

ASSOCIATED CIRCUITS ANALYSIS

LOUISIANA POWER & LIGHT COMPANY

WATERFORD SES UNIT NO. 3

NOVEMBER 30, 1984

B412030429 B41130
PDR ADCK 05000382
G PDR

TABLE OF CONTENTS

	<u>Page</u>
1.0 ASSOCIATED CIRCUITS ANALYSIS	1
1.1 Introduction	1
1.2 Purpose	2
1.3 Scope	2
1.4 Definitions	2
1.5 Discussion	3
2.0 ASSOCIATED CIRCUITS ANALYSIS - INDIVIDUAL PLANT FIRE AREAS	10
2.1 Identification of Equipment	10
2.2 Determination of Essential Cables	10
2.3 Determination if a Single Fire Can Cause a Loss Of Safe Shutdown Capability	10
2.4 Results	11
3.0 ASSOCIATED CIRCUITS ANALYSIS - ISOLATION PANEL FIRE	12
3.1 Assumptions	12
3.2 Methodology	12
3.3 Results	12
4.0 ASSOCIATED CIRCUITS ANALYSIS - CONTROL ROOM/CABLE VAULT FIRE	14
4.1 Discussion	14
4.2 Assumptions	14
4.3 Methodology	15
4.4 Results	17
5.0 ASSOCIATED CIRCUITS ANALYSIS - CONCLUSION	19

LIST OF TABLES

<u>TABLE NO.</u>	<u>DESCRIPTION</u>
1.5-1	System Review
1.5-2	Safe Shutdown Analysis Equipment List
2.4-1	Impacted Safe Shutdown Components-Individual Plant Area Fires
3.2-1	Essential Components - Isolation Panel Fire
3.2-2	Non-Essential Components - Isolation Panel Fire
3.3-1	Balance of Components Interfacing with Isolation Panel
4.4-1	Control Room/Cable Vault Fire - Results

<u>ATTACHMENT NO.</u>	
A-1	Sample - Failure Modes and Effects Analysis
A-2	Sample - Cable Dispositioning Form

1.0 ASSOCIATED CIRCUITS ANALYSIS

1.1 INTRODUCTION

10CFR50, Appendix R and Branch Technical Position APCSB 9.5-1 require protection of safe shutdown capability to ensure that at least one means of achieving and maintaining safe shutdown conditions is available during and after any postulated fire in the plant.

LP&L previously analyzed a full spectrum of postulated exposure fires involving in-situ and transient combustibles to ensure that the necessary systems and components are available to achieve and maintain safe shutdown regardless of the location of a plant fire, with or without the availability of offsite power. This analysis, as documented in Appendix 9.5A of FSAR Subsection 9.5.1, was evaluated and found satisfactory in the Waterford-3 Safety Evaluation Report (NUREG 0787) as supplemented.

During the week of April 9-13, 1984, the NRC conducted a Fire Protection Audit at Waterford-3. This included a review of the originally submitted associated circuit analysis. The NRC defines associated circuits as those which have a common power source with safe shutdown equipment, a common enclosure with safe shutdown equipment, or whose spurious operation would adversely affect the shutdown capability. During the audit, the NRC indicated that they did not concur with the previously approved FSAR assumptions in regard to the last category of associated circuits. As a result, LP&L committed to perform an analysis to consider the effects of fire-induced spurious maloperations. The analysis was to be plant-wide and was to include the effect of a total Control Room fire. Any corrective actions required as a result of this analysis are to be completed prior to start-up following the first refueling outage as agreed upon at the LP&L/NRR meeting in Bethesda, MD on May 2, 1984.

This report addresses the concerns raised by the Fire Protection Audit on associated circuits. The report is discussed in four sections:

- 1) The Associated Circuits Analysis, which contains the overall approach and information common to all the postulated fire conditions,

- 2) The Individual Plant Fire Areas,
- 3) The Isolation Panel, and
- 4) The Control Room/Cable Vault.

1.2 PURPOSE

To identify circuits whose fire-induced maloperation can cause safe shutdown equipment or non-safe shutdown equipment to malfunction such that safe plant shutdown could be adversely affected.

1.3 SCOPE

The Associated Circuits Analysis shall evaluate the effects of spurious signals (i.e., hot shorts, open circuits or shorts to ground) on the operation of systems/equipment/components required to achieve and maintain safe shutdown conditions. The following items shall be considered within the scope of this analysis:

- 1) All systems/equipment/components required to maintain hot standby conditions;
- 2) All systems/equipment/components required to achieve and maintain cold shutdown conditions;
- 3) All systems/equipment/components not required for safe shutdown but whose circuits when subjected to a fire induced maloperation may affect the operation of safe shutdown equipment.

The Reactor Coolant Pressure Boundary components which provide a high pressure/low pressure interface boundary have been previously analyzed and are discussed in Appendix 9.5A of FSAR Subsection 9.5.1 and are not within the scope of this report.

1.4 DEFINITIONS

1.4.1 Maloperation

The failure of a component to perform its proper function due to hot shorts, open circuits or shorts to ground induced by a fire.

1.4.2 Spurious Actuation

The postulated fire-induced maloperation of a component.

1.4.3 Hot Standby

A plant operational mode, as defined by the Technical Specifications, where the reactivity condition (K_{eff}) is less than 0.99; the percent of rated thermal power (excluding decay heat) is equal to zero; and the average reactor coolant temperature is greater than or equal to 350°F (Mode 3).

1.4.4 Cold Shutdown

A plant operational mode, as defined by the Technical Specifications, where the reactivity condition (K_{eff}) is less than 0.99; the percent of rated thermal power (excluding decay heat) is equal to zero; and the average reactor coolant temperature is less than or equal to 200°F (Mode 5).

1.4.5 Exposed Circuits

A circuit which is not protected in accordance with the requirements of Subsection III.G.2 of Appendix R to 10CFR50.

1.5 DISCUSSION

1.5.1 Assumptions

The following assumptions have been applied to the Associated Circuits Analysis; a description of more limiting assumptions specific to the individual analyses is provided in the appropriate sections of this report.

1. No single active failures occur;
2. No other plant accidents are assumed to occur except as precipitated by the postulated fire;

3. A defense in-depth approach shall be taken as dictated in Appendix R. However, it is assumed that the postulated fire started and is not promptly extinguished by the combination of automatic suppression and detection systems or manual suppression;
4. Systems shall be analyzed considering the availability of either on-site or off-site power, whichever produces the most limiting effects;
5. For each fire area where exposed circuits provide automatic functions, assume all such automatic functions are retained or lost (whichever produces the worst-case results) regardless of whether such loss is derived from open circuits, hot shorts or shorts-to-ground. Consequently, detrimental effects resulting from automatic functions operating as designed will be considered;
6. Although all components whose maloperation could possibly affect essential systems are analyzed, only one spurious actuation is considered to occur at a time;
7. If a fire causes electrical shorts or overloads, protective devices are assumed to function properly except for those affected by the postulated fire;
8. For components required to achieve and maintain HOT STANDBY, manual operation of equipment (i.e., valves, switches, circuit breakers, etc.) shall be considered an acceptable means of operating equipment and isolating systems provided it can be demonstrated that sufficient time and manpower is available;
9. For components required to achieve and maintain COLD SHUTDOWN, manual operation of equipment (i.e., valves, switches, circuit breakers, etc.) shall be considered an acceptable means of operating equipment and isolating systems. In addition, the removal of fuses, lifting of conductors, addition of jumpers, replacement of cable, etc., are considered acceptable. Also,

selected equipment replacement (e.g., valve, pump, control switch, instrument, etc.) shall be considered acceptable if the replacement can be accomplished within appropriate time restraints. The above repairs must be achievable prior to the maloperation causing an unrecoverable plant condition;

10. Local operation of cold shutdown equipment, where available, is assumed possible since the postulated fire is assumed to be extinguished prior to commencement of COLD SHUTDOWN;
11. Application of stray three phase voltage to a damaged three phase feeder is considered a noncredible event.
12. One train of equipment necessary to achieve HOT STANDBY has been protected or relocated, as identified in the Safe Shutdown Analysis, so that it is free of fire damage by a single fire.

1.5.2 Approach

The analysis is performed such that the following performance goals are met when a fire is postulated concurrent with the availability or unavailability of off-site power:

- (1) Reactor Reactivity Control
- (2) Reactor Coolant System (RCS) Inventory Control
- (3) Reactor Coolant Pressure Control
- (4) Reactor Heat Removal
- (5) Process Monitoring
- (6) Supporting Functions

1.5.2.1 Reactor Reactivity Control

In accordance with the technical specifications, the reactor reactivity control function will provide sufficient shutdown margin to ensure that:

- . The reactor can be made subcritical from all operating conditions,
- . The reactivity transients associated with postulated accident conditions are controllable within acceptable limits, and
- . The reactor will be maintained sufficiently subcritical to preclude inadvertent criticality in the shutdown condition.

The two means of reactivity control are control rods and soluble boron addition from the Refueling Water Storage Pool (RWSP) or the Boric Acid Make-up Tanks (BAMTs) using the charging path.

1.5.2.2 Reactor Coolant System Inventory Control

The reactor coolant system inventory control function will ensure that sufficient make-up inventory is provided for:

- . Reactor coolant system fluid losses due to reactor coolant system leakage as allowed by the technical specifications,
- . Pressurizer heat losses, and
- . Shrinkage of the reactor coolant inventory during cooldown.

Adequate performance of this function can be accomplished by maintaining reactor coolant level within the pressurizer. Make-up inventory is provided from the RWSP or the BAMTs through the charging system.

