears to be well anchored.

D. Evaluated By:

Name: Jean Paul [illegible] Date: 08/18/93

Name: DGPatankar Date: 8/3/94

Name: [illegible] Date: 8/3/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification
Building: Control Floor Elevation: 807 Room No.: 133

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	125 V DC Distribution Panel	CPI-ECDPED-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	118 V AC INST DIST PNLBD	CPI-ECDPEC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	Feeder Breaker (Item 4 Subcomponent)	1EC1/00/BKR-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	118 VAC By-Pass DIST NNLBD	CPI-ECDPEC-03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	Distribution Panel	CPI-ECDPPC-03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	Feeder Breaker (Item 5 Subcomponent)	1PC3/00/BKR-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	Distribution Panel	CPI-ECDPPC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	Feeder Breaker (Item 7 Subcomponent)	1PC1/00/BKR-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 133 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Control   Floor Elevation: 807   Room No: 133

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-ES11-03: Qualified by test
16345-EM(B)-264: Anchorage calc.

2-8) SEQSP-ES10-01: Qualified by test
16345-EM(B)-268: PPC-01 and 03 Anchorage calc
16345-EM(B)-269 & 308: PEC-03 Anchorage calc
16345-EM(B)-270 & 308: PEC-01 Anchorage calc

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: The cabinets have different anchorage configurations ranging from 4 bolts located inside the panel, to four bolted angle ears on the outside of the cabinet. All configurations ~~appear~~ seismically adequate.

D. Evaluated By:

000448

Name: Jean Paul Conomento   Date: 08/18/93

Name: DGarankar   Date: 8/18/93

Name: A. Karpyal   Date: 8/18/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: X

A. DESCRIPTION

Walkdown Area Identification
Building: Control Floor Elevation: 830 Room No.: 135

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	Main Control Board 3	CPI-ECPRCB-03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	(Item 1 Subcomponent)	1-TI-4557	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	(Item 1 Subcomponent)	1-FI-4556	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	Solid State SG System Sequencer	CPI-ECPRCR-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	ESFAS PWR Supply (Item 4 Subcomponent)	1-CR01/15Q	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	ESFAS PWR Supply (Item 4 Subcomponent)	1-CR01/48Q	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	Main Control Board 10	CPI-ECBRCB-10	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	RX Trip handswitch (Item 7 Subcomponent)	1/1 - RT	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	Main Control Boards	CPI-ECBRCB-1 thru 11	I	[✓ Y] N U N/A	[✓ Y] N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 135 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? Y [✓ N] U N/A

Is all above listed equipment in room free from interaction effects? Y [✓ N] U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Control   Floor Elevation: 830   Room No: 135

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1-3) SEQSP-MS605-01: Qualified by test & analysis (MCB)
16345-EM(B)-274: Main Control Board anchorage calc
SEQSP-MS605-28: Qualified by test (Instruments)

4-6) SEQSP-ES22-01: Qualified by test
16345-EM(B)-291: Anchorage Calc

7,8) SEQSP-MS605-01: Qualified by test & analysis (MCB)
16345-EM(B)-274: Main control board anchorage calc
SEQSP-M605-35: Qualified by test (switch)

9. SEQSP-M605-01 thru 08: Qualified by test and analysis
16345-EM(B)-274: Anchorage Calc

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

Several temporary non-anchored items such as desks, chairs, etc.. were observed adjacent to Cat. IE cabinets containing sensitive relays.

Are all potential problems satisfactorily addressed? Y [✓ N] N/A

Is further investigation required? [✓ Y] N N/A

Comments: N/A

D. Evaluated By:

000450

Name: Jean-Paul Coronante   Date: 08/20/93

Name: Paul N Passalugo   Date: 8/3/94

Name: N/A   Date:

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1 (X)

A. DESCRIPTION

Walkdown Area Identification

Building: ELECTRICAL/CONTROL BLDG Floor Elevation: 854'-0" Room No.: 150

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CONTROL ROOM A/C UNIT X-01	CPX-VAACCR-01	I	[✓ Y] N U N/A	Y [✓ N] U N/A
2.	CONTROL ROOM A/C COOLING COIL	CPX-VAACCR-01B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CONTROL ROOM A/C UNIT X-01 FAN MOTOR	CPX-VAACCR-01M	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CR A/C UNIT 1 DISCHARGE GRAVITY DAMPER	CPX-VADPGU-05	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CR A/C UNIT 2 INLET ISOL. A.O DAMPER	CPX-VADPOU-10	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	CR A/C SUPPLY-AIR FLOW BALANCING A.O DAMPER	CPX-VADPOU-48	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	CR A/C UNIT X-01 CCW RET. PCV	X-PV-3583	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 150 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

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1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: ELECTRICAL/CONTROL ROOM Floor Elevation: 854'-0" Room No: 150

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	TEST/ANALYSIS	ANCHORAGE
• MS-0087-001 → #1, #2, #3	BOTH	16345-CS(B)-0731A
• MS-0087-009 → #7	BOTH	N/A
• MS-0084-006 → #5 & #6	ANALYSIS	N/A
• MS-0084-005 → #4	ANALYSIS	N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

Cracks were observed on the concrete pad to which the A/C Unit is anchored. Review of calc. 16345-CS(B)-0731A021 showed that the Unit is anchored with 12@1"Ø Richmond inserts. Since Richmond inserts are attached to embedded plates inside the concrete, the cracks will not have a significant effect on the capacity of these inserts. Therefore, the anchorage is judged to be adequate for SSE loads.

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By: **000452**

Name: Jean Paul [illegible] Date: 08/1[illegible]

Name: DGPatankar Date: 8/19/[illegible]

Name: Shone A. Kapoyal Date: 8/19/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: ELECTRICAL/CONTROL BLDG Floor Elevation: 854' Room No.: 151A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	BATTERY ROOM 1-1 EXHAUST FAN 1-08 DISCH. GR. DAMPER	CPI-VADPGU-42	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	BATTERY ROOM 1-1 EXHAUST FAN 1-07 INLET DAMPER	CPI-VADPOU-03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	BATTERY ROOM 1-A EXHAUST FAN 1-07	CPI-VAFNZO-07	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 151-A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: ELECTRICAL/CONTROL BLDG Floor Elevation: 854' Room No: 151A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	TEST/ANALYSIS	ANCHORAGE
MS-0084-006 #2	ANALYSIS	N/A
MS-0084-005 # 1	ANALYSIS	N/A
MS-0083E-005 #3	"	SWEC Calc 16345-CS(B)-731A9

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

000454

D. Evaluated By:

Name: Jean Paul Conescent Date: 08/18/93

Name: DGPatankar Date: 8/18/93

Name: Thom A. Karpyak Date: 8/18/93

Sheet 1 of 4

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: Common

A. DESCRIPTION

Walkdown Area Identification

Building: Service Water Intake Floor Elevation: 0796 Room No.: X-275

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SSW Pump 1-01 Discharge Flow Transmitter	1-FT-4258	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	Not Used			Y N U N/A	Y N U N/A
3.	SSW Pump 1-01 Discharge Pressure Transmitter	1-PT-4252	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	SSW Pump 1-01 Brg Wtr Strn Chk Valve	1SW-0084	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	SSW Pump 1-01 Discharge Chk Valve	1SW-0374	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	SSW Pump 1-01 Brg Wtr Strn 05/06	1SW-0428	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	Station Service Pump 1-01	CP1-SWAPSW-01	I	[✓ Y] N U N/A	Y [✓ N] U N/A
8.	SSW Pump 1-01 Bearing Wtr Strainer 1-02	CP1-SWSRPL-02	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	SWIS Exhaust Fan X-06	CPX-VAFNWV-06	I	[✓ Y] N U N/A	[✓ Y] N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-275 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 4

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SI Floor Elevation: 0796 Room No.: X-275

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
10.	480 VAC MCC XEB3-3 ALTERNATE FEEDER BREAKER	1EB3-3/2E/BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
~~2~~.11	NOT USED			Y N U N/A	Y N U N/A
~~3~~.12	SSW PUMP 1-01 BRG WTR STRNR 1-02 OUT ISOL VALVE	1SW-0068	I	[✓ Y] N U N/A	[✓ Y] N U N/A
~~4~~.13.	SSW PUMP 1-01 BRG WTR STRNR 1-02 IN ISOL VALVE	1SW-0074	I	[✓ Y] N U N/A	[✓ Y] N U N/A
~~5~~.14	SSW PUMP 1-01 BRG WTR STRNR 1-06 IN VALVE	1SW-0422	I	[✓ Y] N U N/A	[✓ Y] N U N/A
~~6~~.15.	SSW PUMP 1-01 BRG WTR STRNR 1-06 OUT VALVE	1SW-0423	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-275 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 3 of 4

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SERVICE WATER INTAKE Floor Elevation: 0796 Room No: X-275

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

SEQSP	TEST /	ANALYSIS	ANCHORAGE CALCULATION
1. MS611A-02	✓		16345-EM(B)-048
2 N/A			
3. MS611A-02	✓		16345-EM(B)-048
4. MS20A.1-04		✓	
5 MS20B.3-01		✓	
6. MS20A.1-018		✓	16345-CS(B)-1107 A19 & A2
7. MS10-1 & ES10.1-01		✓ ✓	
8. MS27A-03		✓	
9. MS83B-07		✓	Volume IV, Books 20 & 46

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

#7. A follow-up activity involved the main conduit box mounting attached to the motor. SEQSP-ES10.1-01 addressed the mounting that was verified in a previous walkdown and agreed to the as analyzed condition noted as reference 3 in SEQSP-ES10.1-01. The mounting of the main conduit box is thus adequately addressed.

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

000457

Name: Tom Rak Date: 8/20/93

Name: Paul N Date: 8-20-93

Name: Date: 8/20/93

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SI Floor Elevation: 0796 Room No: X-275

B. Listing of Seismic Design Documentation for Success Path Equipment identified in tne room.

10. SEQSP-ES-0007-001 - ITEM IS A SUBCOMPONENT OF CPI-EPMCEC-07. QUALIFIED BY TEST.

12.
13.
14.
15.
} SEQSP-MS-20A 1-11 QUALIFIED BY ANALYSIS. ITEM IS A MANUAL GLOBE VALVE.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? [✓ Y] N N/A

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Tom Park Date: 8-20-93

Name: Paul N Pasalugo Date: 8-20-93

Name: Date: 8/20/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 808'-0" Room No.: 154A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	LTDN CNTMT IRC ISOL VLV	1-8160	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RC Pump 1-01 SL INJ CHK VLV	1-8815	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RHR 1-01 INJ CHK VLV	1-8818A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	SI 1-01 CHK Valve	1SI-8819A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CCP 1-01/1-02 to CL 1-01 CHK VLV	1SI-8900A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	RC PUMP CHK. VALVE	1CS-8368A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 154A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet _ of _

PLANT WALKDOWN SCREENING AND EVALUATION SHEET SHEET 2 OF 2

A. Walkdown Area Identification

Building: RB Floor Elevation: 808'-0" Room No: 154A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP- WECM-094: Qualified by test and analysis (3"Ø AOV).
2. SEQSP- WECM-120: Qualified by analysis (3"Ø Check Valve).
3. SEQSP- WECM-116: Qualified by analysis (6"Ø Check Valve).
4. SEQSP- MS20A.1-31: Qualified by analysis (1"Ø Check Valve).
5. SEQSP- MS20A.1-30: Qualified by analysis (1"Ø Check Valve).
6. SEQSP- MS20A.1-38: Qualified by analysis

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Access to area was limited due to recent contamination, a visual area review of overhead piping an valves was performed.

D. Evaluated By:

Name: Tom Roche Tom Roche Date: 10/28/93

Name: D.G. PATANKAR DGPatankar Date: 10/28/93

Name: Date: 10/28/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification
Building: RB Floor Elevation: 808 Room No.: 154B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR PMP 1-01 Suct Relief Valve	1-8708A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	Containment Recirc Sump level Xmitter	1-LT-4779	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RHR to RCS HL 1-02 CHK Valve	1-8841A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	SI HL 1-02 INJ CHK Valve	1SI-8905B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 154B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

SHEET 2 OF 2

A. Walkdown Area Identification

Building: RB

Floor Elevation: 808

Room No: 154B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-036: Qualified by analysis (3"Ø Pressure Relief valve).

2. SEQSP-MS-630-01: Qualified by test (10' long, mounted to column).

3. SEQSP-WECM-116: Qualified by analysis (6"Ø Check Valve).

4. SEQSP-MS20A.1-031: Qualified by analysis (1"Ø Check valve).

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: 1-LT-4779 is not typical of experience database instruments, however, the installation is robust and has been tested. Piping and valves was reviewed from the floor due to access limitations.

D. Evaluated By:

Name: Tom Roche Tom Roche Date: 10/28/93

Name: D.G. PATANKAR DGPatankar Date: 10/28/93

Name: Date: 10/28/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 808 Room No.: 154D

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U1 RC PMP Seal water iso VLV	1-8112	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RHR PMP 1-01 HL 1-01 Recirc iso VLV	1-8701A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 154D seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

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Sheet _ of _

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

SHEET 2 OF 2

A. Walkdown Area Identification

Building: RB Floor Elevation: 808 Room No: 154D

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-056: Qualified by a combination of test and analysis (2" ø MOV).
2. SEQSP-WECM-105: Qualified by a combination of test and analysis (12" ø MOV).

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Could not gain access to area due to recent contamination, review limited to documentation.

D. Evaluated By:

Name: Tom Roche Tom Roche Date: 10/28/93

Name: D.G.PATANKAR DGPatankar Date: 10/28/93

Name: Date: 10/28/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 808 Room No.: 154I

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RC Pump 1-01 Seal Check Valve	1CS-8350A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RC Pump 1-01 Seal Check Valve	1CS-8367A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RCS Cold leg 1-01 Temp	1-TE-0411B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 154I seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET SHEET 2 OF 8

A. Walkdown Area Identification

Building: RB Floor Elevation: 808 Room No: 154I

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1&2: SEQSP-MS20A.1-031: Qualified by analysis (2"∅ Check valve).

3: SEQSP-ESE7-01: Qualified by test (Temperature element).

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Could not gain access due to high radiation area, documentation review performed.

D. Evaluated By:

Name: Tom Roche Date: 10/28/93

Name: D.G. PATANKAR DGPatankar Date: 10/28/93

Name: Date: 10/28/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 812 Room No.: 154J

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RC Pump 1-02 Seal water Check Valve	1CS-8350B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RHR to RCP 1-02 Check Valve	1-8949B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 154J seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET SHEET 2 OF 2

A. Walkdown Area Identification

Building: RB

Floor Elevation: 812

Room No: 154 J

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS20A.1-031: Qualified by analysis (2"ø Check valve).
2. SEQSP-WECM-116: Qualified by analysis. (6"ø Check valve).

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Could not gain access due to high radiation area, documentation review performed.

D. Evaluated By:

Name: Tom Roche Date: 10/28/93

Name: D.G. PATANKAR D G Patankar Date: 10/28/93

Name: Date: 10/27/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 812 Room No.: 154K

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RC Pump 1-03 Seal Water CHKVLV	1CS-8350C	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 154k seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

SHEET 2 OF 2

A. Walkdown Area Identification

Building: RB Floor Elevation: 812 Room No: 154K

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS20A.1-031: Qualified by analysis (2" 0 Check valve).

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Could not gain access due to high radiation area, documentation review performed.

D. Evaluated By:

Name: ~~Tom~~ Roch Tom Roche Date: 10/29/93

Name: D.G PATANKAR D'Patankar Date: 10/29/93

Name: Date: 10/29/93

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Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 812 Room No.: 154L

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RC Pump 1-04 seal water CHK VLV	1CS-8350D	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 154L seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

SHEET 2 OF 2

A. Walkdown Area Identification

Building: RB Floor Elevation: 812 Room No: 154L

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS20A.1-031: Qualified by analysis (2"ø check valve).

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Could not gain access to area due to high radiation.

D. Evaluated By:

Name: Tom Roche Date: 10/29/93

Name: D.G PATANKAR DGPatankar Date: 10/29/93

Name: Date: 10/29/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 832 Room No.: 155G

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RC Hot Leg 1-104 Pressure Xmitter	1-PT-0403	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 155G seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

SHEET 2 OF 2

A. Walkdown Area Identification

Building: RB

Floor Elevation: 832

Room No: 155G

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. EGESP-M5611A-04: Qualified by test (Rosemount pressure transmitter)

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: N/A

D. Evaluated By:

Name: Tom Roche Tom Roche Date: 10/29/93

Name: D.G. PATANKAR DGPatankar Date: 10/29/93

Name: Date: 10/29/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 832 Room No.: 155L

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SG 1-01 FW PREHTR CHK VLV	1FW-0196	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	SG 1-01 Level Xmitter	1-LT-0517	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	PZR 1-01 Pressure Xmitter	1-PT-0455	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 155L seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet _ of _

PLANT WALKDOWN SCREENING AND EVALUATION SHEET SHEET 7 OF 8

A. Walkdown Area Identification

Building: RB Floor Elevation: 832 Room No: 155L

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS20B.1-003: Qualified by analysis (6" Check Valve).
2. SEQSD-ESE-03-01: Qualified by test (Barton 764 Transmitter).
3. SEQSP-ESE-1A-01: Qualified by test (Barton transmitter).

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Access to area was not available due to high radiation / contamination, documentation review performed.

D. Evaluated By:

Name: Tom Roche Tom Roche Date: 10/29/93

Name: D.G.PATANKAR DGPatankar Date: 10/29/93

Name: Date: 10/29/

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 905 Room No.: 160A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	PORV 455A N_2 ACCM 1-02 Iso	1SI-170	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	N_2 SPLY TO PORV 455A Iso	1SI-180	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	PORV 455A N_2 Accumulator	CP1-SIATRT-02	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 160A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET SHEET 2 OF 2

A. Walkdown Area Identification

Building: R.B.#1 Floor Elevation: 905'-0" Room No: 160 A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1, 2. SEQSP-MS20A.1-012: Qualified by analysis (3/4" Ø globe valve).