1.5.2.3 Reactor Coolant Pressure Control

Reactor coolant pressure control ensures that (1) reactor coolant system integrity is maintained by preventing overpressurization, (2) fuel cladding integrity is protected by restricting cooldown to within the nucleate boiling region and (3) sufficient sub-cooling margin is provided to prevent void formation within the reactor vessel.

RCS pressure can be maintained by controlled energization of the pressurizer heaters or by controlled use of the charging system. Overpressurization of the RCS is prevented by the pressurizer safety valves. After depressurization, when the RCS is aligned with the Shutdown Cooling System (SDCS), overpressure protection is provided by SDCS suction relief valves. RCS pressure-temperature limits are maintained by controlling cooldown. Adequate subcooled margin is achieved and maintained by controlling the cooldown rate using the RCS pressure and temperature instrumentation, and by maintaining RCS inventory control.

1.5.2.4 Reactor Heat Removal

The reactor heat removal function is capable of transferring fission product decay heat from the reactor core at a rate such that specified acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded. Following a reactor trip with an assumed loss of off-site power, decay heat is initially removed by natural circulation of the RCS, heat transfer to the main steam system through the steam generators, and operation of the main steam Atmospheric Dump Valves (ADVs). The emergency feedwater system (EFW) will supply feedwater to the steam generators. Feedwater may be supplied to the steam generators by the motor-driven emergency feed pump or by the steam turbine-driven emergency feed pump.

After cooldown to shutdown entry conditions, the Shutdown Cooling System (SDCS) is used to establish long-term core cooling by rejecting RCS decay heat through the SDCS heat exchangers.

1.5.2.5 Process Monitoring

The process monitoring function is capable of providing direct readings of those plant process variables necessary for plant operators to perform and/or control the previously identified functions.

Various process monitoring functions are available to achieve and maintain the reactor coolant make-up, pressure control and decay heat removal functions adequately. Maintenance of Hot Standby requires that

pressurizer level and RCS pressure instrumentation be available. RCS temperature is maintained during Hot Standby by proper decay heat removal via steam generators and main steam ADV's. In the natural circulation mode of operation, the difference between the hot-leg and cold-leg wide range temperatures ($T_h - T_c$) provides a direct indication of a natural circulation condition.

RCS pressure is maintained by monitoring RCS pressure and hot-leg temperature (T_h) instrumentation and by manual control of the pressurizer heaters. Maintenance of pressurizer level is achieved by monitoring pressurizer level instrumentation and manual control of charging flow.

Maintenance of Hot Standby also requires the control of the secondary system to compensate for variations in the primary system performance. Steam generator level and pressure are available to ensure adequate monitoring of controlled decay heat removal. Steam generator level is achieved by regulation of EFW system flow, based on steam generator level indication. Steam generator pressure is monitored by controlled manipulation of secondary system pressure.

The transition from HOT STANDBY to COLD SHUTDOWN can use the instrumentation discussed above.

1.5.2.6 Support Functions

The systems and equipment used to perform the above functions require miscellaneous supporting functions such as process cooling and ac/dc power. For the purpose of the fire scenarios, the various systems required to provide support to safe shutdown equipment or systems include:

- . The emergency power systems, including the diesel generator system and subsystems,
- . The Component Cooling Water System, and
- . The HVAC systems for areas containing safe shutdown equipment.

1.5.3 Methodology

The Associated Circuits Analysis (ACA) was performed utilizing a multi-discipline approach identifying all individual components which interface with or are integral to essential systems required for safe shutdown on a fire area by fire area basis. All plant systems, whether classified as non-safety related or safety related, interfacing with either Safety Train A, B or A/B, are within the scope of this review. Plant systems and individual components are identified as follows:

- a. Essential to achieve and/or maintain safe shutdown (E)
- b. Non-essential but can have an effect on safe shutdown as a result of a spurious actuation or maloperation (NE*)
- c. Non-essential having no effect at all on safe shutdown (NE).

Each essential (E) system and each non-essential (NE*) system is analyzed component by component to determine what effect each component can have on an essential system or train. Table 1.5-1 identifies plant systems as E, NE* or NE. Table 1.5-2 itemizes all the E and NE* components considered in this analysis. This Table 1.5-2 lists the equipment that can be used to meet the performance goals discussed in Subsection 1.5.2; NE* components are labelled as essential; support functions are listed for each component and both are treated as essential.

If component maloperation or spurious actuation can be demonstrated to have no effect on safe shutdown capability, it is documented as such and no further action is required. However, if this cannot be demonstrated, investigation into related circuitry and cabling commences. Related circuitry shall be identified to determine which cables can or cannot cause a spurious actuation or maloperation of the components when analyzed for a hot short, open circuit, and a short-to-ground. Cables that are fire-protected or those that are in the fire zone that have been determined not to be capable of causing a maloperation are appropriately documented and no further action is necessary. Those cables that can cause a component maloperation are then analyzed as discussed in Sections 2.0, 3.0, and 4.0, to determine if any postulated fire condition can cause a loss of safe shutdown capability.

2.0 ASSOCIATED CIRCUITS ANALYSIS - INDIVIDUAL PLANT FIRE AREAS

2.1 IDENTIFICATION OF EQUIPMENT

The systems identified as needed for safe shutdown performance goals are reviewed for E, NE*, and NE components. The interface between safe shutdown systems and the balance of the plant systems is also reviewed for E, NE*, and NE components. The spurious actuation of each identified component is postulated individually and its effect on safe shutdown analyzed. This review is documented as a Failure Modes and Effects Analysis. A sample of this analysis is documented as Attachment A-1.

2.2 DETERMINATION OF ESSENTIAL CABLES

Any component identified as E or NE* is analyzed to determine which cables may cause a spurious actuation of the component. The routings of these cables are then identified to determine the fire areas that these cables traverse. Fire protected segments (i.e., wrapped) of these cables are also identified. A sample of cable identification and dispositioning is documented in Attachment A-2.

2.3 DETERMINATION IF A SINGLE FIRE CAN CAUSE A LOSS OF SAFE SHUTDOWN CAPABILITY

The effects of fire-induced component and circuitry failures on system function and on overall safe shutdown capability is propagated using fault-tree logic models. The fault-tree logic models are based on structured modeling techniques and information sorting capabilities that Boolean logic models offer. The logic models include safe shutdown systems, HVAC systems, electric power systems, component cooling water systems, essential chilled water systems and differentiates between hot standby and cold shutdown equipment.

The fault-tree logic models are developed in three stages: (1) Component Fault Trees, (2) System Fault Trees, and (3) the Master Fault Tree. Component Fault Trees are identified for each E and NE* component. Failure of each component to achieve its required safe shutdown state following a fire condition in the plant is the component fault-tree's top

event. The fire areas traversed by the cables serving a component are inputted into the component fault tree. A fault tree for each system required for safe shutdown is developed with the top event being failure of the system to achieve its function(s) required for safe shutdown. The component fault trees are linked to the system fault trees. Connections to support systems are also reflected in the system fault trees. The system fault trees are linked to the master fault tree, which groups the systems by their function required for hot standby and cold shutdown. Instrumentation required for monitoring the successful operation of each system is included in the logic such that a system is deemed incapable of performing its function if proper operation cannot be verified.

The plant safe shutdown capability is protected against single spurious maloperations (single failure criterion). Hence for the worst-case scenario, the exposed cables in each fire area are all assumed to open circuit. Each cable is then subjected to a fire-induced worst-case spurious signal on a cable-by-cable basis. An iterative computer process is utilized. An analysis of the fault trees determines if any single fire can cause a loss of safe shutdown capability. If there is such a fire, the fault tree analysis output is reviewed and cables and components involved are identified.

2.4 RESULTS

The results of the analysis yielded few conditions in which additional protection (i.e., wrap) due to spurious signal generation concerns is considered necessary. Most concerns can be mitigated by certain operator actions (e.g., selector switch operation or manually opening or closing a valve). Final determination of corrective actions will be accomplished subsequent to an area by area review to assure that only a reasonable number of operator actions are eventually established.

Procedural revisions identifying the required operator actions, and the installation of additional wrap will be accomplished prior to startup following the first refueling outage. These actions will provide the additional level of protection needed to preclude the detrimental effects induced by spurious actuations during a fire condition in any plant fire area. Refer to Table 2.4-1 for a listing of the Safe Shutdown components adversely affected by spurious signals in individual plant fire areas.

3.0 ASSOCIATED CIRCUITS ANALYSIS - ISOLATION PANEL FIRE

3.1 ASSUMPTIONS

In addition to the assumptions listed in Section 1.5.1, the following additional assumptions are applicable:

1. Total burn-up of the Isolation Panel - complete loss of all internal circuitry;
2. Components whose circuitry interfaces with the Isolation Panel are subject to the worst-case spurious signal (i.e., hot short, open circuit, short-to-ground).

3.2 METHODOLOGY

A mechanical systems approach is used to analyze the effects of a fire condition in the Isolation Panel. Every relay in the Isolation Panel is considered individually and the circuitry and equipment associated with each particular relay is identified. This establishes the equipment that interfaces with the Isolation Panel. This equipment is evaluated to determine those components whose operability is needed to achieve and maintain safe plant shutdown (E) and those components that are related to the plant shutdown process (NE*). A failure modes and effects analysis (Table 3.2-1 and 3.2-2) is performed on these E and NE* components to determine if their spurious actuation would prevent safe shutdown.

3.3 RESULTS

The analysis identified ninety-six (96) components interfacing with the isolation panel. Essential components (E) needed for safe shutdown of the plant are listed in Table 3.2-1. Components that are associated (NE*) to the plant shutdown process are listed in Table 3.2-2. The balance of components interfacing with the Isolation Panel not related to the plant shutdown process; that is, they are not essential nor associated components are listed in Table 3.3-1.

The analysis indicates that there is no interface between the Isolation Panel and the main power supply feeders. Hence, a fire in the Isolation Panel cannot be the impetus for the loss-of-offsite power supply to the plant. However, the analysis is viable regardless of whether offsite power is available or unavailable.

As indicated, there is no interface between the Isolation Panel and the main power supply feeders; however, the panel does interface with the tie-breakers between buses SA-SAB and SB-SAB. Therefore, the SAB bus is de-energized by opening the tie-breakers at the switchgear to minimize operator actions.

A worst-case fire in the Isolation Panel affects only some of the plant's safe shutdown components. The bulk of the plant's instrumentation will be available after a fire condition in the Isolation Panel and will provide timely indication as to the extent which spurious signals may be affecting plant conditions.

The evaluation of safe shutdown components and the analysis of hot shorts, open circuits, shorts-to-ground determined that the fire in the Isolation Panel may spuriously actuate or inhibit operation of the equipment identified in Tables 3.2-1 and 3.2-2. Manual control of safe shutdown equipment will be available after implementing a hardware and procedural modifications.

In the unlikely event of a significant fire in the Isolation Panel, operator action would be necessary to isolate the panel and to ensure control of essential equipment so that an orderly safe shutdown may proceed. The operator actions require manual operation of valves, switches and circuit breakers.

In conclusion, the present protection features installed in and around the Isolation Panel (including redundant ionization detectors in each compartment, fire retardant barriers between each compartment, and ionization detectors and automatic suppression external to the panel) in conjunction with the completed analysis and a commitment to install hardware modifications and to establish appropriate procedures for a fire induced loss of this panel demonstrate an equivalent level of protection to that required by Section III.G.2 of Appendix R to 10CFR50.

4.0 ASSOCIATED CIRCUITS ANALYSIS - CONTROL ROOM/CABLE VAULT FIRES

4.1 DISCUSSION

10CFR50, Appendix R and Branch Technical Position APCSB 9.5-1 require protection of safe shutdown capability to ensure that at least one means of achieving and maintaining safe shutdown conditions is available during and after any postulated fire in the plant. In the Control Room and Cable Vault areas of the plant, it is not really practical to protect all redundant safe shutdown systems (cables) against the adverse effects of fire or fire suppression activities. Thus, the rules require an independent alternative shutdown capability that will not be disabled by fire damage to associated circuits.

Fire protection criteria for the cable vault area was accomplished by reviewing the area for identification of electrical train "A", "B" and "AB" cable routing. As a result of our original Safe Shutdown Analysis which precluded effects of spurious signal actuation, essential "B" train cables were rerouted to bypass the cable vault area. This protection, in addition to the in-situ fire protection systems (fire detectors and an automatic fire suppression system) already designed for the area, affords the protection of safe shutdown equipment as mandated by Appendix R.

In our original Safe Shutdown Analysis it was assumed that a deleterious Control Room fire would be limited to a single control panel.

As a result of the Appendix R audit (4/9-4/13/84), the Control Room/Cable Vault areas were to be specifically included in the reanalysis of essential and associated cables to ensure that alternative shutdown capability is independent and electrically isolated considering the effects of fire-induced maloperations. Further, the effects of a Control Room fire were to be reanalyzed without limitation to one control panel (i.e., a total Control Room fire).

4.2 ASSUMPTIONS

In addition to the assumptions listed in Section 1.5.1, the following additional assumptions are applicable:

1. Total burn-up of the Control Room and the Cable Vault - complete loss of all circuitry exposed to the fire;
2. Components whose circuitry interfaces with the Control Room/Cable Vault are subject to the worst-case spurious signal (i.e., hot short, short-to-ground, open circuit);
3. After detection of a fire, which necessitates evacuation of the Control Room, it is assumed that reactor trip can be accomplished from the Control Room prior to this evacuation.
4. Essential control functions emanating from the Control Room will be isolated or transferred to appropriate locations outside the Control Room prior to damage due to fire.

4.3 METHODOLOGY

To determine the effects of a fire on the control circuit, it was assumed that any of the following electrical faults may be induced in the portion of the control circuitry that is exposed to the fire:

- a - Hot shorts
- b - Open circuits
- c - Shorts-to-ground

For the circuitry impaired by the postulated fire, corrective measures are recommended for remedial actions.

This review is based on the actual installation of the instrumentation/control circuitry as categorized below:

- A. indicators required to monitor plant conditions during the plant shutdown process.

A number of parameters which were considered critical for the monitoring of the plant conditions during the process of the plant shutdown were selected from the existing Auxiliary Control Panel LCP-43. During this review process electronic equipment

and interface cables serving these parameters were reverified to be located entirely outside of the Control Room/Cable Vault area. Hence, the display of these parameters on the Auxiliary Control Panel LCP-43 would not be impaired by fire in the Control Room/Cable Vault area.

- B. Essential safe shutdown equipment that is provided with control stations at the Auxiliary Control Panel LCP-43.

For the purpose of this analysis, the power distribution channel B was selected for operation. Power distribution channels A and AB are manually de-energized.

The routing of all cables of the selected equipment is reviewed to ensure that the operation of the existing transfer switches, transferring points of control from the Main Control Board to the Auxiliary Control Panel LCP-43, would isolate the entire circuit from the Control Room/Cable Vault (CR/CV) fire areas.

Where the operation of the transfer switch alone will not result in a complete isolation from the Control Room/Cable Vault, the component is identified for further corrective action in order to ensure equipment operability.

- C. Essential equipment that does not normally require operator action but requires isolation from the Control Room/Cable Vault to perform its proper safe shutdown function.

The routing of all cables of the selected equipment is reviewed and additional isolation switches will be added to the existing transfer switch bays in Auxiliary Panels to provide a means of isolation for that portion of the control circuit that may be exposed to the fire.

In cases where the operation of the isolation switch would result in a loss of the equipment's control function, additional means of control along with instructions for operator's actions will be provided so that the functional control of the equipment can be regained.

D. Associated equipment

Associated equipment is not required for the plant shutdown process; however, maloperation of this equipment may affect the proper operation of the safe shutdown systems.

Routing of control circuit cables of associated equipment is reviewed to determine the effect of a fire in the Control Room/Cable Vault area on each individual associated component. Those components whose maloperation will affect safe shutdown are identified for further corrective actions.

In accordance with the above methodology the Control Room/Cable Vault analysis included a review of the E and NE* systems and components. This approach ensured that one train of safe shutdown systems/components would be electrically isolated and independent from a Control Room/Cable Vault fire-condition with the implementation of some additional isolation switches, cable reroutings and procedural modifications.

For a fire-condition that necessitates evacuation of the Control Room, the reactor is tripped from the Control Room. Control of the plant is transferred to the auxiliary shutdown panel and other local stations. Isolation switches are utilized to isolate the effects of the fire-condition on E and NE* safe shutdown equipment. The 6.9 kV buses and the train "A" and "A/B" power distribution systems are de-energized and isolated from the "B" power distribution system. Safe plant shutdown is then accomplished in an orderly and timely manner.

4.4 RESULTS

This analysis took a conservative approach that all components whose control circuitry interfaces with the Control Room/Cable Vault has the potential to spuriously maloperate. Table 4.4-1 identifies those components whose operability will be adversely affected after a fire-condition in the Control Room/Cable Vault. Table 4.4-2 identifies safe shutdown components that will not require additional modifications following the Control Room/Cable Vault fire for one of the following reasons:

- (1) Component's control circuitry will be isolated from the CR/CV fire after operating an existing transfer switch
- (2) Component's control circuitry is located outside the CR/CV fire areas
- (3) The CR/CV fire has no adverse effect on the component when its control circuitry is subjected to a spurious signal.

In conclusion, the present fire protection features in conjunction with this completed analysis and a commitment to implement hardware and procedural modifications prior to start-up following the first refueling provides adequate defense-in-depth for a fire-condition in the Control Room/Cable Vault and complies with the alternative shutdown requirements of Sections III.G.2 and III.L of Appendix R to 10CFR Part 50.

5.0 ASSOCIATED CIRCUITS ANALYSIS - CONCLUSION

Considering the effects of fire induced spurious maloperations, the results of the Waterford 3 Associated Circuits Analysis as illustrated, indicate a safe plant shutdown can be accomplished after implementing hardware/procedural modifications, for any of the postulated fire conditions. The analysis used conservative assumptions and a systematic approach. This provides the necessary assurances against fire-induced system interactions and equipment maloperations.

The corrective actions, required as a result of this analysis, will include the installation of isolation switches, cable reroutings/wrapping and some manual operator actions (e.g., selector switch operation, opening circuit breakers, etc.). Final determination of corrective actions will be accomplished subsequent to a composite area by area review. This will ensure that only a reasonable number of operator actions will be relied on following any postulated fire condition in the plant. These hardware modifications, including the revised procedures, will be implemented prior to start-up following the first refueling as was previously agreed upon. Given the conservatism of the analysis' assumptions (i.e., loss-of-offsite power, total loss of all control room components, worst-case spurious signals, etc.) and the existing fire protection features installed throughout the plant, the schedule for implementing station modifications is commensurable with any risk to the public health and safety.

In conclusion, this commitment to implement hardware and procedural modifications resulting from this analysis in conjunction with the present fire protection features provides the mandated defense-in-depth for any fire-condition in the plant and complies with Sections III.G.2 and III.L of Appendix "R" to 10CFR50, as appropriate.