3. SEQSP-MS65-05: Qualified by analysis.
16345-EM(B)-217: Anchorage calc (60" O.D. N_2 Accumulator).

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: Tom Roche Tom Roche Date: 10/29/93

Name: D.G.PATANKAR DGpatankar Date: 10/29/93

Name: Date: 2/29/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: R.B. #1 Floor Elevation: 862'-0" Room No.: 1-161A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	PORV GATE VALVE (ISOLATION)	1-8000A	CAT. I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	PRESSURIEZER SAFETY VALVE	1-8010A	CAT. I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 161A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

SHEET 2 OF 2

A. Walkdown Area Identification

Building: R. B. #1 Floor Elevation: 862'-0" Room No: 1-161A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. PORV GATEVALVE - SEQSP-WECM-0134 QUALIFIED BY TEST& ANALYSIS.

2. PRESS. SAFETY VALVE - SEQSP. WECM. 0038 - QUALIFIED BY TEST& ANALYSI

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Could not access valves due to high radiation, document review performed.

D. Evaluated By:

Name: Tom Roche Tom Roche Date: 10/29/93

Name: D. G. PATANKAR DGPatankar Date: 10/29/93

Name: Date: 10/29/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: R.B. #1 Floor Elevation: 905'-0" Room No.: 1-161E

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	PRESS. PORV RELIEF VALVE	1-PCV-0455A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	GLOBE VALVE	1RC-8053B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 161E seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

SHEET 2 OF 2

A. Walkdown Area Identification

Building: R.B. Floor Elevation: 905'-0" Room No: 1-161E

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-090 - QUALIFIED BY TEST & ANALYSIS.
2. SEQSP-MS-20A.1-18 - QUALIFIED BY ANALYSIS

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

None

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Could not access top of PZR due to high radiation. Document review performed. Verified PORV clearance for interaction via CPE-SWEC-FVM-CS-068, Area 16, Page 28.

D. Evaluated By:

Name: Tom Roche Tom Roche Date: 10/29/93

Name: D.G. PATANKAR DGPatankar Date: 10/29/93

Name: Date: 10/29/93

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification
Building: SG Floor Elevation: 0773 Room No.: 1-056B

B. EQUIPMENT EVALUATION

Success Path Equipment in Room - CONTAINMENT SYSTEMS

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CT PUMP 1-01 SL CLR CCW SUAPLY ISOL. VALVE	1CC-0095	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CT PUMP EMER. FAN CLR UNIT 1-11 CHS SUPPLY ISOL VALVE	1CH-0366	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CT PUMP EMER FAN CLR UNIT 1-11 CHS RETURN ISOL VALVE	1CH-0367	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CT PUMP 1-01 BRG CLR SSW INLET ISOL VALVE	1SW-0368	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CT PUMP 1-01 BRG CLR SSW OUT THROTL. VALVE	1SW-0367	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	CT PUMP 1-01/1-03 BRG CLR SSW IN VALVE	1SW-0399	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	CT PUMP 1-01/1-03 BEARING COOLER SSW INLET STRAINER	CP1-SWSRCS-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-056B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 0773 Room No: 1-056B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1CC-0095 - VALVE - QUALIFIED BY ANALYSIS - SEQSP-MS-20A.1-15
2. 1CH-0366- VALVE - QUALIFIED BY ANALYSIS - SEQSP-MS 20A.1-014
3. 1CH-0367-VALVE - QUALIFIED BY ANALYSIS - SEQSP-MS-20A.1-014
4. 1SW-0368 - VALVE - QUALIFIED BY ANALYSIS - SEQSP-MS-20A.1-011
5. 1SW-0367 - VALVE - QUALIFIED BY ANALYSIS - SEQSP-MS-20A.1-011
6. 1SW-0399 - VALVE - QUALIFIED BY ANALYSIS - SEQSP-MS-20A.1-029
7. CPI-SWSRCS-01-STRAINER - QUALIFIED BY ANALYSIS, SEQSPMS29A-01

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

000484

Name: Paul N [illegible] Date: 6-1-94

Name: DGParankar Date: 6/1/94

Name: Date: 6/1/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 773' Room No.: 1-054

B. EQUIPMENT EVALUATION

Success Path Equipment In Room — CONTAINMENT SYSTEMS

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CT PUMPS 1-01 & 1-03 SEAL CLR OUTLET FLOW INDICATING SWITCH	1-FIS-4542	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CT PUMP EMERG. FAN CLR SUPPLY FLEX HOSE (CHS)	CP1-CHFHCH-21	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CT PUMP EMERG. FAN CLR RETURN FLEX HOSE (CHS)	CP1-CHFHCH-22	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CT PUMP 1-01 SEAL CLR CCW UPSTREAM RETURN ISOLATION VALVE	1CC-0098	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CT PUMP 1-01 SEAL CLR CCW DOWNSTREAM RETURN ISOLATION VALVE	1CC-0266	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	CT PUMP 1-01/1-03 SL COOLER RETURN FLOW SWCH ISOLATION VALVE	1CC-0280	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	CONTAINMENT SPRAY PUMP 1-01	CP1-CTAPCS-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	CT PUMP 1-01/1-03 ROOM FAN COOLER FAN 1-11	CP1-VAAUSE-11	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-054 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all ab e listed equipment in room free from influence by adja elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 773' Room No: 1-054

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1-FIS-4542 - FLOW INDICATING SWITCH - SEQSP MS-618-01 FOR LINE MOUNTED ROTAMETER QUALIFIED BY TEST - VERIFICATION WALKDOWN
2. CPI-CHFHCH-21 - FLEX HOSE - QUALIFIED BY ANALYSIS - CPD-0322-001
3. CPI-CHFHCH-22 - FLEX HOSE - QUALIFIED BY ANALYSIS - CPD-0322-001
4. 1CC-0098 - VALVE - QUALIFIED BY ANALYSIS - SEQSP-MS-20A.1-15
5. 1CC-0266 - VALVE - QUALIFIED BY ANALYSIS - SEQSP-MS-20A.1-15
6. 1CC-0280 - VALVE - QUALIFIED BY ANALYSIS - SEQSP-MS-20A.1-15
7. CPI-CTAPCS-01 - PUMP - QUALIFIED BY ANALYSIS - SEQSP-MS-12-01
   ANCHORAGE EFLT-IMT-018
8. CPI-VAAUSE-11 - FAN - QUALIFIED BY TEST - SEQSP-MS0081-04
   MOUNTED WITH (4)-1"ϕ ANCHOR BOLTS ON 8½" CONCRETE PAD
   NEED TO CHECK EFLT-IMT-084 (SEE ITEM 6 OF SEC 3.1 OF SEQSP)

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

Name: DKPatankar Date: 6/1/94

Name: Paul M [illegible] Date: 6-1-94

Name: Date: 6/1/94

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 785'6" Room No.: 1-062F

B. EQUIPMENT EVALUATION

Success Path Equipment in Room – CONTAINMENT SYSTEMS

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CT PUMP 1-01 MINI-FLOW LN CHECK VALVE	1CT-0064	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-062F seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS –

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 785'6" Room No: 1-062F

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1CT-0064, CHECK VALVE, QUALIFIED BY ANALYSIS, SEQSPMS-208.1-3

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

000488

Name: D Gpatankar Date: 6/1/94

Name: Date: 6-1-94

Name: Date: 6/1/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 0790'6" Room No.: 1-067
1-069

B. EQUIPMENT EVALUATION

Success Path Equipment in Room CONTAINMENT SYSTEMS

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CT PUMP 1-01 RECIRC VALVE	1-FV-4772-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CT PUMPS 1-01/1-03 DISCH TEST LINE ISOL VALVE	1CT-0050	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RWST TO CT PUMP 1-01/1-03 SUCTION CHECK VALVE	1CT-0077	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CT PUMP 1-01 SUCTION ISOL VALVE	1CT-0084	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CT PUMP 1-01 DISCH ISOL VALVE	1CT-0097	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	CT PUMP 1-01 DISCH CHECK VALVE	1CT-0094	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	CONTAINMENT SPRAY HEAT EXCHANGER 1-01	CP1-CTAHCS-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-067/69 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 0790'6" Room No: 1-067
1-069

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1-FV-4772-1, VALVE ASSEMBLY, QUALIFIED BY TEST AND ANALYSIS, SEQSP MS-600-009, BRP-CT-1-SB-023
2. 1CT-0050, VALVE ASSEMBLY, QUALIFIED BY ANALYSIS, SEQSP MS20B.1-23
3. 1CT-0077 VALVE, QUALIFIED BY ANALYSIS, SEQSP MS20B.1-007
4. 1CT-0084 VALVE ASSEMBLY, QUALIFIED BY ANALYSIS, SEQSP MS 20B.1-25
5. 1CT-0097 VALVE ASSEMBLY, QUALIFIED BY ANALYSIS, SEQSP MS 20B.1-23
6. 1CT-0094 VALVE, QUALIFIED BY ANALYSIS, SEQSP MS20B.1-007
7. CPI-CTAHCS-01, CONTAINMENT SPRAY HEAT EXCHANGER INCLUDING SUPPORTS, QUALIFIED BY ANALYSIS, SEQSP MS 50-01

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

000490

Name: Paul N Pav[illegible] Date: 6-1-94

Name: D Patankar Date: 6|1|94

Name: Date: 6/1/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification
Building: SG Floor Elevation: 0790'6" Room No.: 1-070

B. EQUIPMENT EVALUATION

Success Path Equipment in Room — CONTAINMENT SYSTEMS

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CT Hx 1-01 CCW RETURN VALVE	1-HV-4574	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CT Hx 1-01 CCW SUPPLY ISOL VALVE	1CC-0107	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-070 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 0790' 6" Room No: 1-070

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1-HV-4574 - VALVE ASSEMBLY - QUALIFIED BY TEST AND ANALYSIS - SEQSP - MS 0600 -033 (VALVE, LIMITORQUE ACTUATOR, LIMIT SWITCHES AND MOUNTING BRACKET)
2. ICC-0107 VALVE QUALIFIED BY ANALYSIS - SEQSP - MS200 - 006

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: -

D. Evaluated By:

000492

Name: Paul N Parulekar Date: 6-1-94

Name: DPatankar Date: 6/1/94

Name: Date: 6/1/94

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 0790'6" Room No.: 1-065

B. EQUIPMENT EVALUATION

Success Path Equipment in Room – CONTAINMENT SYSTEMS

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CONTAINMENT SUMP TO CT PUMP 1-01/1-03 SUCTION ISOLATION VALVE	1-HV-4782	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CONTAINMENT SUMP TO CT PUMP 1-01/1-03 CHECK VALVE	1CT-0149	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-065 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 0790 Room No: 1-065

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1-HV-4782 - VALVE ASSEMBLY - QUALIFIED BY ANALYSIS - SEQSP MS 208.1-36, BRP-CT-1-RB-048

2. 1CT-0149 - VALVE (CHECK) - QUALIFIED BY ANALYSIS - SEQSP MS 208.1-007

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

000494

Name: Paul N Paulugo Date: 6-1-94

Name: DGpatankar Date: 6/1/9

Name: Date: 6/1/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CRSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification
Building: SG Floor Elevation: 0790 Room No.: 1-072

B. EQUIPMENT EVALUATION

Success Path Equipment in Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	MDAFW PUMP 1-01 DISCH TO SG 1-01 CTRL VALVE	1-PV-2453A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-072 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 0790 Room No: 1-072

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1-PV-2453A, VALVE ASSEMBLY. QUALIFIED BY TEST AND ANALYSIS, SEQSP MS 000-005, BRP-AE-1-SB-033

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? [✓ Y] N N/A

Comments: NONE

D. Evaluated By:

000496

Name: Paul M Cumley Date: 6-1-94

Name: D Patankar Date: 6/1/94

Name: L.W. Henzcher Date: 6/1/94

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 0800'6" Room No.: 1-076

0810'6" 1-077A

B. EQUIPMENT EVALUATION

Success Path Equipment in Room – CONTAINMENT SYSTEMS 0831'6" 1-088

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RWST TO CT PUMP 1-01/1-03 SUCTION VLV	1-HV-4758	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	LWPS RCDT 1-01 LVL CONTROL VALVE	1-LCV-1003	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CT HX 1-01 OUTLET VALVE	1-HV-4776	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CONTAINMENT PRESURE TRANSMITTER CH IV	1-PT-0934	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-076 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 0800'6", 0810'6" 083'6" Room No: 1-076, 1-077A 1-088

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1-HV-4758 - VALVE ASSEMBLY - QUALIFIED BY ANALYSIS - SEQSP MS 20B.1-36, BRP-CT-1-SB 001.
2. 1-LCV-1003 - VALVE ASSEMBLY - QUALIFIED BY TEST AND ANALYSIS SEQSP- WECM-095 - BRP-WP-1-SB-005
3. 1-HV-4776 - VALVE ASSEMBLY - QUALIFIED BY ANALYSIS - SEQSP MS 20B.1-36, BRP-CT-1-SB-008A
4. 1-PT-0934 - PRESSURE TRANSMITTER - QUALIFIED BY TEST - SEQSP ESE-0003-001

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments:

NONE

D. Evaluated By: **000498**

Name: Paul M Paculugo Date: 6-1-94

Name: D Gatankar Date: 6/1/94

Name: Date: 6/1/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 874 Room No.: 1-107

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SG1-01 ARV AIR SUPPLY DSM CK VALVE	1MS-0681	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-107 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building:

Floor Elevation:

Room No:

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1MS-0681, VALVE, QUALIFIED BY TEST AND ANALYSIS, SEQSP MS 625-05,

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

000500

Name: Paul N Date: 6-1-94

Name: DLparankear Date: 6/1/94

Name: Date: 6/1/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: SSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 0896 Room No.: 1-112

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SG 1-01 ARV AIR ACCUM ISOL VALVE	1MS-0703	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-112 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 8 of 8

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Floor Elevation: Room No:

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1MS-0703, VALVE, QUALIFIED BY ANALYSIS, SEQSP MS 625-01

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

Name: DLPatankar Date: 6/1/94

Name: Date: 6-1-94

Name: Date: 6/1/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CASES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 0852 Room No.: 1-100B

B. EQUIPMENT EVALUATION

Success Path Equipment in Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SG 1-01 FW PRE-HEATER BYP VALVE	1-FV-2193	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-100B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 8

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG

Floor Elevation: 0852

Room No: 1-100B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1 1-FV-2193, VALVE, QUALIFIED BY TEST AND ANALYSIS, SEQSP MS-600-28, BRP-FW-1-SB-033

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

000504

Name:

Date: 6-1-94

Name:

Date: 6/1/94

Name:

Date: 6/1/94

Sheet 1 of 8

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 810 Room No.: 203

B. EQUIPMENT EVALUATION

Success Path Equipment in Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CCP 1-01 ALT. SEAL INJ. VALVE	1CS-8387A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-203 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB   Floor Elevation: 0810   Room No: 203

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1CS-8387A, VALVE, QUALIFIED BY ANALYSIS, SEQSP MS20A.1-03

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

000506

Name: Date: 6-1-94

Name: Date: 6/1/94

Name: Date: 6/1/94

Sheet 1 of 9

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 0808 Room No.: 1-154I

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SI Accum 1-01 DNSM INJ CHECK VALVE	1-8948A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-154I seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: RB Floor Elevation: 0808 Room No: 1-154I

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 1-8948A, VALVE, QUALIFIED BY ANALYSIS, WECM-0117

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE -

D. Evaluated By:

000508

Name: Paul N Tresalingo Date: 6-1-94

Name: D Laparankar Date: 6/1/94

Name: Date: 6/1/94

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 1

A. DESCRIPTION

Walkdown Area Identification

Building: RB Floor Elevation: 808' Room No.: 1-154A
1-154D
1-155A
1-1550

B. EQUIPMENT EVALUATION

Success Path Equipment In Room – CONTAINMENT SYSTEMS

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	INST AIR HDR TO CONTAINMENT CHECK VALVE	1CI-0030	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	LETDOWN CONTAINMENT IRC ISOL. VALVE	1-8160	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CT TRAIN A HDR IRC CHECK VALVE	1CT-0142	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	Rx CAVITY SUMP & CONT SUMP DISCH HDRC IRC ISOL VALVE	1-HV-5158	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CONTAINMENT CCW DRN TANK 1-02 IRC ISOL VALVE	1-HV-4725	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	CT TRAIN A HDR IRC ISOL VALVE	1CT-0141	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	CONTAINMENT PRESS RLF SYS IRC ISOL DAMPER AO	1-HV-5549	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 1-154A 1-154D 1-155A 1-155D seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 8 of 8

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: RB

Floor Elevation: 808'

Room No: 1-154A 1-155A
1-154D 1-155D

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1 ICI-0030, VALVE, QUALIFIED BY ANALYSIS, SEQSP-MS 208.1-004