TABLE 1.5-1

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
ASSOCIATED CIRCUITS ANALYSIS - SYSTEM REVIEW

<u>System</u>	<u>Req'd for Hot or Cold Shutdown Post Fire (E)</u>	<u>Not Req'd for Hot or Cold Shutdown Post Fire (NE)</u>	<u>Not Req'd But Can Affect Req'd Systems (NE*)</u>
Station Grounding	Part	Part	Part
Safety Related 125V DC	Part		Part
Non-Safety Related 125V DC	Part	Part	Part
Switching Station		X	
Startup Transformers		X	
6.9 kV			X
Safety Related 4.16 KV	Part	Part	Part
Non-Safety Related 4.16 KV		Part	Part
Safety Related 480V	Part	Part	
Non-Safety Related 480V		Part	Part
Safety Related 208/120V AC	Part	Part	
Non-Safety Related 208/120V AC		Part	Part
Safety Related Inverters & Dist	Part	Part	
Non-Safety Related Inverters & Dist		Part	Part
Safety Related Heat Tracing		X	
Non-Safety Related Heat Tracing		X	
Annunciator		X	
Environmental Monitoring		X	
Seismic Monitoring		X	
FHB RAD Monitoring & Computers		X	
RCB/RAB RAD Monitors & Computers		X	
Process & Effluent Rad Monitors & Computers		X	
Misc RAD Monitors & Computers		X	
Rad Monitor RG 1.97		X	
Computer Battery Room		X	
Fire Detection		X	
Instrument Air		Part	Part
Station Air		X	
Nitrogen	Part	Part	Part

TABLE 1.5-1 (Cont'd)

<u>System</u>	<u>Req'd for Hot or Cold Shutdown Post Fire (E)</u>	<u>Not Req'd for Hot or Cold Shutdown Post Fire (NE)</u>	<u>Not Req'd But Can Affect Req'd Systems (NE*)</u>
Carbon Dioxide		X	
Hydrogen		X	
Treated Water		X	
Demineralized Water		X	
Portable Water		X	
Plumbing		X	
SUMP PUMP Drainage		X	
Intake Structure Equipment		X	
Circulating Water		X	
Turbine Bldg Cooling Water		X	
CCW Dry Cooling Tower	X		
CCW - RCB	Part	Part	
CCW Balance	Part	Part	
Auxiliary Boiler		X	
Auxiliary Steam		X	
Emergency Diesel Generator	X		
Turbine		X	
Containment Cooling RCB	X		
Shield Bldg Ventilation		X	
Annulus Negative Pressure		X	
Containment Vacuum Relief		X	
Controlled Atmosphere Release		X	
Airborne Radioactivity Removal		X	
Hydrogen Recombiner & Analyzer		X	
CEDM Cooling		X	
Turbine Bldg HVAC		X	
Misc Area HVAC		X	
Cable Vault & Switchgear Area HVAC	Part	Part	
Control Room, Computer Room HVAC	Part	Part	
RAB Normal Ventilation			X
Controlled Ventilation Area HVAC		X	
Chilled Water	Part	Part	
Supplementary Chilled Water		X	

TABLE 1.5-1 (Cont'd)

<u>System</u>	<u>Req'd for Hot or Cold Shutdown Post Fire (E)</u>	<u>Not Req'd for Hot or Cold Shutdown Post Fire (NE)</u>	<u>Not Req'd But Can Affect Req'd Systems (NE*)</u>
Primary Makeup Water		Part	Part
RC Pumps, Motors & Vessels		Part	Part
Pressurizer & Quench Tanks	Part	Part	
Reactor Head Vent System		Part	Part
Charging & Letdown	Part	Part	
Boric Acid Makeup & Chemical Feed	Part	Part	
Post Accident Sampling		X	
Primary Sampling		X	
Gaseous Waste Management		X	
Liquid Waste Management		X	
Solid Waste Management		X	
Resin Waste Management		X	
Laundry Waste Management		X	
Waste Concentrator		X	
Solid Waste Mgmt Post Startup		X	
RCP Oil Collection		X	
Filter Transfer		X	
Portable Solidification		X	
Compactor Facility		X	
Interim Solid Waste		X	
Portable Demin Taps		X	
Additional Waste Tankage		X	
OSC Transfer Shield		X	
Boron Management		X	
Boric Acid Concentrator		X	
Refueling Water	Part	Part	Part
Containment Spray		Part	Part
High Pressure Safety Injection		X	
Low Pressure Safety Injection	Part	Part	
Safety Injection Tanks		Part	Part
Fuel Handling & Storage		X	
Fuel Pool Cooling & Purification		X	

TABLE 1.5-1 (Cont'd)

<u>System</u>	<u>Req'd for Hot or Cold Shutdown Post Fire (E)</u>	<u>Not Req'd for Hot or Cold Shutdown Post Fire (NE)</u>	<u>Not Req'd But Can Affect Req'd Systems (NE*)</u>
Engr Safety Features Actuation		Part	Part
Control Element Drive	X		
Excore Nuclear Instrumentation			
S/U Channel	Part	Part	
Excore Nuclear Instrumentation			
Safety Channel	Part	Part	
Incore Nuclear Instrumentation	Part	Part	
Movable Incore Nuclear Instrumen- tation		X	
Plant Protection			X
Reactor Regulating		X	
Vibration & Loose Parts Monitoring		X	
Reactor Power Cutback		X	
Condensate		X	
Condensate Transfer & Storage		Part	Part
Condensate Polishing		X	
Feedwater	Part	Part	
Feedwater Pump & Turbine		X	
Aux Feedwater Pump		X	
Emergency Feedwater	X		
Chemical Feed		X	
Secondary Sampling		Part	Part
Steam Generators	X		
Blowdown		Part	Part
Main Steam	Part	Part	
Extraction Steam		X	
Heater Drain Vents		X	
Air Evacuation		X	
Lube Oil Batch Tank & Transfer		X	
Feed Pump Lube Oil		X	
Turbine Lube Oil		X	
Seal Oil		X	

TABLE 1.5-1 (Cont'd)

<u>System</u>	<u>Req'd for Hot or Cold Shutdown Post Fire (E)</u>	<u>Not Req'd for Hot or Cold Shutdown Post Fire (NE)</u>	<u>Not Req'd But Can Affect Req'd Systems (NE*)</u>
Gland Seal		X	
Electro Hydraulic Fluid		X	
Turbine - Turbine Controls		X	
Gen - Hydrogen Gas		X	
Stator Coil Water		X	
GEN & 25KV		X	
Main Transformers		X	
Unit Aux Transformer		X	

1.5-2

STANLEY STEINBERG, INC.

SAFE SLEEPING. ALWAYS USE CORRECT LIFT

L.A.B.I.P.T. + C.E. + L.I.C.U.F.C.
J.L.S. + O.L.R. + T.C. + O.Y. + T.A.L.V.

6. THE COLD STAFF ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

CALL 1-800-511-1000 FOR MORE INFORMATION

[illegible]

REF: MSCBPPC 1.61E+17 0000 17 19 * FFFFFF 11/27/14 16.17.17

RECEIVED FEBRUARY 15, 1966

[illegible]

0011474495 214743198 441414 : 3345 17421479390

INFORMATIONAL SUPPLY : CH1 : VIBRANT ACTION FIL CONTROL FOR LIGHTING

SYSTEMS - SUPPLY FOR THE SYSTEMS FOR THE SUPPLY OF THE SYSTEMS

SUPPLY: CYL 44 ALICE
LOCAL: ZPL
T-4: F, H, P, M
MCCALL

$\frac{1}{2}A$
 U
 $U + \frac{1}{2}A$
 $\frac{1}{2}A$

[illegible]

• • • •

KAG CIA
 KAT CIA
 PAF CIA
 KAF CPT

EDASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
100% POWER TO NOT STABLE

WATERFED STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT LOCUS FOR NOT SAFE SHUTDOWN
FIELD WBSDFC DATA REVISED NOV 17 74 * REPORTS DUE PER 11/27/74 15.15.17

		EQUIPMENT LISTED ACROSS SAFETY TRAINS SAFETY ISOL							
		SA		SAB		SC			
EQUIP TYPE	EQUIPMENT	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
OPERATIONAL SUB-SYSTEM: REACTOR AUTOMATIC REACTOR TRIP									
SYSTEM: PSS : REACTOR SHUTDOWN SYSTEM EQUIPMENT USED FOR NOT SHUTDOWN ONLY									
ESSENTIALS:	NEUT FLX LOG FWR	CH A	FCB	*	*	CH E	RCH		
:	CONTROL PANEL	CP-7	RAB 01A	*	*	CP-7	RAB 01A		
:	CONTROL PANEL	CP-10	RAB 01A	*	*	CP-10	RAB 01A		
:	PRE-ARP FILTER	P-3486	PCF	*	*	P-3487	PCF		
:	FISSION CHANNEL	WELL 4	FCB	*	*	WELL 2	PCF		
ESSENTIALS:	NEUT FLX LOG FWR	CH C	FCB	*	*	CH D	PCF		
:	CONTROL PANEL	CP-7	RAB 01A	*	*	CP-7	RAB 01A		
:	CONTROL PANEL	CP-10	RAB 01A	*	*	CP-10	RAB 01A		
:	PRE-ARP FILTER	P-3486	PCF	*	*	P-3486	PCF		
:	FISSION CHANNEL	WELL 1	FCB	*	*	WELL 3	PCF		

CRASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
100% POWER TO HOT STANBY

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF ESSENTIAL EQUIPMENT NEEDED FOR HOT SAFE SHUTDOWN
FILE: WSDLRG DATA REVISED NOV 27 84 • FREIGHT: SEWERBEE 11277404 10.15.17