2. 1-8160 VALVE ASSEMBLY, QUALIFIED BY TEST AND ANALYSIS, SEQSP WECM-094, BRP-CS-1-RB-035

3. ICT-0142 VALVE QUALIFIED BY ANALYSIS, SEQSP MS 208.1-007

4 1-HV-5158, VALVE ASSEMBLY, QUALIFIED BY TEST AND ANALYSIS SEQSP-MS-604-01, BRP-VD-1-RB-005

5. 1-HV-4725, VALVE ASSEMBLY, QUALIFIED BY TEST AND ANALYSIS SEQSP-MS-600-018, BRP-CC-1-RB-051

6 ICT-0141, VALVE QUALIFIED BY ANALYSIS, SEQSP MS 208.1-026

7. 1-HV-5549, VALVE ASSEMBLY, QUALIFIED BY TEST AND ANALYSIS, SEQSP-MS 86-03, BRP-VA-1-RB-004

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: NONE

D. Evaluated By:

Name: Paul N Pundey Date: 6-1-94

Name: D Patankar Date: 6/1/94

Name: Date: 6/1/94

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
SUMP#1	TRAIN A CONTAINMENT RECIRCULATION SUMP	RHSEGA9	TRUE		RB								
CP2-CHFHCH-01	RHR PUMP RM EMER FAN COIL UNIT 2-01 CHILLED WTR SPLY FLEX HOSE 2-01	RHSEGA20	TRUE	CHS	SG	✓ 2-053	773	I	NA	A	HOFL	CPD-0322-001 ✓	✓ N
CP2-CHFHCH-02	RHR PUMP RM EMER FAN COIL UNIT 2-01 CHILLED WTR RET FLEX HOSE 2-02	RHSEGA20	TRUE	CHS	SG	2-053	773	I	NA	A	HOFL	CPD-0322-001 ✓	✓ N
CP2-VAAUSE-01	RESIDUAL HEAT REMOVAL PUMP 2-01 ROOM FAN COOLER FAN 2-01	RHSEGA20	TRUE	VAS	SG	2-053	773	I	NA	A	AIRH	MS-0081-002 ✓	✓ Y
TCX-RHAPRH-01	RESIDUAL HEAT REMOVAL PUMP 2-01	RHSEGA2	TRUE	RH	SG	2-053	773	I	NA	A	PUMP	WECM-0032 ✓	✓ Y
2-FIS-0610	RESIDUAL HEAT REMOVAL PUMP 2-01 DISCHARGE FLOW INDICATING SWITCH	RHSEGA2	TRUE	RH	SG	✓ 2-054	773	I	A	A	SWFL	MS-0616-001	✓ Y
CP2-CHFHCH-21	CT PUMP RM EMER FAN COIL UNIT 2-11 CHILLED WATER SPLY FLEX HOSE 2-21			CHS	SG	2-054	773	I	NA	A	HOFL	CPD-0322-001	✓ N
CP2-CHFHCH-22	CT PUMP RM EMER FAN COIL UNIT 2-11 CHILLED WATER RET FLEX HOSE 2-22			CHS	SG	2-054	773	I	NA	A	HOFL	CPD-0322-001	✓ N
CP2-CTAPCS-01	CONTAINMENT SPRAY PUMP 2-01			CT	SG	2-054	773	I	NA	A	PUMP		✓ Y
CP2-VAAUSE-11	CONTAINMENT SPRAY PUMP 2-01/2-03 ROOM FAN COOLER FAN 2-11			VAS	SG	2-054	773	I	NA	A	AIRH	MS-0081-004	✓ Y
2-FIS-4542	CT PUMP 2-01 & 2-03 SEAL COOLER CCW OUTLET FLOW INDICATING SWITCH			CC	SG	✓ 2-056B	773	I	C	A	SWFL	MS-0618-001	✓ N —
2CC-0098	CT PMP 2-01 SL CLR CCW UPSTRM RET ISOL VLV			CC	SG	2-056B	773	I	NA	A	VAME	MS-20A 1-015	✓ N
2CC-0266	CT PMP 2-01 SL CLR CCW DNSTRM RET ISOL VLV			CC	SG	2-056B	773	I	NA	A	VAME	MS-20A 1-015	✓ N
2CC-0280	CT PMP 2-01/2-03 SL CLR CCW RET FLO IND SW 4542 UPSTRM ISOL VLV			CC	SG	2-056B	773	I	NA	A	VAME	MS-20A 1-015	✓ N
2CC-0095	CT PMP 2-01 SL CLR CCW SPLY ISOL VLV			CC	SG	2-056B	773	I	NA	A	VAME	MS-20A 1-015	✓ N
[illegible]	CT PMP EMER FN COIL UNIT 2-11 CHLWTR SPLY ISOL VLV			CHS	SG	2-056B	773	I	NA	A	VAME	MS-20A 1-014	✓ N

000511

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
2CH-0367	CT PMP EMER FN COIL UNIT 2-11 CH WTR RET ISOL VLV			CHS	SG	2-056B	773	I	NA	A	VAME	MS-20A 1-014	N✓
2SW-0367	CT PMP 2-01 BRG CLR SSW OUT THROT VLV			SW	SG	2-056B	773	I	NA	A	VAME	MS-20A 1-011	N✓
2SW-0368	CT PMP 2-01 BRG CLR SSW IN ISOL VLV			SW	SG	2-056B	773	I	NA	A	VAME	MS-20A 1-011	N✓
CP2-SWSRCS-01	CONTAINMENT SPRAY PUMPS 2-01/2-03 BEARING COOLER SSW INLET STRAINER			SW	SG	2-056B	773	I	NA	A	STRN	MS-0029A-001	N✓
2SW-0420	CT PMP 2-01/2-03 BRG CLR SSW IN VLV			SW	SG	2-056B	773	I	NA	A	VAME	MS-20A 1-037	N✓
CP2-SWSRSI-01	SAFETY INJECTION PUMP 2-01 LUBE OIL COOLER SSW INLET STRAINER	SISEGAL1	TRUE	SW	SG	✓ 2-062	773	I	NA	A	STRN	MS-0029A-001	N✓
CP2-VAAUSE-05	SAFETY INJECTION PUMP 2-01 ROOM FAN COOLER FAN 2-05	SISEGAI6	TRUE	VAS	SG	2-062	773	I	NA	A	AIRH	MS-0081-003	Y
TCX-SIAPSI-01	SAFETY INJECTION PUMP 2-01	SISEGAI1	TRUE	SI	SG	2-062	773	I	NA	A	PUMP	WECM-0028	Y
2-8804B	RHR PMP 2-02 TO SI PMP SUCT VLV	SISEGXR1	TRUE	SI	SG	✓ 2-062E	785	I	NA	B	VAME	WECM-0109	N
2-8926	SI PMP 2-01/2-02 SUCT CHK VLV	SISEGXI1	TRUE	SI	SG	2-062E	785	I	NA	NA	VAME	WECM-0114	N
2-8730A	RHR HX 2-01 OUT CHK VLV	RHSEGA3C	TRUE	RH	SG	2-062F ✓	785	I	NA	A	VAME	WECM-0115	N
2-8804A	RHR PMP 2-01 TO CCP SUCT VLV	CSSEGW7	TRUE	CS	SG	2-062F	785	I	NA	A	VAME	WECM-0109	N
2-8814A	SI PMP 2-01 MINIFLO VLV	SISEGAI2	TRUE	SI	SG	2-062F	785	I	NA	A	VAME	WECM-0056	N
2-8821A	SI PMP 2-01 XTIE VLV	SISEGAI4	TRUE	SI	SG	2-062F	785	I	NA	A	VAME	WECM-0131	N
2-8922A	SI PMP 2-01 DISCH CHK VLV	SISEGAI1	TRUE	SI	SG	2-062F	785	I	NA	A	VAME	WECM-0124	N
2-8958A	RWST 2-01 TO RHR PMP 2-01 CHK VLV	RHSEGA1	TRUE	RH	SG	2-062F	785	I	NA	A	VAME	WECM-0118	N
2-8969A	RHR TO CCP 2-01/2-02 SUCT CHK VLV	CSSEGW7	TRUE	CS	SG	2-062F	785	I	NA	NA	VAME	WECM-0119	N
2-FCV-0618	RHR HX 2-01 BYP FLO CTRL VLV	RHSEGA16	TRUE	RH	SG	2-062F	785	I	NA	A	VACF	WECM-0043	N
2-HCV-0606	RHR HX 2-01 FLO CTRL VLV	RHSEGA3	TRUE	RH	SG	2-062F	785	I	NA	A	VACF	WECM-0042	N
2-8969B	RHR TO SI PMP 2-01/2-02 SUCT CHK VLV	SISEGXR1	TRUE	CS	SG	2-062G ✓	790	I	NA	NA	VAME	WECM-0119	✓ N
2-8811A	CNTMT SMP TO RHR PMP 2-01 SUCT ISOL VLV	RHSEGA10	TRUE	RH	SG	2-065 ✓	790	I	NA	A	VAME	WECM-0112	✓ N
2-HV-4782	CNTMT SMP TO CS PMP 2-01/2-03 SUCT ISOL VLV			CT	SG	2-065	790	I	NA	A	VAME		✓ N

000512

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
2-8807A	U2 SIP/CCP SUCT HDR XTIE VLV 8807A	SISEGXR3	TRUE	SI	SG	2-067✓	790	I	NA	A	VAME	WECM-0110	✓N
2-8813	SI PMP 2-01/2-02 MINIFLO RET VLV	SISEGXI2	TRUE	SI	SG	2-067	790	I	NA	NA	VAME	WECM-0056	-N
2-FCV-0610	RHR PMP 2-01 MINIFLO VLV	RHSEGA2	TRUE	RH	SG	2-067	790	I	NA	A	VACF	WECM-0007	•N
2-FV-4772-1	CT PMP 2-01 RECIRC VLV			CT	SG	2-067	790	I	NA	A	VACF	MS 600-009	•N
2CT-0050	CT PMP 2-01/2-03 DISCH TST LN ISOL VLV			CT	SG	2-067	790	I	NA	A	VAME	MS 206.1-23	-N
2CT-0084	CT PMP 2-01 SUCT ISOL VLV			CT	SG	2-067	790	I	NA	A	VAME	MS 206.1-25	-N
2CT-0097	CT PMP 2-01 DISCH ISOL VLV			CT	SG	2-067	790	I	NA	A	VAME	MS 206.1-23	✓N ✓
TCX-RHAHRS-01	RESIDUAL HEAT REMOVAL HEAT EXCHANGER 2-01	RHSEGA2	TRUE	RH	SG	2-069✓	790	I	NA	A	HTXC	WECM-0064	✓Y ✓
CP2-CTAHCS-01	CONTAINMENT SPRAY HEAT EXCHANGER 2-01			CT	SG	2-069	790	I	NA	A	HTXC	MS 60-001	✓Y ✓ ~~NEED~~
2-8806	RWST 2-01 TO SI PMP SUCT VLV	SISEGXI1	TRUE	SI	SG	2-070✓	790	I	NA	NA	VAME	WECM-0103	✓N ✓
2-8812A	RWST 2-01 TO RHR PMP 2-01 SUCT VLV	RHSEGA18	TRUE	RH	SG	2-070	790	I	NA	A	VAME	WECM-0113	✓N ✓
2-HV-4572	RHR HX 2-01 CCW RET VLV	RHSEGA11	TRUE	CC	SG	2-070	790	I	NA	A	VACF	MS-0600-033	✓N ✓
2-FT-4556	RHR HEAT EXCHANGER 2-01 CCW RETURN FLOW TRANSMITTER		TRUE	CC	SG	2-070	790	I	A	A	XMTR	MS-0611A-002	✓Y ✓
2-HV-4395	SSW TRN A TO U2 AFW PMP SUCT VLV		TRUE	SW	SG	2-070	790	I	NA	A	VACF	MS-0600-030	✓N ✓
2-TE-4557	RHR HEAT EXCHANGER 2-01 CCW RETURN TEMPERATURE ELEMENT		TRUE	CC	SG	2-070	790	I	A	A	EMNT	MS-0622-001	•N ✓
2-HV-4574	CT HX 2-01 CCW RET VLV			CC	SG	2-070	790	I	NA	A	VACF	MS-0600-033	•N ✓
2CC-0107	CT HX 2-01 CCW SPLY ISOL VLV			CC	SG	2-070	790	I	NA	A	VAME	MS-0020C-006	✓N ✓
2AF-0014	CST TO MD AFW PMP 2-01 SUCT CHK VLV	AFSEGA1	TRUE	AF	SG	2-072✓	790	I	NA	A	VAME	MS-20B 1-005	✓N
2AF-0065	MD AFW PMP 2-01 DISCH CHK VLV	AFSEGA2	TRUE	AF	SG	2-072	790	I	NA	A	VAME	MS-20B 1-006	✓N
CP2-AFAPMD-01	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 2-01	AFSEGA2	TRUE	AF	SG	2-072	790	I	NA	A	PUMP	MS-0007-001	✓Y
CP2-CIATAF-07	MD AFW PUMP 2-01 DISCHARGE TO SG 2-01 FCV AIR ACCUMULATOR 2-07	AFSEGX5	TRUE	AF	SG	2-072	790	I	NA	A	ACUM	MS-0065-001	✓Y
CP2-VAAUSE-07	MOTOR DRIVEN AUX FEEDWATER PUMP 2-01 ROOM FAN COOLER FAN 2-07	AFSEGA2A	TRUE	VAS	SG	2-072	790	I	NA	A	AIRH	MS-0081-003	✓Y

000513

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
2-HV-2480	MD AFW PMP 2-01 SSW SUCT ISOL VLV		TRUE	AF	SG	2-072	790	I	NA	A	VAME	MS-20B 1-031	✓N
2-PT-2453	MD AUXILIARY FEEDWATER PUMP 2-01 DISCHARGE PRESS TRANSMITTER		TRUE	AF	SG	2-072	790	I	A	A	XMTR	MS-0611A-002	Y
2-PT-2475	MOTOR DRIVEN AUXILIARY FEEDWATER PUMP 2-01 SUCTION PRESS TRANSMITTER		TRUE	AF	SG	2-072	790	I	A	A	XMTR	MS-0611A-002	Y
2-PV-2453A	MD AFW PMP 2-01 DISCH TO SG 2-01 FLO CTRL VLV	AFSEGA3	TRUE	AF	SG	2-072	790	I	NA	A	VACF	MS-0600-005	✓N
2AF-0237	MD AFW PMP 2-01 DISCH TO SG 2-02 FCV AS UPSTRM CHK VLV	AFSEGX5	TRUE	AF	SG	2-072	790	I	NA	A	VAME	MS-0625-005	✓N
2AF-0236	MD AFW PMP 2-01 FCV TO SG 2-01 AIR SPLY DNSTRM CHK VLV	AFSEGX5	TRUE	AF	SG	2-072	790	I	NA	A	VAME	MS-0625-005	✓N
2-HV-4758	RWST TO CS PMP 2-01/2-03 SUCT VLV			CT	SG	2-076	800	I	NA	A	VAME		✓N
2-8100	U2 RCP SL WTR RET ISOL VLV	CSSEGX6	TRUE	CS	SG	2-077A	810	I	NA	NA	VAME	WECM-0056	✓N
2-8351C	RCP 2-03 SL WTR INJ VLV	CSSEGX6	TRUE	CS	SG	2-077A	810	I	NA	NA	VAME	WECM-0056	✓N
2-8351D	RCP 2-04 SL WTR INJ VLV	CSSEGX7	TRUE	CS	SG	2-077A	810	I	NA	NA	VAME	WECM-0056	✓N
2-HV-8220	U2 CHRG PMP SUCT HI PNT VNT VLV 8220	CSSEGX18	TRUE	CS	SG	2-077A	810	I	NA	NA	VASV	MS-0603-005	✓N
2-LCV-1003	LWFS RCDT 2-01 LVL CTRL VLV			WP	SG	2-077A	810	I	NA	NA	VACL		✓N
2-8106	U2 CHRG PMP TO RCS CNTMT ISOL VLV 8106	CSSEGX26	TRUE	CS	SG	2-077B	810	I	NA	NA	VAME	WECM-0134	✓
2-8152	U2 LTDN CNTMT ORC ISOL VLV	CSSEGX4	TRUE	CS	SG	2-077B	810	I	NA	NA	VACF	WECM-0094	✓
2-8351A	RCP 2-01 SL WTR INJ VLV	CSSEGX4	TRUE	CS	SG	2-077B	810	I	NA	NA	VAME	WECM-0056	✓
2-8351B	RCP 2-02 SL WTR INJ VLV	CSSEGX5	TRUE	CS	SG	2-077B	810	I	NA	NA	VAME	WECM-0056	✓
2-8801A	CCP 2-01/2-02 SI ISOL VLV 8801A	CSSEGX14	TRUE	CS	SG	2-077B	810	I	NA	NA	VAME	WECM-0129	✓
2-8802A	SI PMP 2-01 TO HL 2 & 3 INJ ISOL VLV	SISEGAR6	TRUE	SI	SG	2-077B	810	I	NA	A	VAME	WECM-0130	✓
2-8809A	RHR TO CL 2-01/2-02 INJ ISOL VLV	RHSEGA12	TRUE	RH	SG	2-077B	810	I	NA	A	VAME	WECM-0111	✓
2-8835	SI PMP 2-01/2-02 TO CL INJ ISOL VLV	SISEGX13	TRUE	SI	SG	2-077B	810	I	NA	NA	VAME	WECM-0133	✓
2-8840	RHR TO HL 2-02/2-03 INJ ISOL VLV	RHSEGX11	TRUE	RH	SG	2-077B	810	I	NA	NA	VAME	WECM-0111	✓
[illegible]	CCHX 2-01 OUT VLV			CT	SG	2-077B	810	I	NA	A	VAME		✓

000514

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
2EB1-1	T2EB1 TO 480 VAC SWITCHGEAR 2EB1 PREFERRED FEEDER BREAKER	EPSEGA07	TRUE	EPB	SG	✓ 2-083	810	I	A	A	CKBR		✓
2EB1-1/2HR/BKR	118 VAC SAFEGUARDS BOP INVERTER IV2EC1 SUPPLY BREAKER	EPSEGE08	TRUE	EC1	SG	2-083	810	I	A	NA	CKBR	ES-0007-001	Y
2EB1-1/2M/BKR	125 VDC BATTERY CHARGER BC2ED1-1 SUPPLY BREAKER	EPSEGE03	TRUE	EPD	SG	2-083	810	I	A	NA	CKBR	ES-0007-001	✓
2EB3-1	T2EB3 TO 480 VAC SWITCHGEAR 2EB3 PREFERRED FEEDER BREAKER	EPSEGA06	TRUE	EPB	SG	2-083	810	I	A	A	CKBR		
2EG1	DG 2-01 TO 6 9 KV SWGR 2EA1 EMERGENCY FEEDER BREAKER	EPSEGA03	TRUE	DG	SG	2-083	810	I	A	A	CKBR	ES-0005-001	Y
BT-2EA1	6 9 KV SWGR 2EA1 INNER BUS TIE BREAKER	EPSEGA04	TRUE	EPA	SG	2-083	810	I	A	NA	CKBR	ES-0005-001	✓
CP2-EPMCEB-01	480 VAC MOTOR CONTROL CENTER 2EB1-1	EPSEGA19	TRUE	EPC	SG	2-083	810	I	A	NA	MCCS	ES-0007-001	Y
CP2-EPSWEA-01	6 9 KV SWITCHGEAR 2EA1	EPSEGA05	TRUE	EPA	SG	2-083	810	I	A	A	SWGR	ES-0005-001	Y
CP2-EPSWEB-01	480 VAC SWITCHGEAR 2EB1	EPSEGA15	TRUE	EPB	SG	2-083	810	I	A	A	SWGR	WECM-0140	Y
CP2-EPTRET-01	6900/480 VAC TRANSFORMER (2EA1/2EB1) T2EB1	EPSEGA07	TRUE	EPB	SG	2-083	810	I	A	NA	XFMR	ES-0006-001	Y
T2EB1	6900/480 VAC TRANSFORMER T2EB1 (2EA1/2EB1) FEEDER BREAKER	EPSEGA07	TRUE	EPB	SG	2-083	810	I	A	A	CKBR	ES-0005-001	Y
2EB1/3D/COMP	480V SWGR BUS 2EB1 COMPARTMENT	EPSEGA19	TRUE	EPB	SG	2-083	810	I	A	A	COMP		S
2EB1/3C/COMP	480 SWGR BUS 2EB1 COMPARTMENT FEED TO MCC XEB1-2	EPSEGA20	TRUE	EPB	SG	2-083	810	I	A	A	COMP		S
2EB3/7C/COMP	480V SWGR BUS 2EB3 COMPARTMENT FEED TO MCC XEB3-2	EPSEGA09	TRUE	EPB	SG	2-083	810	I	A	A	COMP		S
2DO-0002	DG 2-01 FO XFER PMP 2-01 DISCH VLV	EPSEGK02	TRUE	DO	SG	✓ 2-084	810	I	NA	A	VAME	MS-20A 1-015	N
2DO-0004	DG 2-01 FO XFER PMP 2-01 DISCH CHK VLV	EPSEGK02	TRUE	DO	SG	2-084	810	I	NA	A	VAME	MS-20A 1-016	N
CP2-DOAPFT-01	DIESEL GENERATOR 2-01 FUEL OIL TRANSFER PUMP 2-01	EPSEGK02	TRUE	DO	SG	2-084	810	I	NA	A	PUMP	MS-0034-011	Y
CP2-DOSRTP-01	DIESEL GENERATOR 2-01 FUEL OIL TRANSFER PUMP STRAINER 2-01	EPSEGK02	TRUE	DO	SG	2-084	810	I	NA	A	STRN	MS-0029A-002	^ N
CP2-MEDGEE-01	DIESEL GENERATOR 2-01	EPSEGA03	TRUE	DG	SG	2-084	810	I	A	A	GENR	MS-0034-010	✓Y

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
CP2-VAAUSE-17	TRAIN A SWITCHGEAR ROOM FAN COOLER FAN 2-17	EPSEGC01	TRUE	VAS	SG	✓ 2-085A	810	I	NA	A	AIRH	MS-0081-002	✓ Y
CP2-VADPGU-60	TRAIN A SWGR ROOM FAN COOLER FAN 2-17 DISCHARGE GRAVITY DAMPER 2-60	EPSEGC01	TRUE	VAS	SG	2-085A ✓	810	I	NA	A	DMPR	MS-0084-005	✓ Y
2AF-0007	CST 2-01 TO MD AFW PMP 2-01/2-02 ISOL VLV	AFSEGX01	TRUE	AF	SG	2-085D	796	I	NA	NA	VAME	MS-0020C-004	✓ N
CP2-CTATRW-01	REFUELING WATER STORAGE TANK 2-01	CTSEGX1	TRUE	SI	SG	2-085D	796	I	NA	NA	TANK		✓ CALC
2-LT-0930	REFUELING WATER STORAGE TANK 2-01 LEVEL TRANSMITTER 0930 PROT CHAN I		TRUE	SI	SG	2-085D	796	I	A	NA	XMTR	MS-0611A-002	✓ Y
2-PT-0934	UNIT 2 CONTAINMENT PRESSURE TRANSMITTER 0934 PROTECTION CHANNEL IV			AM	SG	✓ 2-088	832	I	B	NA	XMTR		✓ Y
CP2-VADPGU-48	DIESEL GENERATOR 2-01 ROOM VENT FAN 2-25 DISCHARGE GRAVITY DAMPER	EPSEGI01	TRUE	VAD	SG	✓ 2-099B	844	I	NA	A	DMPR	MS-0084-005	✓ Y
CP2-VAFNAV-25	DIESEL GENERATOR 2-01 ROOM VENTILATION FAN 2-25	EPSEGI01	TRUE	VAD	SG	2-099B	844	I	NA	A	BLOW	MS-0092B-001	✓ Y
2-LS-3375A	DIESEL GENERATOR 2-01 FUEL OIL DAY TANK 2-01 LEVEL SWITCH 3375A	EPSEGK02	TRUE	DO	SG	✓ 2-099D	844	I	A	A	SWLV	MS-0034-018	✓ Y
2DO-0029	DG 2-01 FO DAY TK 2-01 OUT VLV	EPSEGK04	TRUE	DO	SG	2-099D	844	I	NA	A	VAME	MS-20A 1-015	✓ N
2DO-0049	DG 2-01 FO DAY TK 2-01 XFER HDR CHK VLV	EPSEGK04	TRUE	DO	SG	2-099D	844	I	NA	A	VAME	MS-20A 1-016	✓ N
CP2-DOATDT-01	DIESEL GENERATOR 2-01 FUEL OIL DAY TANK 2-01	EPSEGK04	TRUE	DO	SG	2-099D ✓	844	I	NA	A	TANK	MS-0034-016	✓ Y
2-FV-2193	SG 2-01 FW PREHTR BYP VLV	FWSEGZ2	TRUE	FW	SG	2-100B ✓	852	I	NA	NA	VACF	MS-0600-028	N ✓
2-HV-2491B	MD AFW PMP 2-01 DISCH TO SG 2-01 ISOL VLV	AFSEGA3	TRUE	AF	SG	2-100B	852	I	NA	A	VACF	MS-20B 1-035	N ✓
2AF-0075	MD AFW PMP 2-01 DISCH TO SG 2-01 CHK VLV	AFSEGA3	TRUE	AF	SG	2-100B	852	I	NA	A	VAME	MS-20B 1-001	N
2-FT-2463A	STEAM GENERATOR 2-01 AUXILIARY FEEDWATER FLOW TRANSMITTER 2463A		TRUE	AF	SG	2-100B	852	I	A	A	XMTR	MS-0611A-002	Y ✓
2-HV-2134	SG 2-01 FW ISOL VLV			FW	SG	2-100B	852	I	NA	NA	VAME	MS-20B 1-028	N ✓

000516

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
2-PT-0514	MAIN STEAM LINE 2-01 PRESSURE TRANSMITTER 0514 PROT CHAN I	ESSEGX39	TRUE	MS	SG	2-100E	852	I	A	NA	XMTR	MS-0611A-004	Y
2MS-0703	SG 2-01 ATMOS RLF VLV AIR ACCUM 2-02 ISOL VLV	MSSEGW6	TRUE	MS	SG	2-106	873	I	NA	NA	VAME	MS-0625-001	N
CP2-MSATRT-01	STEAM GENERATOR 2-02 ATMOSPHERIC RELIEF VALVE AIR ACCUMULATOR 2-01	MSSEGW3	TRUE	MS	SG	2-107	873	I	NA	NA	ACUM	MS-0065-006	Y
2MS-0663	SG 2-01 ATMOS RLF VLV AIR SPLY DNSTRM CHK VLV	MSSEGX27	TRUE		SB	2-107	873	I	NA	NA	VAME	MS-0625-005	N
2-PV-2325	SG 2-01 ATMOS RLF VLV	MSSEGX23	TRUE	MS	SG	2-109A	881	I	NA	NA		MS-0078-001	N
2MS-0026	SG 2-01 ATMOS RLF VLV UPSTRM ISOL VLV	MSSEGX23	TRUE	MS	SG	2-109A	881	I	NA	NA	VAME	MS-20B 1-021	N
2-HV-2333A	MSIV 2-01	MSSEGX9	TRUE	MS	SG	2-110A	881	I	NA	NA	VACF	MS-0076-001	N
2-8160	U2 LTDN CNTMT IRC ISOL VLV	CSSEGX5	TRUE	CS	RB	2-154A	808	I	NA	NA	VACF	WECM-0094	N
2-8701A	RHR PMP 2-01 HL 2-01 RECIRC OMB ISOL VLV	RHSEGA14	TRUE	RH	RB	2-154A	808	I	NA	A	VAME	WECM-0105	
2-8708A	RHR PMP 2-01 SUCT RLF VLV	RHSEGA15	TRUE	RH	RB	2-154A	808	I	NA	A	VARS	WECM-0036	
2-8815	CCP 2-01/2-02 TO CL INJ HDR CHK VLV	CSSEGX17	TRUE	SI	RB	2-154A	808	I	NA	NA	VAME	WECM-0120	
2-8818A	RHR TO CL 2-01 INJ CHK VLV	RHSEGA5	TRUE	SI	RB	2-154A	808	I	NA	A	VAME	WECM-0116	
2CS-8368A	RCP 2-01 SL INJ IRC CHK VLV	CSSEGX4	TRUE	CS	RB	2-154A	808	I	NA	NA	VAME	MS-20A 1-038	
2SI-8819A	SI TO CL 2-01 CHK VLV	SISEGA15	TRUE	SI	RB	2-154A	808	I	NA	NA	VAME	MS-20A 1-031	
2-8160 [illegible]	U2 LTDN CNTMT IRC ISOL VLV			CS	RB	2-154A	808	I	NA	NA	VACF	WECM-0094	
2-8841A	RHR TO HL 2-02 UPSTRM CHK VLV	RHSEGX7	TRUE	SI	RB	2-154B	808	I	NA	NA	VAME	WECM-0116	✓
2SI-8905B	SI HL 2-02 INJ UPSTRM CHK VLV	SISEGBR5	TRUE	SI	RB	2-154B	808	I	NA	A	VAME	MS-20A 1-031	✓
2-LT-4779	CONTAINMENT RECIRCULATING SUMP 2-01 LEVEL TRANSMITTER		TRUE	CT	RB	2-154B	808	I	A	A	XMTR	MS 630-01	Y ✓ 9 G.
2-8112	U2 RCP SL WTR RET ISOL VLV	CSSEGX7	TRUE	CS	RB	2-154D	808	I	NA	NA	VAME	WECM-0056	N
2CI-0030	U2 INST AIR HDR TO U2 CNTMT CHK VLV			CI	RB	2-154D	808	I	NA	NA	VAME	MS-20B 1-004	
2-HV-5158	RX CAV SMP & CNTMT SMP 2-01/2-02 DISCH HDR IRC ISOL VLV			VD	RB	2-154D	808	I	NA	NA	VACF	MS604-01	✓
2-8948A	SI ACCUM 2-01 DNSTRM INJ CHK VLV	RHSEGA7	TRUE	SI	RB	2-154I	812	I	NA	NA	VAME	WECM-0117	
2CS-8350A	RCP 2-01 SL WTR INJ CHK VLV	CSSEGX4	TRUE	CS	RB	2-154I	812	I	NA	NA	VAME	MS-20A 1-038	
2CS-8367A	RCP 2-01 SL INJ IMB CHK VLV	CSSEGX4	TRUE	CS	RB	2-154I	812	I	NA	NA	VAME	MS-20A 1-038	
2SI-[illegible]A	CCP 2-01/2-02 TO CL 2-01 CHK VLV	CSSEGX20	TRUE	SI	RB	2-154I	812	I	NA	NA	VAME	MS-20A 1-030	

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
✓ 2-8949B	SI TO HL 2-02 DNSTRM INJ CHK VLV	RHSEGX8	TRUE	SI	RB	2-154J ✓	812	I	NA	NA	VAME	WECM-0116	N ✓
✓ 2CS-8350B	RCP 2-02 SL WTR INJ CHK VLV	CSSEGX5	TRUE	CS	RB	2-154J	812	I	NA	NA	VAME	MS-20A 1-038	✓
✓ 2CS-8350C	RCP 2-03 SL WTR INJ CHK VLV	CSSEGX6	TRUE	CS	RB	2-154K ✓	812	I	NA	NA	VAME	MS-20A 1-038	↓
✓ 2CS-8350D	RCP 2-04 SL WTR INJ CHK VLV	CSSEGX7	TRUE	CS	RB	2-154L ✓	812	I	NA	NA	VAME	MS-20A 1-038	↓
✓ 2CT-0141	U2 CT TRN A HDR IRC ISOL VLV			CT	RB	2-155D ✓	832	I	NA	A	VAME	MS2081-026	N 3
✓ 2-HV-4725	CNTMT CCW DRN TK 2-02 IRC ISOL VLV			CC	RB	2-155G ✓	832	I	NA	NA	VACF	MS-0600-018	N
✓ 2-PT-0455	PRESSURIZER 2-01 PRESSURE TRANSMITTER 0455 PROT CHAN I	RCSEGX1	TRUE	RC	RB	2-155L ✓	862	I	A	NA	XMTR	MS-0611A-004	Y
✓ 2FW-0196	SG 2-01 FW PREHTR BYP IRC CHK VLV	AFSEGX03	TRUE	FW	RB	2-155L	862	I	NA	NA	VAME	MS-20B 1-003	N
✓ 2-HV-5549	U2 CNTMT PRESS RLF SYS IRC ISOL DMPR			VAC	RB	2-155M ✓	860	I	NA	NA	OPDP	MS-86-03	Y ?- N
✓ 2SI-0170	PRZR 2-01 PORV 0455A N2 ACCUM 2-02 ISOL VLV	RCSEGA3	TRUE	RC	RB	2-160A ✓	905	I	NA	NA	VAME	MS-20A 1-012	N
✓ 2SI-0180	PRZR 2-01 PORV 0455A N2 SPLY ISOL VLV	RCSEGA3	TRUE	RC	RB	2-160A	905	I	NA	NA	VAME	MS-20A 1-012	N
✓ CP2-SIATRT-02	POWER OPERATED RELIEF VALVE 0455A NITROGEN ACCUMULATOR 2-02	RCSEGA3	TRUE	RC	RB	2-160A	905	I	NA	NA	TANK	MS-0065-005	Y
✓ 2RC-8053B	PRZR 2-01 PRESS XMTR 0456/0458/LVL XMTR 0460 UP RT VLV	RCSEGX4A	TRUE	RC	RB	2-161D ✓	877	I	NA	NA	VAME	MS-20A 1-018	N
✓ 2-8000A	PRZR 2-01 PORV 0455A BLK VLV	RCSEGA03	TRUE	RC	RB	2-161E ✓	905	I	NA	NA	VAME	WECM-0134	N
✓ 2-8010A	PRZR 2-01 SFTY VLV A	RCSEGC1	TRUE	RC	RB	2-161E	905	I	NA	NA	VARS	WECM-0038	N
✓ 2-PCV-0455A	PRZR 2-01 PORV 0455A	RCSEGA01	TRUE	RC	RB	2-161E	905	I	NA	NA	VACP	WECM-0090	N
2-PT-4552	SAFETY CHILLER 2-05 CHILLER GAS PRESSURE TRANSMITTER	CHSEGA2	TRUE	CC	CB	X-115B ✓	778	I	A	A	XMTR	MS-0611A-002	Y
2-PV-4552	SFTY CHLR 2-05 CCW RET PRESS CTRL VLV	CHSEGA2	TRUE	CC	CB	X-115B	778	I	NA	A	VACP	MS-0600-101	N
CP2-CHAPCP-05	SAFETY CHILLED WATER RECIRC PUMP 2-05	CHSEGA1	TRUE	CHS	CB	X-115B	778	I	NA	A	PUMP	MS-0015C-001	Y
CP2-CHCICE-05	SAFETY CHILLER 2-05	CHSEGA1	TRUE	CHS	CB	X-115B	778	I	NA	A	CHLR	MS-0080B-001	Y
CP2-CIATCC-01	SAFETY CHILLER 2-05 CCW RETURN PCV AIR ACCUMULATOR 2-01	CHSEGA3	TRUE	CC	CB	X-115B	778	I	NA	A	ACUM	MS-0065-100	Y