		EQUIPMENT LISTED ABOVE SAFETY TRAINS PASSAGE					
		SA	SAF	SI			
EQUIP TYPE	EQUIPMENT	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
OPERATIONAL STEPS OF : INITIAL EMERGENCY FLOODWATER SYSTEM							
OPERATIONAL SUB-STEP: LSC1 : VERIFY AUTOMATIC START OF OF EMERGENCY FLOODWATER PUMP'S							
SYSTEM: EFW : EMERGENCY FLOODWATER SYSTEM (EQUIPMENT USED FOR HOT SHUTDOWN ONLY)							
ESSENTIAL:	EFW PUMP	3A MOTOR 120V RAB 37	3A2E TURB. DRV RAB 39	3C MOTOR DRV RAB 38			
:	RTUPE-CTRL PNL	CP- R	RAB 01A	CP- R	RAB 01A		
:	LCP-RAM SD PNL	LCP-43	RAB 05	LCP-43	RAB 09		
:	AUXILIARY PANEL	AP-1	RAB 07A	AP-2	RAB 07B		
:	10S 400V	3A3-S	RAB 08A	3A3-S	RAB 08B		
SUPPORT:	AP-LOCAL CONTROL	AP-17-3A-1A	RAB 37	AP-17-3B-5B	RAB 38		
:	RTUPE-CTRL PNL	CP-16	RAB 01Z	CP-16	RAB 01A		
:	LOCAL CTRL STATION	LCS	RAB 37	LCS	RAB 3E		
:	AUXILIARY PANEL	AP-1	RAB 07A	AP-2	RAB 07B		
:	PCC 400V	3A311-S	RAB 08A	3E311-S	RAB 08H		
ESSENTIAL:	VALVE-SHUTOFF	20S-V611A	RAB00F	20S-V612H	RAB00F		
:	RTUPE-CTRL PNL	CP- R	RAB 01A	CP- R	RAB 01A		
:	LCP-RAM SD PNL	LCP-43	RAB 05	LCP-43	RAB 04		
:	AUXILIARY PANEL	AP-1	RAB 07A	AP-2	RAB 07B		
:	PDP	PDP-3E-1C-5A	RAB 08A	PDP-3E-1C-5B	RAB 08H		
:	BATTERY CHARGER	3A1-S	RAB 01A	3E1-S	RAB 08H		
:	RCC 400V	3A311-S	RAB 08H	3E311-S	RAB 08P		
:	BATTERY CHARGER	3A2-S	RAB 08A	3E2-S	RAB 08L		
:	PCC 400V	3A312-S	RAB 08A	3E312-S	RAB 08P		
:	PDP	3E1-300-5A	RAB 07A	3E313-S	RAB 08H		
:	SCPS	3A-S	RAB 01A	3E-S	RAB 08L		
:	RCC 400V	3A312-S	RAB 08A	3E312-S	RAB 08P		
:	PCC 400V	3A313-S	RAB 08A	3E313-S	RAB 08H		
ESSENTIAL:	VALVE-DEVIATOR		3A/1	RAB 39			
:	RCC 400V	3A311-S	RAB 08H	3E313-S	RAB 08H		
ESSENTIAL:	VALVE-TRIP THRTL		3A/2	RAB 39			
:	AUXILIARY PANEL		3E-2	RAB 07L			
:	PDP		3E1-300-5A	RAB 07C			
:	RCC 400V		3E311-S	RAB 08C			

TABLE 1.5-2

EMERG SERVICES INC.
SAFE SHUTDOWN ANALYSIS: EQUIPMENT LIST

CONTINUING FROM PREVIOUS PAGE
1.5A CONTINUED TO PREVIOUS PAGE

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE FOLLOWS NOT AVAILABLE)

IDENTITY AND LOCATION OF EQUIPMENT IDENTIFIED RELATED TO POTENTIAL SHUTDOWN
FLAME MONITORING DATA SERVICE FOR 7/14/80 - INCIDENT: STEAMER 11/27/80 15:15:17

EQUIPMENT LISTED ABOVE'S SAFETY DURING SHUTDOWN

EQUIP TYPE	EQUIPMENT	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	FIRE AREA
ESSENTIAL:	VALVE-ISOL SGI	2FM-V01A	RAIROOF	2FM-V0476	RAIROOF	RAIROOF
	HTGL-CNTL FAL	CF-1	CF-1	CF-1	PAP 01A	PAP 01A
	LCP-REF SG FAL	LCP-43	2FM-01	LCP-43	PAP 01A	PAP 01A
	AUXILIARY FAL	AP-1	2FM-01	AP-1	PAP 01A	PAP 01A
	FLP	2FM-2A-FC-1A	2FM-01	2FM-2A-FC-1A	PAP 01A	PAP 01A
	BATTERY CHARGER	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	MCC 400V	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	BATTERY CHARGER	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	MCC 400V	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	PPF	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	SGS	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	MCC 400V	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	MCC 400V	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	VALVE-ISOL SGI	2FM-V01A	RAIROOF	2FM-V0476	RAIROOF	RAIROOF
	HTGL-CNTL FAL	CF-1	CF-1	CF-1	PAP 01A	PAP 01A
	LCP-REF SG FAL	LCP-43	2FM-01	LCP-43	PAP 01A	PAP 01A
	AUXILIARY FAL	AP-1	2FM-01	AP-1	PAP 01A	PAP 01A
	CONTROL FAL	CF-43	2FM-01	CF-43	PAP 01A	PAP 01A
	CNTL FAL 400V	CF-43	2FM-01	CF-43	PAP 01A	PAP 01A
	ISOLATION FAL	CF-43	2FM-01	CF-43	PAP 01A	PAP 01A
	SGS/FLP	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	MCC 400V	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	MCC 400V	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	L I FLOWDOWN VLV	2FM-V01A	RAIROOF	2FM-V0476	RAIROOF	RAIROOF
	HTGL-CNTL FAL	CF-1	CF-1	CF-1	PAP 01A	PAP 01A
	MCC 400V	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	EFW FLOW TMR SGI	2FM-01	2FM-01	2FM-01	PAP 01A	PAP 01A
	HTGL-CNTL FAL	CF-1	CF-1	CF-1	PAP 01A	PAP 01A
	LCP-REF SG FAL	LCP-43	2FM-01	LCP-43	PAP 01A	PAP 01A
	CONTROL FAL	CF-43	2FM-01	CF-43	PAP 01A	PAP 01A
	INSTRUMENT PANEL	CF-43	2FM-01	CF-43	PAP 01A	PAP 01A

EDASCO SERVICES INC.
SAFE SHUTDOWN ANALYSTS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
10% LOWER TO HOT STANBY

WATERGARD STEAM ELECTRIC STATION NO. 3
(OFF-SITE PUMP NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT FILLED FOR HOT SAFE SHUTDOWN.
FILL: WESOLFC DATA REVISED NOV 27 84 * RECENT: SOWEPFL 11/27/84 15:15:17

		EQUIPMENT LISTED ACROSS SAFETY TRAINS SASSADISH					
		SA	SAF	SAF	SAF	SAF	SAF
EQUIP TYPE	EQUIPMENT	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
OPERATIONAL SUB-STATION 3085 : VERIFY AUTOMATIC ACTIVATION OF STEAM GEN NO. 2 IF VALVES SYSTEMS LFW : PROPERLY FILLWATER SYSTEM (EQUIPMENT USED FOR HOT SHUTDOWN ONLY)							
ESSENTIAL:	VALVE-ISOL SG2	2FL-VB50A	RAT ROOF	*	*	2FL-VB50B	RAT ROOF
:	RTGD-CNTL PNL	CP-1	RAT 01A	*	*	CP-1	RAT 01A
:	LCP-RM 2L PNL	LCF-43	RAT 09	*	*	LCF-43	RAT 09
:	AUXILIARY PANEL	CP-1	RAT 07A	*	*	CP-1	RAT 07A
:	PDF	PDF-2A-DC-SA	RAT 08A	*	*	PDF-2A-DC-SA	RAT 08A
:	BATTERY CHARGER	TAL-S	RAT 08A	*	*	TAL-S	RAT 08A
:	MCC 480V	3A311-S	RAT 08A	*	*	3A311-S	RAT 08A
:	BATTERY CHARGER	3A2-S	RAT 08A	*	*	3A2-S	RAT 08A
:	MCC 480V	3A310-S	RAT 08A	*	*	3A310-S	RAT 08A
:	PDF	PDF-2A-DC-SA	RAT 07A	*	*	PDF-2A-DC-SA	RAT 07A
:	SUPC	3A-S	RAT 08A	*	*	3A-S	RAT 08A
:	MCC 480V	3A312-S	RAT 08A	*	*	3A312-S	RAT 08A
:	MCC 480V	3A313-S	RAT 08A	*	*	3A313-S	RAT 08A
ESSENTIAL:	VALVE-ISOL SG2	2FL-VB54A	RAT ROOF	*	*	2FL-VB54B	RAT ROOF
:	RTGD-CNTL PNL	CP-1	RAT 01A	*	*	CP-1	RAT 01A
:	LCP-RM 30 PNL	LCF-43	RAT 09	*	*	LCF-43	RAT 09
:	AUXILIARY PANEL	CP-1	RAT 07A	*	*	CP-1	RAT 07A
:	CONTROL PANEL	CP-45	RAT 01A	*	*	CP-45	RAT 01A
:	CATAL FFL 07AC	LCF-61	RAT 08A	*	*	LCF-62	RAT 08A
:	ISOLATION PANEL	IP	RAT 07C	*	*	IP	RAT 07C
:	SUPSAFOP	SUPS 3MD-S	RAT 08A	*	*	SUPS 3MD-S	RAT 08A
:	MCC 480V	3A311-S	RAT 08A	*	*	3A311-S	RAT 08A
:	MCC 480V	3A312-S	RAT 08A	*	*	3A312-S	RAT 08A
ESSENTIAL:	L & FLOWDOWN VLV	*	*	*	*	3FW-V610B	RAT 31
:	RTGD-CNTL PNL	*	*	*	*	CP-1	RAT 01A
:	MCC 480V	*	*	*	*	3A313	RAT 08A
ESSENTIAL:	EFM FLO INTR SG2	*	*	*	*	FT-FW8330BS	RAT 3A
:	RTGD-CNTL PNL	*	*	*	*	CP-1	RAT 01A
:	LCP-RM 30 PNL	*	*	*	*	LCF-43	RAT 09
:	CNTL L PANEL	*	*	*	*	CP-45	RAT 01A
:	INSTRUMENT PANEL	*	*	*	*	CSM	RAT 3P
ESSENTIAL:	CSM STE PL LV IN	LT-CF014AS	RAT 37	*	*	LT-CF014AS	RAT 3P
:	RTGD-CNTL PNL	CP-1	RAT 01A	*	*	CP-1	RAT 01A
:	LCP-RM 30 PNL	LCF-43	RAT 09	*	*	LCF-43	RAT 09
:	CONTROL PANEL	CP-45	RAT 01A	*	*	CP-45	RAT 01A
:	ISOLATION PANEL	IP	RAT 07C	*	*	CSM	RAT 3P
:	ISOLATION PANEL	IP	RAT 07C	*	*	IP	RAT 07C