000518

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
2CC-1092	SFTY CHLR 2-05 CCW RET PRESS CTRL VLV AIR ACCUM 2-01 UPSTRM CHK VLV	CHSEGA3	TRUE	CC	CB	X-115B	778	I	NA	A	VAME	MS-0625-005	N ✓
2CC-1091	SFTY CHLR 2-05 CCW RET PRESS CTRL VLV AIR ACCUM 2-01 DNSTRM CHK VLV	CHSEGA3	TRUE	CC	CB	X-115B	778	I	NA	A	VAME	MS-0625-005	N ✓
2ED1/1-5/DSW	125 VDC DISTRIBUTION PANEL 2ED1-2 FUSED DISCONNECT SWITCH	EPSEGE18	TRUE	EPD	CB	X-120 ✓	792	I	A	NA	SWFU	ES-0011-002	S ~~Y~~ N
2ED1/2-8/BKR	125 VDC BATTERY CHARGER BC2ED1-1 TO 125 VDC SWBD 2ED1 FEEDER BREAKER	EPSEGE03	TRUE	EPD	CB	X-120	792	I	A	NA	CKBR	ES-0011-002	S N
2ED3/1-1/DSW	125 VDC BATTERY BT2ED3 FUSED DISCONNECT SWITCH	EPSEGE22	TRUE	EPD	CB	X-120	792	I	A	A	SWFU	ES-0011-002	S N
2ED3/2-8/BKR	125 VDC BATTERY CHARGER BC2ED3-1 TO 125 VDC SWBD 2ED3 FEEDER BREAKER	EPSEGE23	TRUE	EPD	CB	X-120	792	I	A	A	CKBR	ES-0011-002	S N
CP2-ECIVEC-01	118 VAC SAFEGUARDS BALANCE OF PLANT INVERTER IV2EC1	EPSEGE06	TRUE	ECI	CB	X-120	792	I	A	NA	IVTR	ES-0009-001	Y
CP2-EPBCED-01	125 VDC BATTERY CHARGER BC2ED1-1	EPSEGE03	TRUE	EPD	CB	X-120	792	I	A	NA	BTCG	ES-0008B-002	Y
CP2-EPSWED-01	125 VDC SWITCHBOARD 2ED1	EPSEGE02	TRUE	EPD	CB	X-120	792	I	A	NA	SWGR	ES-0011-002	Y
TCX-ESELIV-01	118 VAC REACTOR PROTECTION SYSTEM (CHANNEL I) INVERTER IV2PC1	EPSEGE13	TRUE	ECI	CB	X-120	792	I	A	NA	IVTR	WECM-0139	Y
CP2-EPBTED-03	125 VDC STATION BATTERY BT2ED3	EPSEGE22	TRUE	EPD	CB	X-123 ✓	792	I	A	A	BTRY	ES-0008A-002	Y
CP2-ECDPEC-01	118 VAC INSTRUMENT DISTRIBUTION PANEL 2EC1	EPSEGE10	TRUE	ECI	CB	X-134 ✓	807	I	A	NA	PNBD	ES-0010-001	Y
CP2-ECDPED-01	125 VDC DISTRIBUTION PANEL 2ED1-1	EPSEGE17	TRUE	EPD	CB	X-134	807	I	A	NA	PNBD	ES-0011-003	Y
CP2-ECDPPC-01	118 VAC INSTRUMENT DISTRIBUTION PANEL (CHANNEL I) 2PC1	EPSEGE16	TRUE	EPS	CB	X-134	807	I	A	NA	PNBD	ES-0010-9	Y ?
2EC1/06/BKR 1	IV2EC1 TO 118 VAC INSTRUMENT DISTR PANEL 2EC1 PREFERRED FEEDER BREAKER	EPSEGE07	TRUE	ECI	CB	X-134	807	I	A	NA	CKBR	ES-0010-001	SN

000519

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
2PC1/00/BKR-1	IV2PC1 TO 118 VAC INSTRUMENT DISTR PANEL 2PC1 PREFERRED FEEDER BREAKER	EPSEGE14	TRUE	ECI	CB	X-134	807	I	A	NA	CKBR	ES-0010-001	SN
2PC3/00/BKR-1	IV2PC3 TO 118 VAC INSTRUMENT DISTR PANEL 2PC3 PREFERRED FEEDER BREAKER	EPSEGE38	TRUE	ECI	CB	X-134	807	I	A	NA	CKBR	ES-0010-001	SN
CP2-ECPRCR-01	SOLID STATE SAFEGUARDS SEQUENCER CABINET A 2-CR-01	ESSEGD45	TRUE	ES	CB	X-135 ✓	830	I	A	NA		ES-0022-001	Y
2-CR01/15Q	+15V (ESFAS) POWER SUPPLY	ESSEGD24	TRUE		CB	X-135	830				PWRS	ES 0022-001	Y
2-CR01/48Q	48V (ESFAS) POWER SUPPLY	ESSEGD22	TRUE		CB	X-135	830				PWRS		Y
2-FI-4556	RHR HX 1 CCW RET FLO		TRUE	CC	CB	X-135	830	I	A	A	INDR	MS-0605-028	N
2-TI-4557	RHR HX 1 CCW RET TEMP		TRUE	CC	CB	X-135	830	I	A	A	INDR	MS-0605-028	N
2/1-RT	CONTROL ROOM REACTOR TRIP HANDSWITCH	ESSEGRT7	TRUE		CB	X-135	830				SWHI	MS-605-01	SN
CP2-VADPGU-42	BATTERY ROOM 2-1 EXHAUST FAN 2-08 DISCHARGE GRAVITY DAMPER	EPSEGG01	TRUE	VAB	CB	X-151B ✓	854	I	NA	NA	DMPR	MS-0084-005	Y
2SW-0017	U2 SSW TRN A SPLY HDR IN CHK VLV	SWSEGA4	TRUE	SW	AB	X-162 ✓	785	I	NA	A	VAME	MS-20B 1-008	N
2-FT-4536A	CCW HEAT EXCHANGER 2-01 OUTLET FLOW TRANSMITTER		TRUE	CC	AB	X-162	785	I	A	A	XMTR	MS-0611A-002	Y
2-HV-4514	U2 SFGD LOOP TRN A CCW SPLY VLV	CCSEGA3	TRUE	CC	AB	X-165 ✓	790	I	NA	A	VACF	MS-0600-029	N
2-HV-4526	U2 NON-SFGD LOOP CCW UPSTRM SPLY VLV	CCSEGX1	TRUE	CC	AB	X-174 ✓	790	I	NA	NA	VACF	MS-0600-029	N
2-HV-4527	U2 NON-SFGD LOOP CCW DNSTRM SPLY VLV	CCSEGX1	TRUE	CC	AB	X-174	790	I	NA	NA	VACF	MS-0600-029	N
CP2-CCAHHX-01	COMPONENT COOLING WATER HEAT EXCHANGER 2-01	CCSEGA1	TRUE	CC	AB	X-175 ✓	790	I	NA	A	HTXC	MS-0049-001	Y
2-TE-4530	CCW HEAT EXCHANGER 2-01 OUTLET TEMPERATURE ELEMENT 4530		TRUE	CC	AB	X-175	790	I	A	A	EMNT	MS-0622-001	N
CP2-SWSRCH-01	CENTRIFUGAL CHARGING PUMP 2-01 LUBE OIL COOLER SSW INLET STRAINER	CSSEGA1L	TRUE	SW	AB	X-195 ✓	810	I	NA	A	STRN	MS-0029A-001	N

000520

UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
CP2-VAAUSE-03	CENTRIFUGAL CHARGING PUMP 2-01 ROOM FAN COOLER FAN 2-03	CSSEGR1	TRUE	VAA	AB	X-195 ✓	810	I	NA	NA	AIRH	MS-0081-003	Y
TCX-CSAPCH-01	CENTRIFUGAL CHARGING PUMP 2-01	CSSEGA1	TRUE	CS	AB	X-195	810	I	NA	A	PUMP	WECM-0031	Y
2SW-0413	CCP 2-01 L\O CLR STRN 2-01 SSW IN ISOL VLV	CSSEGA1L	TRUE	SW	AB	X-195	810	I	NA	A	VAME	MS-20A 1-029	N
2-8110	CCP 2-01/2-02 DNSTRM MINIFLO VLV	CSSEGX24	TRUE	CS	AB	X-202 ✓	810	I	NA	NA	VAME	WECM-0056	N ✓
2-8481A	CCP 2-01 DISCH CHK VLV	CSSEGA1	TRUE	CS	AB	X-202	810	I	NA	A	VAME	WECM-0123	N ✓
2-8546	RWST 2-01 TO CHRG PMP SUCT CHK VLV	CSSEGW6	TRUE	CS	AB	X-202	810	I	NA	NA	VAME	WECM-0114	N ✓
2-HCV-0182	U2 RC PMP SL WTR PRESS CTRL VLV	CSSEGX1	TRUE	CS	AB	X-202	810	I	NA	NA	VACF	WECM-0090	N ✓
2CS-8345	U2 RC PMP SL WTR INJ VLV	CSSEGX3	TRUE	CS	AB	X-202	810	I	NA	NA	VAME	MS-20A 1-029	N ✓
2CS-8387A	CCP 2-01 ALT SL INJ VLV		TRUE	CS	AB	X-202	810	I	NA	NA	VAME	MS-20A 1-033	N ✓
2CC-0031	CCW PMP 2-01 DISCH CHK VLV	CCSEGA1	TRUE	CC	AB	X-204	810	I	NA	A	VAME	MS-20B 2-006	N
CP2-CCAPCC-01	COMPONENT COOLING WATER PUMP 2-01	CCSEGA1	TRUE	CC	AB	X-204 ✓	810	I	NA	A	PUMP	MS-0011-001	Y
CP2-VAAUSE-09	COMPONENT COOLING WATER PUMP 2-01 ROOM FAN COOLER FAN 2-09	CCSEGA7	TRUE	VAA	AB	X-204	810	I	NA	A	AIRH	MS-0081-004	Y
2-PT-4520	COMPONENT COOLING WATER PUMP 2-01 DISCHARGE PRESSURE TRANSMITTER		TRUE	CC	AB	X-204	810	I	A	A	XMTR	MS-0611A-002	Y
2-HV-4512	U2 SFGD LOOP TRN A CCW RET VLV	CCSEGA3	TRUE	CC	AB	X-207 ✓	810	I	NA	A	VACF	MS-0600-029	N
2-HV-4524	U2 NON-SFGD LOOP CCW DNSTRM RET VLV	CCSEGX1	TRUE	CC	AB	X-207	810	I	NA	NA	VACF	MS-0600-029	N
2-HV-4525	U2 NON-SFGD LOOP CCW UPSTRM RET VLV	CCSEGX1	TRUE	CC	AB	X-207	810	I	NA	NA	VACF	MS-0600-029	N
2-LCV-0112D	RWST 2-01 TO CHRG PMP SUCT VLV 0112D	CSSEGW4	TRUE	CS	AB	X-207	810	I	NA	NA	VACL	WECM-0103	N
2SW-0359	CCP 2-01 L\O CLR SSW OUT THROT VLV	CSSEGA1L	TRUE	SW	AB	X-207	810	I	NA	A	VAME	MS-20A 1-029	N
2-8511A	CCP 2-01 ALT MINIFLO UPSTRM ISOL VLV	CSSEGW9	TRUE	CS	AB	X-208 ✓	822	I	NA	A	VAME	WECM-0055	N
[illegible]	REACTOR COOLANT PUMP SEAL WATER INJECTION FILTER 2-02	CSSEGX3	TRUE	CS	AB	X-228B ✓	842	I	NA	NA	FLTR	WECM-0069	N

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UNIT 2
SEISMIC SAFE SHUTDOWN EQUIPMENT
WALKDOWN LIST

TAG	DESCRIPTION	SEGMENT	SSEL	SYS	BLDG	ROOM	ELEV	SEIS CAT	TRAIN ELEC	TRAIN MECH	TYPE	SUMM_PACK	COMMENT
2CS-8382B	RC PMP SL WTR INJ FILT 2-02 OUT VLV UVG-43	CSSEGX3	TRUE	CS	AB	✓ X-230	842	I	NA	NA	VAME	MS-20A 1-037	N
CP2-CCATST-01	COMPONENT COOLING WATER SURGE TANK 2-01	CCSEGX3	TRUE	CC	AB	X-245 ✓	874	I	NA	NA	TANK	MS-0065-004	Y — ✓
CP2-CHATST-01	SAFETY CHILLED WATER SURGE TANK 2-01	CHSEGX1	TRUE	CHS	AB	X-245	874	I	NA	NA	TANK	MS-0065-007	Y ✓
2-LS-6712	SAFETY CHILLED WATER SURGE TANK 2-01 LEVEL SWITCH 6712		TRUE	CHS	AB	X-245	874	I	A	A	SWLV	MS-0620-001	N ✓
2-LT-4500	COMPONENT COOLING WATER SURGE TANK 2-01 TRAIN A LEVEL TRANSMITTER		TRUE	CC	AB	X-245	874	I	A	A	XMTR	MS-0611A-002	Y ✓
2SW-0068	SSW PMP 2-01 BRG WTR STRN 2-01 OUT VLV	SWSEGA2	TRUE	SW	SW	X-275 ✓	796	I	NA	A	VAME	MS-20A 1-011	N
2SW-0074	SSW PMP 2-01 BRG WTR STRN 2-02 IN VLV	SWSEGA2	TRUE	SW	SW	X-275	796	I	NA	A	VAME	MS-20A 1-011	N
2SW-0084	SSW PMP 2-01 TO TRN A BRG WTR STRN CHK VLV	SWSEGA2	TRUE	SW	SW	X-275	796	I	NA	A	VAME	MS-20A 1-004	N
2SW-0374	SSW PMP 2-01 DISCH CHK VLV	SWSEGA1	TRUE	SW	SW	X-275	796	I	NA	A	VAME	MS-20B 3-001	N
CP2-SWAPSW-01	STATION SERVICE WATER PUMP 2-01	SWSEGA1	TRUE	SW	SW	X-275	796	I	NA	A	PUMP	MS-0010-001	Y
CP2-SWSRPL-02	STATION SERVICE WATER PUMP 2-01 BEARING WATER STRAINER 2-02	SWSEGA2	TRUE	SW	SW	X-275	796	I	NA	A	STRN	MS-0029A-003	N
2-FT-4258	STATION SERVICE WATER PUMP 2-01 DISCHARGE FLOW TRANSMITTER		TRUE	SW	SW	X-275	796	I	A	A	XMTR	MS-0611A-002	Y
2-PT-4252	STATION SERVICE WATER PUMP 2-01 DISCHARGE PRESSURE TRANSMITTER		TRUE	SW	SW	X-275	796	I	A	A	XMTR	MS-0611A-002	Y
2SW-0401	SSW PMP 2-01 BRG WTR STRN 2-06 IN VLV	SWSEGA2	TRUE	SW	SW	X-275	796	I	NA	A	VAME	MS-20A 1-126	N
2SW-0400	SSW PMP 2-01 BRG WTR STRN 2-06 OUT VLV	SWSEGA2	TRUE	SW	SW	X-275	796	I	NA	A	VAME	MS-20A 1-126	N
2SW-0406	SSW PMP 2-01 BRG WTR STRN 2-05/06 BYP THROT VLV	SWSEGA2	TRUE	SW	SW	X-275	796	I	NA	A	VAME	MS-20A 1-018	N
CP2-AFATCS-01	CONDENSATE STORAGE TANK 2-01	AFSEGX14	TRUE	AF		X-YARD	810	I	NA	NA	TANK		Y calc
CP2-DOATST-01	DIESEL GENERATOR 2-01 FUEL OIL STORAGE TANK 2-01	EPSEGK01	TRUE	DO		X-YARD	810	I	NA	A	TANK	MS-0067A-001	Y calc

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Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 785' Room No.: X-162

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U2 SSW TRN A SPLY HDR IN CHK VLV	2SW-0017	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CCW HX 2-01 OUTLET FLOW TRANSMITTER	2-FT-4536A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 162 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB Floor Elevation: 785' Room No: x-162

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-20B.1-008 in line mounted
2. SEQSP-MS-0611A-002, Anchorage-16345-EM(B)-048-CZC

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DGPatankar Date: 6/13/95

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 790' Room No.: X-165

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U2 SFGD LOOP TRN A CCW SPLY VLV	2-HV-4514	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-165 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB   Floor Elevation: 790'   Room No: X-165

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS-0600-029. NO ANCHORAGE REQD, INLINEMOUNTED VALVE

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DGPatankar   Date: 6/13/95   000526

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 790′ Room No.: X-174

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U2 NON-SFGD LOOP CCW UPSTRM SPLY VLV	2-HV-4526	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	U2 NON-SFGD LOOP CCW DNSTRM SPLY VLV	2-HV-4527	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-174 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB Floor Elevation: 790' Room No: X-174

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1,2. SEQSP MS-0600-029

NO ANCHORAGE REQUIRED; INLINE MOUNTED VALVE

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000528

Name: DGPatankar Date: 6/13/95

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 790' Room No.: X-175

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CCW HX 2-01	CP2-CCAHHX-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CCW HX 2-01 OUTLET TEMP ELEMENT 4530	2-TE-4530	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-175 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB   Floor Elevation: 790'   Room No: K-175

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS-0049-001 Rev4; BY ANALYSIS
   ANCHORAGE CALC 16345-CS(B)-700A52 Rev0

2. SEQSP MS-0622-001;
   ANCHORAGE NOT REQUIRED

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DGpatankar   Date: 6/13/95

Name: SKKapyak   Date: June 12, 1995

Name: Date: 6-13-95

000530

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification
Building: AB Floor Elevation: 810' Room No.: X-195

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CCP 2-01 LO CLR SSW INLET STRNR	CP2-SWSRCH-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CCP 2-01 ROOM FAN CLR FAN 2-03	CP2-VAAUSE -03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CCP 2-01	TCX-CSAPCH-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CCP 2-01 L/O CLR STRN 2-01 SSW IN ISOL VLV	2SW-0413	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-195 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB Floor Elevation: 810' Room No: X-195

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS-0029A-001, NO ANCHORAGE REQUIRED.
2. SEQSP MS-0081-003 Rev5: BY TESTING.
   ANCHORAGE CALC 16345-CS(S)-181 R/1 CCN C04 AND
   16345-CS(S)-151 R/2 CCN -003.
3. WCCM-0031
4. SEQSP MS-20A1-029
   NO ANCHORAGE REQUIRED, INLINE MOUNTED VALVE.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DGPatankar Date: 6/13/95

Name: S.A. Karpyak Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 810 Room No.: X-202

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CCP 2-01/2-02 DN STRM MINIFLO VLV	2 – 8110	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CCP 2-01 DISCH CHK VLV	2-8481 A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RWST 2-01 TO CHRG PMP SUCT CHK VLV	2-8546	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	U2 RCP SL WTR INJ VLV	2CS-8345	I	[✓ Y] N U N/A	Y N U [✓ N/A]
5.	U2 RCP SL WTR PRESS CTRL VLV	2-HCV-0182	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	CCP 2-01 ALT SL INJ VLV	2CS-8387 A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 202 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB

Floor Elevation: 810

Room No: X-202

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP WECM-0056
2. SEQSP WECM-0123
3. SEQSP WECM-0114
4. SEQSP MS-20A.1-029
5. SEQSP WECM-0090
6. SEQSP MS-20A.1-033

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

000534

D. Evaluated By:

Name: DPatankar Date: 6/13/95

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 810' Room No.: X-204

B. EQUIPMENT EVALUATION

Success Path Equipment in Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CCW PMP 2-01 DISCH CHK VLV	2CC-0031	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CCW PMP 2-01	CP2-CCAPCC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CCW PMP 2-01 RM FAN COOLER FAN 2-09	CP2-VAAUSE-09	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CCW PMP 2-01 DISCH PRESS TRANSMITTER	2-PT-4520	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 204 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 6 of 6

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB Floor Elevation: 810' Room No: X-204

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS-206.2-006
2. SEQSP MS-0011-001, QUALIFIED BY ANALYSIS, ANCHORAGE CALC 16345-CS(B)-711A 009
3. SEQSP MS-0081-004, QUALIFIED BY TEST, ANCHORAGE SWEC CALC 16345-CS(B)-711A25 AND 16345-CS(B)-600A26
4. SEQSP MS-0611A-002 QUALIFIED BY TEST, ANCHORAGE SWEC CALC 16345-EM(B)-048-C2C

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By: 000536

Name: DPatankar Date: 6/13/95

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 810' Room No.: X-207

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U2 SFGD LOOP TRN A CCW RET VLV	2-HV-4512	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	U2 NON-SFGD LOOP CCW DNSTRM RET VLV	2-HV-4524	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	U2 NON-SFGD LOOP CCW UPSTRM RET VLV	2-HV-4525	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	RWST 2-01 TO CHRG PMP SUCT VLV 0112D	2-LCV-0112D	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CCP 2-01 L\O CLR SSW OUT THROT VLV	2SW-0359	I	[✓ Y] N U N/A	Y N U [✓ N/A]
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 207 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB   Floor Elevation: 810'   Room No: X-207

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS-0600-029
2. SEQSP MS-0600-029
3. SEQSP MS-0600-029
4. SEQSP WECM-0103
5. SEQSP MS-20A.1-029

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DLpatankar   Date: 6/13/95

Name: SA Kapyar   Date: June 13, 1995

Name: PM Pasankujo   Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 822' Room No.: X-208

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CCP 2-01 ALT MINIFLO UPSTRM ISOL VLV	2-8511A	2	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 208 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB Floor Elevation: 822' Room No: X-208

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM 0055

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DGPatankar Date: 6/13/95

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 842' Room No.: X-228B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RCP SEAL WTR INJ FLTR 2-02	TCX-CSFLSI-02	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 228B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB   Floor Elevation: 842'   Room No: X-228B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-0069 - Subcomponent

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: This room is for filter specifically and was inaccessible. However Unit 2 & Common Seismic/Nonseismic program evaluated all Nonsafety commodities for their seismic adequacy and hence there is no spatial seismic interaction concern.

D. Evaluated By:

Name: DGPatankar   Date: 6/13/95   000542

Name: Kapyah   Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 842 Room No.: X-230

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RC PMP SL WTR INJ FLTR 202 OUT VLV	2CS-8382D	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 230 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB Floor Elevation: 842 Room No: X-230

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP. MS-20A.1-037 In line mounted.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: Upatankar Date: 6/13/95

Name: SKapuyak Date: June 13, 1995

Name: PM Pasalugo Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: AB Floor Elevation: 874 Room No.: X-245

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	COMPONENT COOLING WATER SURGE TNK 2-01	CP2-CCATST-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	SAFETY CHILLED WATER SURGE TANK 2-01	CP2-CHATST-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	SAFETY CH WTR SURGE TNK 2-01 LS	2-LS-6712	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CCW SURGE TNK 2-01 TRAIN A LVL XMITTR	2-LT-4500	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-245 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: AB Floor Elevation: 874 Room No: X-245

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-65-004, Anchorage-IMT-CA-EQ-0124-MS64-04
2. SEQSP-MS-65-007, Anchorage-16345-CS(B)-735A31
3. SEQSP-MS-620-001 - Anch. - N/A
4. SEQSP-MS-611A-002, Anchorage-16345-EM(D)-048-CZC

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: Dbpatankar Date: 6/13/95 000546

Name: SDKapyal Date: June 13, 1995

Name: PN Pandya Date: 6-13-95

Sheet 1 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SW Floor Elevation: 796 Room No.: X-275

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-3)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SSW PMP 2-01 BRG WTR STRNR 2-01 OUT VLV	2SW-0068	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	SSW PMP 2-01 BRG WTR STRNR 2-01 IN VLV	2SW-0074	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	SSW PMP 2-01 TO TRA BRG WTR STRNR CH VLV	2SW-0084	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.	SSW PMP 2-01 DISCH CHECK VALVE	2SW-0374	I	[✓ Y] N U N/A	Y N U [✓ N/A]
5.	STATION SERVICE WTR PMP 2-01	CP2-SWAPSW-01	I	[✓ Y] N U N/A	Y N U [✓ N/A]
6.	SSW PMP 2-01 BRG WTR STRNR 2-02	CP2-SWSRPL-02	I	[✓ Y] N U N/A	Y N U [✓ N/A]
7.	SSW PUMP 2-01 DISCH FLOW XMTR	2-FT-4258	I	[✓ Y] N U N/A	Y N U [✓ N/A]
8.	SSW PMP 2-01 DISCH PRESSURE XMTR	2-PT-4252	I	[✓ Y] N U N/A	Y N U [✓ N/A]
9.	SSW PMP 2-01 BRG WTR STRNR 2-06 IN VLV	2SW-0401	I	[✓ Y] N U N/A	Y N U [✓ N/A]
10.	SSW PMP 2-01 BRG WTR STRNR 2-06 OUT VLV	2SW-0400	I	[✓ Y] N U N/A	Y N U [✓ N/A]

Is all above listed equipment in room no. 275 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification
Building: SW Floor Elevation: 796 Room No.: X-275

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SSW PMP 2-01 BRG WTR STRN-2-05/06 BTV	2SW-0406	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 275 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U N/A

3. No other interaction concerns? Y N U N/A

Is all above listed equipment in room free from interaction effects? Y N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 3 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SW Floor Elevation: 796 Room No: X-275

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1 & 2. SEQSP-MS20A.1-011 - In line mounted
3. SEQSP-MS20A.1-004 - —DO—
4. SEQSP-MS-20B.3-001 - —DO—
5. SEQSP-MS-010-001 - Anchorage-16345-CS(B)-1107A19 & 1107A2
6 SEQSP-MS-029A-003 - Subcomponent.
7 & 8. SEQSP-MS-0611A-002, Anchorage-16345-EM(B)-048
9 & 10. SEQSP-MS-20A.1-126 - Subcomponent
11. SEQSP-MS-20A.1-018 - Subcomponent.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: SWIS Rooms were walked down for both UNIT 1 & 2 Components during Unit 1 walkdown effort

D. Evaluated By: **000549**

Name: D Galankar Date: 6/13/95.

Name: Date: June 13, 1995

Name: N/A Date:

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: CB Floor Elevation: 778 Room No.: X-115B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SAFETY CHILLER 2-05 CHILLER GAS PRESSURE XMTR	2-PT-4552	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	SAFETY CHLR 2-05 RET PRESSURE CTRL VLV	2-PV-4552	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	SAFETY CW RECIRC PUMP 2-05	CP2-CHAPCP-05	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	SAFETY CHILLER 2-05	CP2-CHCICE-05	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	SAFETY CHILLER 2-05 CCW RETRN PCV AIR ACC 2-01	CP2-CIATCC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	SAFTEY CHILLER 2-05 CCW RET PRESSURE CNTRL VALVE AIR ACC UPSTRM CH VLV	2CC-1092	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	SAFETY CHLR 2-05 CCW RET PRESS CNTRL DWNSTRM CHECK VLV	2CC-1091	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 115B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: CB Floor Elevation: 778 Room No: X-115B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-0611A-002 QUALIFIED BY TEST, ANCHORAGE 16345-EM(B)-048

2. SEQSP - 0600-101, LINE MOUNTED

3. SEQSP - MS -0015C-001, QUALIFIED BY ANALYSIS ANCHORAGE CALC INCLUDED

4. SEQSP- MS - 0080B-001, QUALIFIED BY A COMBINATION OF TEST AND ANALYSIS; ANCHORAGE CALC 0218-SQ-0039.

5. SEQSP - MS-0065-100, QUALIFIED BY ANALYSIS, 16345-EM(S)-637

6,7 SEQSP-MS-0625-005, LINE MOUNTED

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000551

Name: Date: June 13, 1995

Name: Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: CB Floor Elevation: 792 Room No.: X-120

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	125 V DC DIST PNL 2ED1-2 DISCONNECT SWITCH	2ED1/1-5/DSW	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	125V DC BTRY CHRGR BC2ED1-1 TO 125 V DC SWBD 2ED1 FDR BKR	2ED1/2-8/BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	125 V DC BTRY BT2ED3 FUSED DISCON SWITCH	2ED3/1-1/DSW	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	118 V AC SAFEGUARDS BOP INVERTER IV2EC1	CP2-ECIVEC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	125 V DC BATTERY CHARGER BC2ED1-1	CP2-EPBCED-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	125 V DC SWITCHBOARD 2ED1	CP2-EPSWED-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	118 V AC RPS (CH 1) INVERTER IV2PC1	TCX-ESELIV-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	125 V DC BTRY CHRGR BC2ED3-1 TO 125 V DC SWBD 2ED3 FDR BKR	2ED3/2-8/BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-120 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: CB   Floor Elevation: 792'   Room No: X-120

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1,2,3,8 SEQSP ES-0011-002 ; SUBCOMPONENT

4. SEQSP ES-0009-001 Rev 5; BY TESTING
ANCHORAGE CALC IMPEL CALC No. 0218-SQ-0025 Rev0.

5. SEQSP ES-0008B-002 REV 4; BY TESTING
ANCHORAGE CALC IMPEL CALC NO 0218-SQ-0007 Rev0.

6. SEQSP ES-0011-002 Rev 5; BY TESTING
ANCHORAGE CALC IMPEL CALC NO 0218-SQ-0025 Rev0

7. WECM-0139.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000553

Name: SDKapyal   Date: June 13, 1995

Name: DGPeterson   Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: CB Floor Elevation: 792' Room No.: X-123

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	125V DC STATION BTRY BT2ED3	CP2-EPBTED-03	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-123 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: CB Floor Elevation: 792' Room No: X-123

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-ES8A-02-Rev3 ; BY TESTING
ANCHORAGE CALC 16345-EM(B)-251 REV 1, CCN-001, DCA 12618 REV 9

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: SKazyak Date: June 13, 1995

Name: DGpatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: CB Floor Elevation: 807' Room No.: X-134

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	118V AC INST DIST PNL 2EC1	CP2-ECDPEC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	125V DC DIST PNL 2ED1-1	CP2-ECDPED-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	118VAC INST DIST PNL (CHANNEL 1) 2PC1	CP2-ECDPPC-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	IV2EC1 TO 118VAC INST DIST PNL 2EC1 PREFERD FOR BKR	2EC1/00/BKR-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	IV2PC1 TO 118V AC INST DIST PNL 2PC1 PREFD FOR BKR	2PC1/00/BKR-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	I2PC3 TO 118VAC INST DIST PNL 2PC3 PREFD FOR BKR	2PC3/00/BKR-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-134 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. Nc other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: CB Floor Elevation: 807' Room No: X-134

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1, 3 SEQSP ES-0010-001 Rev 3 ; By TESTING.
ANCHORAGE CALC IMPELL CALC 0218-SQ-0024

2. SEQSP ES-0011-003 Rev 3 By TESTING
ANCHORAGE CALC IMPELL CALC 0218-SQ-0024

4, 5, 6. SEQSP - ES-0010-001 Rev3 SUB COMPONENT

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000557

Name: SAKapyal Date: June 13, 1995

Name: DGpatankar Date: 6/13/95

Name: PN Pawankar Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: CB Floor Elevation: 830' Room No.: X-135

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2H	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SOLIDSTATE SAFEGUARDS SEQUENCER CABINET A 2-CR-01	CP2-ECPRCR-01	I	[✓ Y] N U N/A	Y N U N/A
2.	+15V (ESFAS) POWER SUPPLY	2-CR01/15Q	I	[✓ Y] N U N/A	Y N U N/A
3.	48V (ESFAS) POWER SUPPLY	2-CR01/48Q	I	[✓ Y] N U N/A	Y N U N/A
4.	RHR HX 1 CCW RET FLO	2-FI-4556	I	[✓ Y] N U N/A	Y N U N/A
5.	RHR HX 1 CCW RET TEMP	2-TI-4557	I	[✓ Y] N U N/A	Y N U N/A
6.	CONTROL ROOM REACTOR TRIP HANDSWITCH	2/1-RT	I	[✓ Y] N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. X-135 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: CB Floor Elevation: 830' Room No: x-135

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1, 2, 3 SEQSP - ES-0022-001 ; SUB COMPONENTS

4, 5 SEQSP MS-0605-028 ; SUB COMPONENTS

6 SEQSP MS-0605-01 ; SUB COMPONENT

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: The Control Room was walked down in its entirety as part of the Unit 1 Walkdowns.

D. Evaluated By:

000559

Name: Date: June 13, 1995

Name: DGpatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: CB Floor Elevation: 854' Room No.: X-151B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	BTRY ROOM 2-1 EXH FAN 2-08 DISCH GRAVITY DMPR	CP2-VADPGU-42	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 151B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: CB   Floor Elevation: 854   Room No: X-151B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-84-005, Anchorage. N/A

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000561

Name: Date: June 13, 1995

Name: D Gatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Building Floor Elevation: 808 Room No.: 2-154A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2H	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CONTAINMENT ISOLATION VALVE	2-8160	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	RHR PUMP-HL RECIR CMB ISOLATION VALVE	2-8701A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	CHECK VALVE	2-8815	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.	CHECK VALVE	2-8818A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
5.	CHECK VALVE	2-CS-8368A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
6.	CHECK VALVE	2-SI-8819A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
7.	RELIEF VALVE	2-8708A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-154A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 808 Room No: 154A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1; WECM-0116 ;
NO ANCHORAGE REQUIRED, INLINE MOUNTED VALVE

2. WECM - 0105
NO ANCHORAGE REQUIRED

3 WECM - 0120
NO ANCHORAGE REQUIRED

4. WECM-0116
NO ANCHORAGE REQUIRED

5 SEQSP MS 20A.1 -038
No ANCHORAGE REQUIRED

6. SEQSP 20 A 1 -031
NO ANCHORAGE REQUIRED.

7. WECM -0036
No ANCHORAGE REQUIRED

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 Containment was not walked down. Unit 1 Containment was walked down and is similar.

D. Evaluated By:

Name: SD Kapyal Date: June 13, 1995

Name: DG Paranlkar Date: 6/13/95

Name: PM Pasalugo Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 808 Room No.: 2-154B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CHECK VALVE	2-8841A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	CHECK VALVE	2-SI-8905B	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	LEVEL TRANSMITTER	2-LT-4779	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-154B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor   Floor Elevation: 808   Room No: 154B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP WECM-0116
2. SEQSP MS-20A.1-031
3. SEQSP MS-630-01 QUALIFIED BY TEST, ANCHORAGE CALC SAME AS UNIT 1, 16345-EM(B)-2135'248

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 Containment was not walked down Unit 1 Containment was walked down and is similar

D. Evaluated By:

000565

Name: Date: June 13, 1995

Name: DPatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification
Building: Reactor Floor Elevation: 808 Room No.: 2-154D

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	ISOLATION VALVE	2-8112	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	CHECK VALVE	2CI-0030	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	ISOLATION VALVE	2-HV-5158	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-154D seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 808 Room No: 154 D

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP WECM -0056
2. SEQSP MS-20B.1-004
3. SEQSP MS-604-01, QUALIFIED BY A COMBINATION OF TEST AND ANALYSIS

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 Containment was not walked down Unit 1 containment was walked down and is similar.

D. Evaluated By:

000567

Name: SH Kapoyal Date: June 13, 1995

Name: D Gpetranken Date: 6/13/95

Name: RM Date: 1-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 812 Room No.: 2-154I

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CHECK VALVE	2-8948A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	CHECK VALVE	2CS-8350A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	CHECK VALVE	2CS-8367A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.	CHECK VALVE	2SI-8900A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-154I seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 812 Room No: 154 I

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP WEEM-0117
2,3. SEQSP MS 20A.1-038
4. SEQSP MS-20A.1-030

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 containment was not walked down. Unit 1 containment was walked down and is similar

D. Evaluated By:

000569

Name: Date: June 13, 1995

Name: DLPatankar Date: 6/13/95

Name: Date: 6-12-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 812 Room No.: 2-154J

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CHECK VALVE	2-8949B	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	CHECK VALVE	2-CS-8350B	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-154J seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 812 Room No: 154J

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP WECM-0116
2. SEQSP MS 20A.1-038

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 containment was not walked down. Unit 1 containment was walked down and is similar.

D. Evaluated By:

000571

Name: Date: June 13, 1995

Name: DLPatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 812 Room No.: 2-154K

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE: 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CHECK VALVE	2CS-8350C	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-154K seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 812 Room No: 154K

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP - MS 20A.1-038

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 containment was not walked down Unit 2 containment was walked down and is similar

D. Evaluated By:

000573

Name: Date: June 13, 1995

Name: DGPatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 812 Room No.: 2-154L

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CHECKVALVE	2-CS-8350D	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-154L seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 812 Room No: 154L

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1, SEQSP MS 20A.1-038

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 containment was not walked down Unit 1 containment was walked down and is similar.

D. Evaluated By:

000575

Name: SHagyal Date: June 13, 1995

Name: DPatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 832 Room No.: 2-155D

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	ISOLATION VALVE	2CT-0141		[✓ Y] N U N/A	Y N U [✓ N/A]
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-155D seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 832 Room No: 155D

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS 20B.1-026

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 Containment was not Walked down Unit 1 Containment was walked down and is similar.