EDASCO SERVICES INC.
SAFT SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
12% POWER TO HOT START

WATERFORD STEAM ELECTRIC STATION NO. 2
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF NECESSARY EQUIPMENT LISTED FOR HOT SAFE SHUTDOWN
FILE: WSDSFC DATA DEVICE FOR 17 RM * REFERENCE: SEE FILE 11/27/89 15.15.17

EQUIP TYPE	EQUIPMENT	EQUIPMENT LISTED ACROSS SAFETY TRAINS CATASTROPHIC				SE	
		SA IDENTITY	FIRE AREA	SAP IDENTITY	FIRE AREA	SE IDENTITY	FIRE AREA

OPERATIONAL STEP: 04 : VERIFY CONTINUOUS OPERATION OF CCM COOLING WATER SYSTEMS
OPERATIONAL SUB-STEP: 0401 : RELEASE COMPONENT COOLING WATER SYSTEM TRADG
SYSTEM: CWS : COMPONENT COOLING WATER SYSTEM (EQUIPMENT USED FOR HOT AND COLD SHUTDOWN)

ESSENTIAL:	CCW PUMP	SA	RAI 15	CAZE	RAH 20	SE	RAH 21
:	RTSD-CTRL PNL	CP-1	RAI 01A	CP-2	RAH 01A	CP-3	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAI 04	LCP-43	RAH 04	LCP-43	RAH 04
:	AUXILIARY PANEL	AP-1	RAI 07A	AP-2	RAH 07D	AP-2	RAH 07B
:	ISOLATION PANEL	IF	RAI 07C	IF	RAI 07C	IF	RAH 07C
:	LOC 4-10KV	SA31-S	RAH 08A	SA32-S	RAH 08C	SA33-S	RAH 08D
SUPPORT:	LOCAL COOLER	AM-10-SA-SA	RAI 15	.	.	AM-10-3H-SD	RAH 21
:	RTSD-CTRL PNL	CP-16	RAI 01A	.	.	CP-16	RAH 01A
:	LOCAL CTRL STATION	LCS	RAI 15	.	.	LCS	RAH 21
:	AUXILIARY PANEL	AP-1	RAI 07A	.	.	AP-2	RAH 07H
:	MCC 480V	SA313-S	RAH 01A	.	.	SA313-S	RAH 08D
SUPPORT:	LOCAL COOLER	.	.	PI-40-3H-SD	RAH 20	.	.
:	RTSD-CTRL PNL	CP-15	RAI 01A	.	.	CP-15	RAH 01A
:	LOCAL CTRL STATION	LCS	RAH 21	.	.	LCS	RAH 20
:	AUXILIARY PANEL	.	.	AP-3	RAH 07D	.	.
:	PDF	.	.	LOF-360-SAB	RAH 08C	.	.
:	MCC 480V	.	.	SA311-S	RAH 08C	.	.
ESSENTIAL:	CCW HEAT EXCHGR	SA	RAH 17	.	.	SP	RAH 17
ESSENTIAL:	CONS TEMP TRNS	TL-CC737SAS	RAH 17	.	.	TL-CC737GDS	RAH 17
:	RTSD-CTRL PNL	CP-1	RAI 01A	.	.	CP-1	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAI 04	.	.	LCP-43	RAH 04
:	CTRL PNL (SPACE)	LCP-43	RAH 01A	.	.	LCP-43	RAH 04
:	CONTROL PANEL	CP-49	RAI 01A	.	.	CP-49	RAH 01A
SUPPORT:	AM-LOCAL COOLER	AM-24-SA-SP	RAI 17	.	.	AM-24-3H-SP	RAH 17
:	RTSD-CTRL PNL	CP-18	RAI 01A	.	.	CP-18	RAH 01A
:	LOCAL CTRL STATION	LCS	RAI 17	.	.	LCS	RAH 17
:	AUXILIARY PANEL	AP-1	RAI 07A	.	.	AP-2	RAH 07B
:	MCC 480V	SA313-S	RAH 01A	.	.	SA313-S	RAH 08D
ESSENTIAL:	SOME FLU CTR VAL	VAL-1100A	RAI 04	.	.	VAL-1100B	RAH 04
:	RTSD-CTRL PNL	CP-1	RAI 01A	.	.	CP-1	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAI 04	.	.	LCP-43	RAH 04
:	AUXILIARY PANEL	AP-1	RAI 07A	.	.	AP-2	RAH 07B
:	PDF	LOF-360-SAB	RAH 08C	.	.	LOF-360-SAB	RAH 08C
:	BATTERY CHARGER	SA1-S	RAI 01A	.	.	SA1-S	RAH 01A
:	MCC 480V	SA311-S	RAH 01A	.	.	SA311-S	RAH 08D
:	BATTERY CHARGER	SA2-S	RAI 01A	.	.	SA2-S	RAH 01A
:	MCC 480V	SA313-S	RAH 01A	.	.	SA313-S	RAH 08D
:	PDF	LOF-360-SAB	RAH 08C	.	.	LOF-360-SAB	RAH 08C

WATERFORD STEAM ELECTRIC STATION P.O. 5
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF PROVIDER EQUIPMENT HELD FOR HOT CALL SHUTDOWN
FILE: WFSOLPC DATA REVISED NOV 27 84 * EFFECT: SOLVED BY 11/27/84 15:15:17

		EQUIPMENT LISTED ABOVE		SAFETY TRAINING CAPITAL ISO		SI	
EQUIP TYPE	EQUIPMENT	SA IDENTITY	FIRE AREA	SAH IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
:	SLPS	SA-S	RAH 01A	*	*	SA-S	RAH 01A
:	PCC 4RCV	SA314-S	RAH 01A	*	*	SA312-S	RAH 01A
:	PCC 4RCV	SA315-S	RAH 01A	*	*	SA313-S	RAH 01A
ESSENTIAL:	CCW F A ISOL VALV	SEC-F105WZL	RAH 19	*	*	SEC-F110AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	ISOLATION PANEL	IF	RAH 07C	*	*	IF	RAH 07C
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CCW F A ISOL VALV	SEC-F111AZL	RAH 19	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	ISOLATION PANEL	IF	RAH 07C	*	*	IF	RAH 07C
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CCW F B ISOL VALV	SEC-F111AZL	RAH 21	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	ISOLATION PANEL	IF	RAH 07C	*	*	IF	RAH 07C
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CCW F B ISOL VALV	SEC-F111AZL	RAH 21	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	ISOLATION PANEL	IF	RAH 07C	*	*	IF	RAH 07C
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	DRY TWR P-F VALV	SEC-F111AZL	CT1	*	*	SEC-F111AZL	CT1
:	DRY TWR ISOL VALV	SEC-F111AZL	CT1	*	*	SEC-F111AZL	CT1
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	CONTROL PANEL	CR-33	RAH 01A	*	*	CR-33	RAH 01A
:	CONTROL PANEL	CR-49(PAC)	RAH 01A	*	*	CR-49(PAC)	RAH 01A
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CCW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD-CTRL PNL	CR-F	RAH 01A	*	*	CR-F	RAH 01A
:	AUXILIARY PANEL	AF-1	RAH 07A	*	*	AF-2	RAH 07B
:	PDP	PDP-391-SB	RAH 07B	*	*	PDP-391-SB	RAH 07B
ESSENTIAL:	CLW ISOL VALV	SEC-F111AZL	RAH 23	*	*	SEC-F111AZL	RAH 20
:	RTGHD						

EDACCO SERVICES INC.
SAFE COMPUTING ANALYSIS EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
100% POWER TO HOT CLIMATE

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF PERSONS AND EQUIPMENT CALLED FOR HOT SAFE SHUTDOWN
FILE: WFSOLPC DATA REVISED NOV 27 78 * HEIGHT: 116.7/10 15.15.17

[illegible]

EBASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS:ENDIFFERT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
1962 POWER TO NOT STABILIZE

WATFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT OFFER FOR HOT SAFE SHOOTDOWN
FILE: WFSDFPL DATA REV21F NOV 7 84 * REFCTC: SDFRPH 11/27/84 15:15:17