D. Evaluated By:

000577

Name: SAKayyal Date: June 13, 1995

Name: DGParankar Date: 6/13/95

Name: PM Parasky Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification
Building: Reactor Floor Elevation: 832 Room No.: 2-155G

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	ISOLATION VALVE	2-HV-4725	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 155G seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]
3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 832 Room No: 155G

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0600-018 - In line mounted.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 containment was not walked down. Unit 1 containment was walked down and is similar.

000579

D. Evaluated By:

Name: Date: June 13, 1995

Name: Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 862 Room No.: 2-155L

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	PRESSURE TRANSMITTER	2-PT-0455	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	CHECK VALVE	2FW-0196	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 155L seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor

Floor Elevation: 862

Room No: 155L

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0621A-004 - SUPPORT/ANCH - 16345-EM(B)-043-CZ6
16345-EM(B)-048-CZC

2. SEQSP-MS-20B.1-003 - In line mounted.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 Containment was not walked . Unit 1 containment was walked down and is similar.

D. Evaluated By:

000581

Name: Date: June 13, 1995

Name: D Patankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 860 Room No.: 2-155M

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	ISOLATION DAMPER	2HV-5549		[✓ Y] N U N/A	Y N U [✓ N/A]
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 155M seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 860 Room No: 155M

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-86.03 – In line mounted

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 Containment was not walked down. Unit 1 Containment was walked down and is similar.

D. Evaluated By: 000583

Name: Date: June 13, 1995

Name: DLParankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 905 Room No.: 2-160A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2-17	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	ISOLATION VALVE	2 SI-0170	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	ISOLATION VALVE	2-SI-0180	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	ACCUMULATOR	CP2-SIATRT-02	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 160A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]
3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 905 Room No: 160A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1&2. SEQSP-MS-20A.1-012 - In line mounted

3. SEQSP-MS-65-005, Anchorage-16345-EM(B)-2A.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 Containment was not walked as Unit 1 containment was walked down and is similar.

D. Evaluated By:

000585

Name: Date: June 13, 1995

Name: DPatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification
Building: Reactor Floor Elevation: 877 Room No.: 2-161D

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	ROOT VALVE	2RC-8053B		[✓ Y] N U N/A	Y N U [✓ N/A]
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-161D seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 877 Room No: 161D

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS-20A.1-018
NO ANCHORAGE REQUIRED; INLINE MOUNTED VALVE

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 containment was not walked down Unit 1 containment was walked down and is similar.

D. Evaluated By: **000587**

Name: SDKapoyah Date: June 13, 1995

Name: DLPatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Reactor Floor Elevation: 905 Room No.: 2-161E

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 21)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	BLOCK VALVE	2-8000A		[✓ Y] N U N/A	Y N U [✓ N/A]
2.	SAFETY VALVE	2-8010A		[✓ Y] N U N/A	Y N U [✓ N/A]
3.	RELIEF VALVE	2-PCV-0455A		[✓ Y] N U N/A	Y N U [✓ N/A]
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-161E seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Reactor Floor Elevation: 905 Room No: 161E

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. WECM -0134 - NO ANCHORAGE REQUIRED, INLINE MOUNTED VALVE
2. WECM - 0038 - NO ANCHORAGE REQUIRED; INLINE MOUNTED VALVE
3. WECM - 0090 - NO ANCHORAGE REQUIRED; INLINE MOUNTED VALVE

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Unit 2 Containment was not walked down. Unit 1 Containment was walked down and is similar.

D. Evaluated By:

000589

Name: Date: June 13, 1995

Name: DPatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 773 Room No.: 2-053

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR PUMP RM EMER FAN COIL UNIT 2-01 CW SUPPLY FLEX HOSE 2-01	CP2-CHFHCH-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RHR PUMP RM EMER FAN COIL UNIT 2-01 CW RETURN FLEX HOSE 2-02	CP2-CHFHCH-02	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RESIDUAL HEAT REMOVAL PUMP 2-01 RM FAN CLR FAN 2-01	CP2-VAAUSE-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	RESIDUAL HEAT REMOVAL PUMP 2-01	TCX-RHAPRH-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-053 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 773 Room No: 2-053

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP CPD-0332-001 } Flex hoses in line mounted
2. SEQSP-CPD-0332-001 }
3. SEQSP MS-81-002 - By Test Anchorage - Impell Calc. No 0218-HV-0008
4. SEQSP-W-WECM-0032, Anchorage - Impell Calc. No. 84

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: SAKaysyal Date: June 13, 1995

Name: DGpctankar Date: 6/13/95

Name: PM Pandey Date: 6-13-95

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 773 Room No.: 2-054

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR PUMP 2-01 DISCH FLOW INDICATING SWITCH	2-FIS-0610	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CT PUMP RM EMER FAN COIL UNIT 2-11 CW SUPPLY FLEX HOSE	CP2-CHFHCH-21	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CT PUMP RM EMER FAN UNIT 2-11 CW RETURN FLEX HOSE	CP2-CHFHCH-22	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CONTAINMMENT SPRAY PUMP 2-01	CP2-CTAPCS-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CONTAINMENT SPRAY PMP 2-01/2-03 ROOM FAN CLR ~~FAN~~	CP2-VAAUSE-11	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-054 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: 56 Floor Elevation: 773 Room No: 2-054

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0616-001 - BY TEST
CALC NO. 16345-EM(B)-045-CZC REV 1

4. SEQSP-MS-12-01 - BY ANALYSIS
ANCHORAGE CALC EFLT-IMT-018 R/0
(SWEC CALC 600A-003)

5. SEQSP-MS-0081-004 - BY TEST
ANCHORAGE CALC 16345-CS(B) 600A26 Rev0.

2, 3 CPD-0322-001, ANCHORAGE NOT REQ'D. FLEXIBLE

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000593

Name: SDKapyak Date: 13 June 1995

Name: DLpatankar Date: 6/13/95

Name: PM Pavalugo Date: 6-13-95

Sheet 1 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 773 Room No.: 2-056B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-3)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CT PMP 2-01/2-03 SEAL CLR CCW OUTLET FLOW INDICATING SWITCH	2-FIS-4542	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CT PMP 2-01 SL CLR CCW UPSTRM RET ISO VLV	2CC-0098	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	CT PMP 2-01 SL CLR CCW DNSTRM RET ISO VLV	2CC-0266	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	CT PMP 2-01/2-03 SL CLR FIS 4542 UP STRM ISOLATION VALVE	2CC-0280	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	CT PMP 2-01 SL CLR CCW SUPPLY ISOL VLV	2CC-0095	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	CT PMP EMER FAN COIL UNIT 2-11 CH WTR SUPPLY ISOL VALVE	2CH-0366	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	CT PMP EMER FAN COIL UNIT 2-11 CH WTR RET ISOL VLV	2CH-0367	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	CT PMP 2-01 BRG CLR SSW OUTLET THR. VLV	2SW-0367	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	CT PMP 2-01 BRG CLR SSW INLET ISOL VLV	2SW-0368	I	[✓ Y] N U N/A	[✓ Y] N U N/A
10.	CT PUMP 2-01/03 BRG CLR SSW INLET STRAINER	CP2-SWSRCS-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A

Is all above listed equipment in room no. 2-056B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 773 Room No.: 2-056B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room (CONTINUATION PAGE)

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-3)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CT PUMP 2-01/03 BRG CLRSSW IN VLV	2SW-0420	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-056B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 773 Room No: 2-056B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS-0618-001
2-5: SEQSP MS-20A.1-015
6-7. SEQSP MS-20A.1-014
8-9 SEQSP MS-20A.1-011
10. SECSP MS-0029A-001
11. SEQSP MS-20A.1-037

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: Date: June 13, 1995

Name: Dlpatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification
Building: SG Floor Elevation: 773 Room No.: 2-062

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SI PUMP 2-01 LUBE OIL COOLER SSW INLET STRAINER	CP2-SWSESI-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	SI PUMP 2-01 RM FAN CLR FAN 2-05	CP2-VAAUSE-05	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	SAFETY INJECTION PUMP 2-01	TCX-SIAPSI-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-062 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No.: 2-084

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	DG 2-01 FO XFER PMP 2-01 DISCH VLV	2DO-0002	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	DG 2-01 FO XFER PMP 2-01 DISCH CHK VLV	2DO-0004	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	DG 2-01 FUEL OIL XFER PMP 2-01	CP2-DOAPFT-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	DG 2-01 FUEL OIL XFER PMP STRAINER 2-01	CP2-DOSRTP-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	DIESEL GENERATOR 2-01	CP2-MEDGEE-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 84 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No: 2-084

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-20A.1-015 } in line mounted
2. SEQSP-MS-20A.1-016] in line mounted
3. SEQSP-MS-C034-011, Anchorage-Impell Calc-INT-CA-EQ-0188-MS3
4. SEQSP-MS-0029A002, Pump strainer.
5. SEQSP-MS-0034-010, ANCHORAGE- 16345-CS(B)-605A34
   16345-CS(B)-605A35

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Additionally, Components around D.G. engine block/and skid mounted Components were walked down to identify any spatial interaction and/or mounting problems and none were found.

D. Evaluated By:

000539

Name: DPatankar Date: 6/13/95

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CRSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No.: 2-085A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	TRAIN A SWGR ROOM FAN CLR FAN 2-17	CP2-VAAUSE-17	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	TR A SWGR RM FAN CLR DISCH GRAVITY DAMPER 2-60	CP2-VADPGU-60	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-085A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No: 2-85A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0081-002 Rev 6; By TEST.
   ANCHORAGE CALC IMPELL 0218-14V-0008, R/2.
2. SEQSP-MS-0084-005 Rev 3; By ANALYSIS
   ANCHORAGE CALC IMT-CA-EQ-0398-MS-84

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DGPatankar Date: 6/13/95

000601

Name: SGKanyal Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES **Unit:** 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 796 Room No.: 2-085D

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CST 2-01 TO MDAFW PMP 2-01/02 ISOLVLV	2AF-0007	I	Y N U N/A	Y N U [✓ N/A]
2.	REFUELING WATER STORAGE TANK 2-01	CP2-CTATRW-01	I	Y N U N/A	[✓ Y] N U N/A
3.	RWST TANK 2-01 LVL XMTR 0930 PROT CH 1	2-LT-0930	I	Y N U N/A	[✓ Y] N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-085D seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG   Floor Elevation: 796   Room No: 2-085D

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

2. CALC # 16345 - CSCB-171 & 172.

3. SEQSP-MS-611A-02; BY TEST
ANCHORAGE CALC 16345-EM(B)-048

1. SEQSP-MS-020C-004; ANCHORAGE NOT REQUIRED

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DGPatankar   Date: 6/13/95

000603

Name: Kapyah   Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 832 Room No.: 2-088

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	UNIT2 CMNT PT 0934 PROT CH IV	2-PT-0934	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 88 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 832 Room No: 2-088

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-ESE-0003-001 - By Test.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000605

Name: DGPatankar Date: 6/13/95

Name: SKapyal Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 844 Room No.: 2-099B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	DG 2-01 ROOM VENT FAN 2-25 DISCH GRAVITY DAMPER	CP2-VADPGU-48	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	DG201 ROOM VENT FAN 2-25	CP2-VAFNAV-25	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 99B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 844 Room No: 2-099B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-084-005 - ANCH--N/A

2. SEQSP-M-092B-001 - ANCHORAGE-16345-EM(S)-676

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000607

Name: DLPatankar Date: 6/13/95

Name: SAKapoor Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 844 Room No.: 2-099D

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	DG 2-01 FO DAY TANK 2-01 LEVEL SWITCH	2-LS-3375A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	DG 2-01 FO DAY TANK 2-01 OUTLET VALVE	2DO-0029	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	DG 2-01 FO DAY TANK XFER HDR CHK VLV	2DO-0049	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	DG 2-01 FUEL OIL DAY TANK 2-01	CP2-DOATDT-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 99D seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A
2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A
3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 844 Room No: 2-099D

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-034-018, Impell Calc. IMT.CA-EQ-0276-MS-34
   IMT-CA-EQ-960-N/A
2. SEQSP-MS-20A.1-015 - In line mounted
3. SEQSP-MS-20A.1-016 — In line mounted
4. SEQSP-MS-0034-016 - Anchorage - Impell - IMT-NEQ-MS34.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000609

Name: DPatankar Date: 6/13/95

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 773 Room No: 2-062

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-0029A-001. Strainer for SI pump (SubComponent)
2. SEQSP-MS-C81-003, Anchorage - Impell Calc. 0218-HV-010/011/015
3. SEQSP. WECM-0028

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000610

Name: SOKapuyan Date: June 13, 1995

Name: Dcpatankar Date: 6/13/95

Name: PM Passalugo Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 785 Room No.: 2 - 062E

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR PMP 2-02 TO SI PMP SUCTION VALVE	2 - 8804B	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	SI PMP 2-01/2-02 SUCTION CHK VALVE	2 - 8926	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 62 E seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: 5G Floor Elevation: 785 Room No: 2-062E

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-109 In line mounted
2. SEQSP-WECM-0114 In line mounted

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: These valves are located in a contamination area below the grating and they were not walked down per se. No concerns were obvious.

D. Evaluated By:

Name: Kapyal Date: June 13, 1995

Name: Dlpatankar Date: 6/13/95

Name: PM Passalugo Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 785 Room No.: 2-062F

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR HX 2-01 OUT CHK VLV	2-8730A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	RHR PMP 2-01 TO CCP SUCTION VALVE	2-8804A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	SI PUMP 2-01 MINIFLOW VALVE	2-8814 A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.	SI PUMP 2-01 XTIE VLV	2-8821 A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
5.	SI PUMP 2-01 DISCH CHK VLV	2-8922A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
6.	RWST 2-01 TO RHR PUMP 2-01 CHK VLV	2-8958A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
7.	RHR TO CCP 2-01/02 SUCTION CHK VLV	2-8969A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
8.	RHR HX 2-01 BYP FLO CTRL VALVE	2-FCV-0618	I	[✓ Y] N U N/A	Y N U [✓ N/A]
9.	RHR HX 2-01 FLO CTRL VALVE	2-HCV-0606	I	[✓ Y] N U N/A	Y N U [✓ N/A]
10.				[✓ Y] N U N/A	Y N U [✓ N/A]

Is all above listed equipment in room no. 62F seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U N/A

3. No other interaction concerns? Y N U N/A

Is all above listed equipment in room free from interaction effects? Y N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 785 Room No: 2-062F

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-0115
2. SEQSP-WECM-0109
3. SEQSP-WECM-0056
4. SEQSP-WECM-0131
5. SEQSP-WECM-0124 — All items in line mounted.
6. SEQSP-WECM-0118
7. SEQSP-WECM-0119
8. SEQSP-WECM-0043
9. SEQSP-WECM-0042

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: The components are located in a contamination area below the grate and were not walked down per se. No concerns were identified.

D. Evaluated By: 000614

Name: SAKapyah Date: June 13, 1995

Name: DGpatanka Date: 6/13/95

Name: P M [illegible] Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 0

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 2-0626

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR TO SI PUMP 2-01/02 SUCT CHK VLV	2-8969B	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-0626 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No: 2-0626

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP WECM-0119

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: These components are below the grate and were not walked down.

D. Evaluated By:

Name: Date: June 13, 1995

Name: DLPatankar Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 2-065

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CNTMT SUMP TO RHR PMP 2-01 SUC ISO VLV	2-8811A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	CNTMT SUMP TO CT PMP 2-01/03 SUC ISO VLV	2-HV-4782	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-065 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No: 2-065

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP WECM-0112
2. SEQSP MS 20B.1-36

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: These components are located inside the tank enclosure.

D. Evaluated By:

Name: SAKapyah Date: June 13, 1995

Name: DLPatankar Date: 6/13/95

Name: PM Paralkar Date: 6-13-95

Sheet 2 of _

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No: 2-065

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP WECM-0112
2. SEQSP MS 20B.1-36

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: These components are located inside the tank enclosure.