		EQUIPMENT LISTED ACROSS SAFETY TRAINS PASSADISH					
EQUIP TYPE	EQUIPMENT	SA IDENTITY	FIRE AREA	SA IDENTITY	FIRE AREA	SA IDENTITY	FIRE AREA
ESSENTIAL:	COAT COOLER VLV	SCC-F16102	RAH 32	*	*	SCC-F16102	RAH 32
:	RTCD-ENTL PNL	CP-18	RAH 01A	*	*	CP-18	RAH 01A
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	POP	POP-361-SA	RAH 08A	*	*	POP-361-SB	RAH 08B
ESSENTIAL:	CONT COOLER VLV	SCC-TF149H	RAH 32	*	*	SCC-TF149H	RAH 32
:	RTCD-ENTL PNL	CP-18	RAH 01A	*	*	CP-18	RAH 01A
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	POP	POP-361-SA	RAH 08A	*	*	POP-361-SB	RAH 08B
ESSENTIAL:	CG SHUTOFF VLV	SCC-F16102	RAH 23	*	*	SCC-F2249H	RAH 23
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	POP	POP-361-SA	RAH 07A	*	*	POP-361-SB	RAH 07B
ESSENTIAL:	DRY CLG TWR FAN	SA1	CT1	*	*	CT1	CT2
:	RTCD-ENTL PNL	CP-33	RAH 01A	*	*	CP-33	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAH 09	*	*	LCP-43	RAH 09
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	CONTROL PANEL	CP-49	RAH 01A	*	*	CP-49	RAH 01A
:	MCC 480V	3A315-S	CT1	*	*	3A315-S	CT2
ESSENTIAL:	DRY CLG TWR FAN	SA2	CT1	*	*	3F2	CT2
:	RTCD-ENTL PNL	CP-33	RAH 01A	*	*	CP-33	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAH 09	*	*	LCP-43	RAH 09
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	CONTROL PANEL	CP-49	RAH 01A	*	*	CP-49	RAH 01A
:	MCC 480V	3A315-S	CT1	*	*	3A315-S	CT2
ESSENTIAL:	DRY CLG TWR FAN	SA3	CT1	*	*	3F3	CT2
:	RTCD-ENTL PNL	CP-33	RAH 01A	*	*	CP-33	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAH 09	*	*	LCP-43	RAH 09
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	CONTROL PANEL	CP-49	RAH 01A	*	*	CP-49	RAH 01A
:	MCC 480V	3A315-S	CT1	*	*	3A315-S	CT2
ESSENTIAL:	DRY CLG TWR FAN	SA4	CT1	*	*	3F4	CT2
:	RTCD-ENTL PNL	CP-33	RAH 01A	*	*	CP-33	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAH 09	*	*	LCP-43	RAH 09
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	CONTROL PANEL	CP-49	RAH 01A	*	*	CP-49	RAH 01A
:	MCC 480V	3A315-S	CT1	*	*	3A315-S	CT2
ESSENTIAL:	DRY CLG TWR FAN	SA5	CT1	*	*	3F5	CT2
:	RTCD-ENTL PNL	CP-33	RAH 01A	*	*	CP-33	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAH 09	*	*	LCP-43	RAH 09
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	CONTROL PANEL	CP-49	RAH 01A	*	*	CP-49	RAH 01A
:	MCC 480V	3A315-S	CT1	*	*	3A315-S	CT2
ESSENTIAL:	DRY CLG TWR FAN	SA6	CT1	*	*	3F6	CT2
:	RTCD-ENTL PNL	CP-33	RAH 01A	*	*	CP-33	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAH 09	*	*	LCP-43	RAH 09
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	CONTROL PANEL	CP-49	RAH 01A	*	*	CP-49	RAH 01A
:	MCC 480V	3A315-S	CT1	*	*	3A315-S	CT2
ESSENTIAL:	DRY CLG TWR FAN	SA7	CT1	*	*	3F7	CT2
:	RTCD-ENTL PNL	CP-33	RAH 01A	*	*	CP-33	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAH 09	*	*	LCP-43	RAH 09
:	AUXILIARY PANEL	AP-2	RAH 07B	*	*	AP-2	RAH 07B
:	CONTROL PANEL	CP-49	RAH 01A	*	*	CP-49	RAH 01A

TEASCO SERVICES INC.
SAFE SPOUTING ANALYSIS EQUIPMENT LIST

TABLE 1.5-2

LOUISIANA POWER & LIGHT CO.
1001 PIONEER TO NEW ORLEANS

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE FUEL NOT AVAILABLE)

IDENTITY AND LOCATION OF BOUNDED EQUIPMENT FILED FOR EXT CASE SOUTHOWN.
FILE: WFOEDIC DATA SERVICE NOV 27 28 * REFLECT: DELETED 11/27/84 15.16.17

EQUIPMENT LISTED ACROSS SAFETY TRAINS CABLES		EQUIPMENT LISTED ACROSS SAFETY TRAINS CABLES		EQUIPMENT LISTED ACROSS SAFETY TRAINS CABLES		EQUIPMENT LISTED ACROSS SAFETY TRAINS CABLES	
EQUIP TYPE	EQUIPMENT	EQUIP ID	FIRE AREA	EQUIP ID	FIRE AREA	EQUIP ID	FIRE AREA
ESSENTIAL	LCP-REM SE FNL	LCP-42	RAB 05	LCP-43	RAB 04		
	AUXILIARY PANEL	AF-1	RAB 07A	AF-2	RAB 07B		
	CONTROL PANEL	CP-49	RAB 01A	CP-49	RAB 01A		
	MCC 480V	3A315-S	CT1	3B315-S	CT2		
	DRY CLG TWR FAN	3A7	CT1	3B7	CT2		
ESSENTIAL	RTU-CONT FNL	CP-33	RAB 01A	CP-33	RAB 01A		
	LCP-REM SE FNL	LCP-43	RAB 05	LCP-43	RAB 05		
	AUXILIARY PANEL	AF-1	RAB 07A	AF-2	RAB 07B		
	CONTROL PANEL	CP-49	RAB 01A	CP-49	RAB 01A		
	MCC 480V	3A315-S	CT1	3B315-S	CT2		
ESSENTIAL	DRY CLG TWR FAN	3A7	CT1	3B7	CT2		
	RTU-CONT FNL	CP-33	RAB 01A	CP-33	RAB 01A		
	LCP-REM SE FNL	LCP-43	RAB 05	LCP-43	RAB 05		
	AUXILIARY PANEL	AF-1	RAB 07A	AF-2	RAB 07B		
	CONTROL PANEL	CP-49	RAB 01A	CP-49	RAB 01A		
ESSENTIAL	MCC 480V	3A315-S	CT1	3B315-S	CT2		
	DRY CLG TWR FAN	3A7	CT1	3B7	CT2		
	RTU-CONT FNL	CP-33	RAB 01A	CP-33	RAB 01A		
	LCP-REM SE FNL	LCP-43	RAB 05	LCP-43	RAB 05		
	AUXILIARY PANEL	AF-1	RAB 07A	AF-2	RAB 07B		
ESSENTIAL	CONTROL PANEL	CP-49	RAB 01A	CP-49	RAB 01A		
	MCC 480V	3A315-S	CT1	3B315-S	CT2		
	DRY CLG TWR FAN	3A7	CT1	3B7	CT2		
	RTU-CONT FNL	CP-33	RAB 01A	CP-33	RAB 01A		
	LCP-REM SE FNL	LCP-43	RAB 05	LCP-43	RAB 05		
ESSENTIAL	AUXILIARY PANEL	AF-1	RAB 07A	AF-2	RAB 07B		
	CONTROL PANEL	CP-49	RAB 01A	CP-49	RAB 01A		
	MCC 480V	3A315-S	CT1	3B315-S	CT2		
	DRY CLG TWR FAN	3A7	CT1	3B7	CT2		
	RTU-CONT FNL	CP-33	RAB 01A	CP-33	RAB 01A		
ESSENTIAL	LCP-REM SE FNL	LCP-43	RAB 05	LCP-43	RAB 05		
	AUXILIARY PANEL	AF-1	RAB 07A	AF-2	RAB 07B		
	CONTROL PANEL	CP-49	RAB 01A	CP-49	RAB 01A		
	MCC 480V	3A315-S	CT1	3B315-S	CT2		
	DRY CLG TWR FAN	3A7	CT1	3B7	CT2		
ESSENTIAL	RTU-CONT FNL	CP-33	RAB 01A	CP-33	RAB 01A		
	LCP-REM SE FNL	LCP-43	RAB 05	LCP-43	RAB 05		
	AUXILIARY PANEL	AF-1	RAB 07A	AF-2	RAB 07B		
	CONTROL PANEL	CP-49	RAB 01A	CP-49	RAB 01A		
	MCC 480V	3A315-S	CT1	3B315-S	CT2		
ESSENTIAL	DRY CLG TWR FAN	3A7	CT1	3B7	CT2		
	RTU-CONT FNL	CP-33	RAB 01A	CP-33	RAB 01A		
	LCP-REM SE FNL	LCP-43	RAB 05	LCP-43	RAB 05		
	AUXILIARY PANEL	AF-1	RAB 07A	AF-2	RAB 07B		
	CONTROL PANEL	CP-49	RAB 01A	CP-49	RAB 01A		
ESSENTIAL	MCC 480V	3A315-S	CT1	3B315-S	CT2		
	DRY CLG TWR FAN	3A7	CT1	3B7	CT2		
	RTU-CONT FNL	CP-33	RAB 01A	CP-33	RAB 01A		
	LCP-REM SE FNL	LCP-43	RAB 05	LCP-43	RAB 05		
	AUXILIARY PANEL	AF-1	RAB 07A	AF-2	RAB 07B		
ESSENTIAL	CONTROL PANEL	CP-49	RAB 01A	CP-49	RAB 01A		
	MCC 480V	3A315-S	CT1	3B315-S	CT2		
	DRY CLG TWR FAN	3A7	CT1	3B7	CT2		
	RTU-CONT FNL	CP-33	RAB 01A	CP-33	RAB 01A		
	LCP-REM SE FNL	LCP-43	RAB 05	LCP-43	RAB 05		