D. Evaluated By:

000619

Name: SAKapyah Date: June 13, 1995

Name: DGpatankar Date: 6/13/95

Name: BM Pawlikyz Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 2-067

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U2 SIP/CCP SUC HDR XTIE VLV	2-8807A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	SI PMP 2-01/02 MINIFLO RET VLV	2-8813	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	RHR PMP 2-01 MINIFLOW VLV	2-FCV-0610	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.	CT PMP 2-01 RECIRC VLV	2-FV-4772-1	I	[✓ Y] N U N/A	Y N U [✓ N/A]
5.	CT PMP 2-01/03 DISCH TST LN ISOL VLV	2CT-0050	I	[✓ Y] N U N/A	Y N U [✓ N/A]
6.	CT PMP 2-01 SUCT ISOL VLV	2CT-0084	I	[✓ Y] N U N/A	Y N U [✓ N/A]
7.	CT PMP 2-01 DISCH ISOL VLV	2CT-0097	I	[✓ Y] N U N/A	Y N U [✓ N/A]
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-067 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No: 2-067

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP WECM-0110
2. SEQSP WECM-0056
3 SEQSP WECM-0007
4 SEQSP MS-600-009
5;7 SEQSP MS 20B.1-23
6. SEQSP MS 20B.1-25

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: These components were located in an area with 45 mrem/hr radiation field and were not walked down [illegible]. No concerns were identified

D. Evaluated By:

000621

Name: Date: June 13, 1995
Name: DGpatanker Date: 6/13/95
Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 2-069

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2-17)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RHR HEAT EXCHANGER 2-01	TCX-RHAHRS-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	CONTAINMENT SPRAY HEAT EXCHANGER 2-01	CP2-CTAHCS-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-069 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No: 2-069

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. TCX-RHAHRS-01 SEQSP WECM-0064 QUALIFIED BY ANALYSIS AND THE ANCHORAGE QUALIFIED BY THE UNIT 1 W CALC # 16345-CS-EM(S)377

2. CP2-CTAHCS-01 SEQSP MS50-001 QUALIFIED BY ANALYSIS ANCHORAGE CALCULATION # 1MT-CA-EQ-0109-MS50.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: SDKapyan Date: June 13, 1995

Name: DLPatankar Date: 6/13/95

Name: PM [illegible] Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 2-070

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RWST 2-01 TO SI PUMP SUCT VLV	2-8806	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	RWST 2-01 TO RHR PUMP 2-01 [illegible] T VLV	2-8812A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RHR HX 2-31 CCW RET VLV	2-HV-4572	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.	RHR HX 2-01 CCW RET FLOW XMITTR	2-FT-4556	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	SSW TRN A TO U2 AFW PMP SUCTION VLV	2-HV-4395	I	[✓ Y] N U N/A	Y N U [✓ N/A]
6.	RHR HEAT EXCHANGER 2-01 CCW RET TEMP ELEM	2-TE-4557	I	[✓ Y] N U N/A	Y N U [✓ N/A]
7.	CT HX 2-01 CCW RETURN VLV	2-HV-4574	I	[✓ Y] N U N/A	Y N U [✓ N/A]
8.	CT HX 2-01 CCW SUPPLY ISOL VLV	2CC-0107	I	[✓ Y] N U N/A	Y N U [✓ N/A]
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-070 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No: 2 - 070

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1,2. SEQSP WEC.: -0103

3,7 SEQSP MS - 0600 - 033

4. SEQSP MS - 0611A - 002 QUALIFIED BY TEST, ANCHORAGE QUALIFIED BY SWEC CALC. NO. - 16345 - EM(B) - 048 - CZC

5. SEQSP MS - 0600 - 030

6. SEQSP MS - 0622 - 001

8. SEQSP MS - 0020C - 006

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000625

Name: Date: June 13, 1995

Name: Dgpatankar Date: 6/13/95

Name: Date: 6-17-95

Sheet 1 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 2-072

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-3)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CST TO MD AFW PMP 2-01 SUCT CHK VLV	2AF-0014	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	MD AFW PMP 2-01 DISCH CHK VLV	2AF-0065	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	MD AFW PUMP 2-01	CP2-AFAPMD-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	MD AFW PUMP 2-01 DISCH TO SG 2-01 FCV AIR ACCUMULATOR	CP2-CIATAF-07	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	MDAFW PUMP ROOM FAN COOLER FAN 2-17	CP2-VAAUSE-07	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	MDAFW PMP 2-01 SSW SUCT ISOL VLV	2-HV-2480	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	MD AFW PMP DISCH PRESS XMITTER	2-PT-2453	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	MD AFW PUMP 2-01 SUC PRESS XMITTER	2-PT-2475	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	MD AFW PMP DISCH TO SG 2-01 FLO CTRL VLV	2-FV-2453A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
10.	MD AFW PMP DISCH TO SG 2-02 R[illegible] UPSTM CHVLV	2AF-0237	I	[✓ Y] N U N/A	Y N U [✓ N/A]

Is all above listed equipment in room no. 2-072 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No.: 2-072

B. EQUIPMENT EVALUATION

Success Path Equipment In Room (CONTINUATION SHEET)

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	MDAFW PMP 2-01 FCV TO SG2-01 AS DOWNSTREAM CHECK VALVE	2AF-0236	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-072 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 790 Room No: 2-072

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

3. SEQSP - MS - 007 - 01 : BY ANALYSIS
ANCHORAGE CALC 16345 - CS(B) - 0602A003 REV0.

4. SEQSP - MS - 0065 - 01 , REV 2 , BY ANALYSIS.
ANCHORAGE CALC 16345 - EM(B) - 231 REV 0 CCN 01.

5. SEQSP - MS - 0051 - 03 REV 2 ; BY TEST
ANCHORAGE CALC IMPELL 0218 - HV - 011 R/2.

7,8. SEQSP - MS - 611A - 02 REV 3 ; BY TEST
ANCHORAGE CALC 16345 - EM(B) - 048.

1. SEQSP MS - 20B 1 - 005 ; INLINE MOUNTED, NO ANCHORAGE REQ'D
2. SEQSP MS - 20B.1 - 006 , INLINE MOUNTED, NO ANCHORAGE REQ'D
6. SEQSP MS - 20B.1 - 031 ; INLINE MOUNTED ; NO ANCHORAGE REQ'D.
9. SEQSP MS - 0600 - 005 ; IN LINE MOUNTED , NO ANCHORAGE REQ'D
10,11. SEQSP MS - 0625 - 005 ; IN LINE MOUNTED ; NO ANCHORAGE REQ'D

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By: **000628**

Name: SAKapyan Date: June 13, 1995

Name: DLgatanka Date: 6/13/95

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 800 Room No.: 2-076

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	RWST TO CT PMP 2-01/03 SUCT VALVE	2-HV-4758	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 76 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 800 Room No: 2-076

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-MS-20B.1-36 - In line mounted.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000630

Name: DPatankar Date: 6/13/95

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No.: 2-077A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U2 RCP SL WTR RET ISOL VALVE	2-8100	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	RCP 2-03 SL WTR INJ VALVE	2-8351C	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	RCP 2-04 SL WTR INJ VALVE	2-8351D	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	U2 CHRG PMP SUCT HI POINT VNT VLV 8220	2-HV-8220	I	[✓ Y] N U N/A	Y N U [✓ N/A]
5.	LWPS RCDT 2-01 LVL CTRL VLV	2-LCV-1003	I	[✓ Y] N U N/A	Y N U [✓ N/A]
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 77A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 8 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No: 2-077A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1,2&3 SEQSP-WECM-0056 - In line mounted

4. SEQSP-MS-0603-005 - In line mounted

5. SEQSP-WECM-095 - In line mounted

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000632

Name: SD Kapyal Date: June 13, 1995

Name: DLpatanka Date: 6/13/95

Name: PM Pauling Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No.: 2-077B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	U2 CHG PMP TO RCS CNTMT ISOL VLV 8106	2-8106	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	U2 LTDN CNTMT ORC ISOL VLV	2-8152	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.	RCP 2-01 SL WTR INJ VLV	2-8351A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
4.	RCP 2-02 SL WTR INJ VLV	2-8351 B	I	[✓ Y] N U N/A	Y N U [✓ N/A]
5.	CCP 2-01/02 SI ISOL VLV 8801A	2-8801A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	SI PMP 2-01 TO HL 2&3 INJ ISOL VLV	2-8802A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
7.	RHR TO CL 2-01/02 INJ ISOL VLV	2-8809A	I	[✓ Y] N U N/A	Y N U [✓ N/A]
8.	SI PMP 2-01/02 TO CL INJ ISOL VLV	2-8835	I	[✓ Y] N U N/A	Y N U [✓ N/A]
9.	RHR TO HL 2-02/03 INJ ISOL VLV	2-8840	I	[✓ Y] N U N/A	Y N U [✓ N/A]
10.	CT HX 2-01 OUTLET VLV	2-HV-4776	I	[✓ Y] N U N/A	Y N U [✓ N/A]

Is all above listed equipment in room no. 77B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No: 2-077B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP-WECM-0134
2. SEQSP-WECM-0094
3&4. SEQSP-WECM-0056
5. SEQSP-WECM-0129
6. SEQSP-WECM-0130
7. SEQSP-WECM-0111
8. SEQSP-WECM-0133
9. SEQSP-WECM-0111
10 SEQSP-MS-20B.1-36

All Valves are in line mounted.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Several of these components were located in an area with 80 mrem/hr radiation field and were not walked down [illegible]. No concerns were observed

D. Evaluated By:

Name: SD Kapyal Date: June 13, 1995

Name: DCparanka Date: 6/13/95

Name: RM Pasnlugo Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No.: 2 - 083

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	T2EB1 TO 480 VAC SWGR 2EB1 PREFERRED FDR BREAKER	2EB1-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	118VAC SG BOP INVERTER IV2EC1 SUPPLY BREAKER	2EB1-1/2HR/BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	125VDC BAT CHRGR BC2ED1-1 SUPPLY BRKR	2EB1-1/2M/BKR	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	T2EB3 TO 480 VAC SWGR 2EB3 PREFERRED FDR BREAKER	2EB3-1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	DG 2-01 TO 6.9KV SWGR 2EA1 EMERG FDR BRKR	2EG1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.	6.9 KV SWGR 2EA1 INNER STIG BRKR	BT-2EA1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
7.	480VAC MCC 2EB1-1	CP2 -EPMCEB-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
8.	6.9 K SWGR 2EA1	CP2 - EPSWEA-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
9.	480 VAC SWITCHGEAR 2EB1	CP2 - EPSWEB-01	I *	[✓ Y] N U N/A	[✓ Y] N U N/A
10.	6.9 KV/480 VAC XFMR (2EA1/2EB1) T2EB1	CP2 - EPTRET-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A

Is all above listed equipment in room no. 2-083 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No.: 2-083

B. EQUIPMENT EVALUATION

Success Path Equipment In Room (CONTINUATION SHEET)

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
11	6.9KV/480 VAC XFMR 2EB1 (2EA1/2CB1) FOR BRKR	T2EB1	I	[✓ Y] N U N/A	[✓ Y] N U N/A
12	480V SWGR BUS 2EB1 COMPARTMENT	2EB1/3D/COMP	I *	[✓ Y] N U N/A	[✓ Y] N U N/A
13.	480V SWGR BUS 2EB1 COMPARTMENT FEED TO XEB1-2	2EB1/3C/COMP	I *	[✓ Y] N U N/A	[✓ Y] N U N/A
14.	480V SWGR BUS 2EB3 COMPARTMENT FEED TO MCC XEB3-2	2EB3/7C/COMP	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 83 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 3 of 3

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 810 Room No: 2-083

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1.	FEEDER BRKR.	WECM-140	
2.	BREAKER	ES7-001	
3.	BREAKER	ES7-001	
4.	FEEDER BRKR	WECM 140	
5.	FEEDER BRKR	ES5-01	
6.	BUS TIE BRKR	ES5-01	
7.	MCC	ES7-01	IMPEL CALC 0025 FOR ANCHORAG
8.	6.9KV SWGR	ES5-01	IMPEL CALC 0026 FOR ANCHORAG
9.	480V SWGR	WECM-140	IMPEL CALC 0026 FOR ANCHORAGE
10.	TRANSFORMER	ES6-01	IMPEL CALC 0025 FOR ANCHORAGE
11.	FDR BREAKER	ES5-01	
12.	BRKR	WECM-140	
13.	BRKR	WECM-140	
14.	BRKR	WECM-140	

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000637

Name: SDKapyar Date: June 13, 1995

Name: DLpatankar Date: 6/13/95

Name: PM Pawlings Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: SG Floor Elevation: 852 Room No.: 2-100B

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SG 2-01 FW PREHTR BYPASS VALVE	2-FV-2193	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	MD AFW PMP 2-01 DISCH TO SG 2-01 IS. VLV	2-HV-2491B	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.	MD AFW PMP 2-01 TO SG 2-01 CH. VLV	2AF-0075	I	[✓ Y] N U N/A	[✓ Y] N U N/A
4.	SG 2-01 AFW FLOW XMTR 2463A	2-FT-2463A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
5.	SG 2-01 FW ISOL VALVE	2-HV-2134	I	[✓ Y] N U N/A	[✓ Y] N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-100B seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: SG Floor Elevation: 852 Room No: 2-100B

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS-0600-028
2. SEQSP MS-208.1-035
3. SEQSP MS-208.1-001
4. SEQSP MS-0611A-002 QUALIFIED BY TEST. ANCHORAGE QUALIFIED BY SWEC CALC # 16345-EM(B)-048-CZC
5. SEQSP MS-208.1-028

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DLpatankar Date: 6/13/95

Name: SDKapoyal Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Safeguards Floor Elevation: 852 Room No.: 2-100E

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	PRESSURE TRANSMITTER	2-PT-0514	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 100E seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Safeguards Floor Elevation: 852 Room No: 2-100E

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. 2-PT-0514 - SEQSP MS-0611A -004 QUALIFIED BY TEST
ANCHORAGE ENCOMPASSED BY CALCS 16345-EM(B)-043-C2C
AND 16345-EM(B)-048-C2C

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: DLpatankar Date: 6/13/95

Name: Kapyak Date: June 13, [illegible]

Name: PM Parandye Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Safeguards Floor Elevation: 873 Room No.: 2-106

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	SG 2-01 ARV ACC 2-02 ISOL VLV	2-MS-0703	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 106 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Safeguards   Floor Elevation: 873   Room No: 2-106

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP MS-0625-001 ; ANCHORAGE NOT REQUIRED

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000643

Name: DGPatankar   Date: 6/13/95

Name: SDKarpyak   Date: June 13, 1995

Name: PM Pawlinger   Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Safeguards Floor Elevation: 873 Room No.: 2-107

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	AIR ACCUMULATOR	CP2-MSATRT-01	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	MAIN STEAM CHECK VALVE	2MS-0663	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-107 seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Safeguards Floor Elevation: 873 Room No: 2-107

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEQSP - MS-65-06 REV 2 ; BY ANALYSIS
ANCHORAGE CALCULATION 16345-EM(B)-232.

2. SEQSP - MS-0625-005 ; ANCHORAGE NOT REQ'D ; INLINE MOUNTED VLV.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

Name: D Patankar Date: 6/13/95

Name: Date: June 13, 1995

Name: PM Paulinger Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Safeguards Floor Elevation: 881 Room No.: 2-109A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)?	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	Atmospheric Relief Valve	2-PV-2325	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.	MAIN STEAM ISOLATION VALVE	2MS-0026	I	[✓ Y] N U N/A	[✓ Y] N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 2-109A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. **Walkdown Area Identification**

Building: Safeguards **Floor Elevation:** 881 **Room No:** 2-109A

B. **Listing of Seismic Design Documentation for Success Path Equipment identified in the room.**

1. SEQSP MS-0078-001;
NO ANCHORAGE REQUIRED, INLINE MOUNTED VALVE

2. SEQSP MS-20B.1-021
NO ANCHORAGE REQUIRED, INLINE MOUNTED VALVE

C. **Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.**

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. **Evaluated By:**

000647

Name: **Date:** 6/13/95

Name: **Date:** June 13, 1995

Name: **Date:** 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: Safeguards Floor Elevation: 881 Room No.: 2-110A

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE- 2)	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	MAIN STEAM ISOLATION VALVE	2-HV-2333A	I	[✓ Y] N U N/A	[✓ Y] N U N/A
2.				Y N U N/A	Y N U N/A
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. 110 A seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? [✓ Y] N U N/A

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? [✓ Y] N U N/A

3. No other interaction concerns? [✓ Y] N U N/A

Is all above listed equipment in room free from interaction effects? [✓ Y] N U N/A

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: Safeguards Floor Elevation: 881 Room No: 2-110A

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEGSP MS-0076-001 :
   NO ANCHORAGE REQUIRED, INLINE MOUNTED VALVE.

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: None

D. Evaluated By:

000649

Name. DPatankar Date: 6/13/95

Name: Date: June 13, 1995

Name: Date: 6-13-95

Sheet 1 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

Plant Name: CPSES Unit: 2

A. DESCRIPTION

Walkdown Area Identification

Building: YARD Floor Elevation: 810 Room No.: YARD

B. EQUIPMENT EVALUATION

Success Path Equipment In Room

ITEM NO.	EQUIPMENT DESCRIPTION	EQUIPMENT TAG NO.	EQUIPMENT CAT/CLASS	EQUIPMENT SEISMIC ADEQUACY	
				IS SEISMIC ADEQUACY ESTABLISHED (SEE PAGE-2H	NO HARDWARE CONCERNS EXIST IN FIELD?
1.	CONDENSATE STORAGE TANK 2-01	CP2-AFATCS-01	I	[✓ Y] N U N/A	Y N U [✓ N/A]
2.	DG 2-01 FUEL OIL STORAGE TANK 2-01	CP2-DOATST-01	I	[✓ Y] N U N/A	Y N U [✓ N/A]
3.				Y N U N/A	Y N U N/A
4.				Y N U N/A	Y N U N/A
5.				Y N U N/A	Y N U N/A
6.				Y N U N/A	Y N U N/A
7.				Y N U N/A	Y N U N/A
8.				Y N U N/A	Y N U N/A
9.				Y N U N/A	Y N U N/A
10.				Y N U N/A	Y N U N/A

Is all above listed equipment in room no. YARD seismically qualified? [✓ Y] N U N/A

C. SYSTEM INTERACTION EFFECTS

1. Is all above listed equipment in room free from influence by adjacent elements? Y N U [✓ N/A]

2. Is all above listed equipment in room free from potential sources that could flood or spray onto equipment? Y N U [✓ N/A]

3. No other interaction concerns? Y N U [✓ N/A]

Is all above listed equipment in room free from interaction effects? Y N U [✓ N/A]

Y = YES N = NO U = UNSATISFACTORY N/A = NOT APPLICABLE

Sheet 2 of 2

PLANT WALKDOWN SCREENING AND EVALUATION SHEET

A. Walkdown Area Identification

Building: YARD Floor Elevation: 810 Room No: YARD

B. Listing of Seismic Design Documentation for Success Path Equipment identified in the room.

1. SEISMIC DESIGN OF THIS STRUCTURE IN CALCULATIONS 16345-CSCB-171 AND 172.
2. SEQSP-0067A-001 QUALIFIED BY ANALYSIS. ANCHORAGE CALC. 16345-CS(B)-073

C. Describe potential problems indicated by 'No' or 'Unsatisfactory' and provide evaluation.

N/A

Are all potential problems satisfactorily addressed? Y N [✓ N/A]

Is further investigation required? Y [✓ N] N/A

Comments: Yard walkdown was done as part of the Unit 1 walkdown.

D. Evaluated By:

000651

Name: Date: June 13, 1995

Name: DLPatankar Date: 6/13/95

Name: Date: 1-13-95