EDASOL SERVICES INC.
SAFE SHUTDOWN ANALYSTS/EQUIPMENT LIST

TABLE 1.5-2
EQUIPMENT AFFECTED BY LIGHT CG.
IT IS LINED TO NOT STABLY

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT LISTED FOR HOT SAFE SHUTDOWN
FILE: WSPDLC DATA CENTER FOR LT RA * ATTENTION: SEE PRG 11/27/74 15.17.17

		EQUIPMENT LISTED AROUND SWEET TRAINS GASSAFCE					
EQUIP TYPE	EQUIPMENT	SR IDENTITY	FIRE AREA	SR IDENTITY	FIRE AREA	SR IDENTITY	FIRE AREA
:	AUXILIARY PANEL	AP-1	RAP 07P	*	*	AP-2	RAP 07P
:	CONTROL PANEL	CP-49	RAP 01A	*	*	CP-49	RAP 01A
:	MCC 4P-1V	30315-S	CT1	*	*	30315-S	CT2
ESSENTIAL:	DNY CLG TWR FAN	3A14	CT1	*	*	3A14	CT2
:	RTOP-CTRL PNL	CP-23	RAP 01A	*	*	CP-23	RAP 01A
:	LOP-REM SO PNL	LOP-43	RAP 09	*	*	LOP-43	RAP 09
:	AUXILIARY PANEL	AP-1	RAP 07P	*	*	AP-2	RAP 07P
:	CONTROL PANEL	CP-49	RAP 01A	*	*	CP-49	RAP 01A
:	MCC 4P-1V	30315-S	CT1	*	*	30315-S	CT2
ESSENTIAL:	DNY CLG TWR FAN	3A15	CT1	*	*	3015	CT2
:	RTOP-CTRL PNL	CP-23	RAP 01A	*	*	CP-23	RAP 01A
:	LOP-REM SO PNL	LOP-43	RAP 09	*	*	LOP-43	RAP 09
:	AUXILIARY PANEL	AP-1	RAP 07P	*	*	AP-2	RAP 07P
:	CONTROL PANEL	CP-49	RAP 01A	*	*	CP-49	RAP 01A
:	MCC 4P-1V	30315-S	CT1	*	*	30315-S	CT2

CHASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
TWO UNITS TO HOT STATION

WATERFORD STEAM ELECTRIC STATION NO. 2
(OFF-CRITIC POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF EQUIPMENT NEEDED FOR HOT UNIT SHUTDOWN
FILE: WATFORD DATA NUMBER NOV 72 IN * PERIOD: WEEKEND 11/27/74 15:15:17

		EQUIPMENT LISTED ACROSS SAFETY TRAINS CATEGORIZED					
		SA	CAI	CAI	CAI		
EQUIP TYPE	EQUIPMENT	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
OPERATIONAL SUB-STEPS: UNIT 2: PREVIEW AUXILIARY COOLING TO COMPONENT COOLING WATER SYSTEM							
SYSTEMS: ZCCN: 2: AUXILIARY COMPONENT COOLING WATER SYSTEM EQUIPMENT USED FOR HOT AND COLD SHUTDOWN							
ESSENTIAL:	ACCU PUMP	3A	PAE 32	*	*	3H	PAE 32
:	RTU-D-CTRL PNL	CP-33	PAE 01A	*	*	CP-33	PAE 01A
:	LEP-PEN SE PNL	LEP-43	PAE 05	*	*	LEP-43	PAE 05
:	AUXILIARY PANEL	AP-1	PAE 07A	*	*	AP-2	PAE 07B
:	CONTROL PANEL	CP-46	PAE 01A	*	*	CP-46	PAE 01A
:	DCS 4.1KV	SA-15	PAE 01A	*	*	SA-15	PAE 01A
ESSENTIAL:	ACCU TERM CTL V	ACC-TRM-CA	PAE 16	*	*	ACC-TRM-CA	PAE 17
:	CONTROL PANEL	CP-46	PAE 01A	*	*	CP-46	PAE 01A
:	AUXILIARY PANEL	AP-1	PAE 07A	*	*	AP-2	PAE 07B
:	CONCEPT	TRM-43	PAE 07A	*	*	TRM-43	PAE 07B
:	MCC 400V	SA-15-S	PAE 01A	*	*	SA-15-S	PAE 01A
ESSENTIAL:	WET CLG TWR FAN	SA1	CT4	*	*	SA1	CT4
:	RTU-D-CTRL PNL	CP-33	PAE 01A	*	*	CP-33	PAE 01A
:	LEP-PEN SE PNL	LEP-43	PAE 05	*	*	LEP-43	PAE 05
:	AUXILIARY PANEL	AP-1	PAE 07A	*	*	AP-2	PAE 07B
:	CONTROL PANEL	CP-46	PAE 01A	*	*	CP-46	PAE 01A
:	MCC 400V	SA-15-S	CT1	*	*	SA-15-S	CT2
ESSENTIAL:	WET CLG TWR FAN	SA1	CT4	*	*	SA1	CT4
:	RTU-D-CTRL PNL	CP-33	PAE 01A	*	*	CP-33	PAE 01A
:	LEP-PEN SE PNL	LEP-43	PAE 05	*	*	LEP-43	PAE 05
:	AUXILIARY PANEL	AP-1	PAE 07A	*	*	AP-2	PAE 07B
:	CONTROL PANEL	CP-46	PAE 01A	*	*	CP-46	PAE 01A
:	MCC 400V	SA-15-S	CT1	*	*	SA-15-S	CT2
ESSENTIAL:	WET CLG TWR FAN	SA1	CT4	*	*	SA1	CT4
:	RTU-D-CTRL PNL	CP-33	PAE 01A	*	*	CP-33	PAE 01A
:	LEP-PEN SE PNL	LEP-43	PAE 05	*	*	LEP-43	PAE 05
:	AUXILIARY PANEL	AP-1	PAE 07A	*	*	AP-2	PAE 07B
:	CONTROL PANEL	CP-46	PAE 01A	*	*	CP-46	PAE 01A
:	MCC 400V	SA-15-S	CT1	*	*	SA-15-S	CT2
ESSENTIAL:	WET CLG TWR FAN	SA1	CT4	*	*	SA1	CT4
:	RTU-D-CTRL PNL	CP-33	PAE 01A	*	*	CP-33	PAE 01A
:	LEP-PEN SE PNL	LEP-43	PAE 05	*	*	LEP-43	PAE 05
:	AUXILIARY PANEL	AP-1	PAE 07A	*	*	AP-2	PAE 07B
:	CONTROL PANEL	CP-46	PAE 01A	*	*	CP-46	PAE 01A
:	MCC 400V	SA-15-S	CT1	*	*	SA-15-S	CT2
ESSENTIAL:	WET CLG TWR FAN	SA1	CT4	*	*	SA1	CT4
:	RTU-D-CTRL PNL	CP-33	PAE 01A	*	*	CP-33	PAE 01A
:	LEP-PEN SE PNL	LEP-43	PAE 05	*	*	LEP-43	PAE 05
:	AUXILIARY PANEL	AP-1	PAE 07A	*	*	AP-2	PAE 07B
:	CONTROL PANEL	CP-46	PAE 01A	*	*	CP-46	PAE 01A
:	MCC 400V	SA-15-S	CT1	*	*	SA-15-S	CT2
ESSENTIAL:	WET CLG TWR FAN	SA1	CT4	*	*	SA1	CT4
:	RTU-D-CTRL PNL	CP-33	PAE 01A	*	*	CP-33	PAE 01A
:	LEP-PEN SE PNL	LEP-43	PAE 05	*	*	LEP-43	PAE 05
:	AUXILIARY PANEL	AP-1	PAE 07A	*	*	AP-2	PAE 07B
:	CONTROL PANEL	CP-46	PAE 01A	*	*	CP-46	PAE 01A
:	MCC 400V	SA-15-S	CT1	*	*	SA-15-S	CT2
ESSENTIAL:	WET CLG TWR FAN	SA1	CT4	*	*	SA1	CT4
:	RTU-D-CTRL PNL	CP-33	PAE 01A	*	*	CP-33	PAE 01A
:	LEP-PEN SE PNL	LEP-43	PAE 05	*	*	LEP-43	PAE 05
:	AUXILIARY PANEL	AP-1	PAE 07A	*	*	AP-2	PAE 07B
:	CONTROL PANEL	CP-46	PAE 01A	*	*	CP-46	PAE 01A

CHASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

17.1. 1.5-2
LOUISIANA POWER & LIGHT CO.
1004 POWER TO HOT STATION

WATERGATE STEAM ELECTRIC STATION NO. 3
OFF-SITE FGM/P NOT AVAILABLE

IDENTITY AND LOCATION OF ESSENTIAL EQUIPMENT NEEDED FOR HOT STATION SHUTDOWN
FIELD WIRELESS DATA CENTER NOV 17 1964 * EFFECT: SUBMITT 11227294 15.15.17

		EQUIPMENT LISTED FOR HOT STATION SHUTDOWN					
		SW	IDENTITY	FIRE AREA	SW	IDENTITY	FIRE AREA
ESSENTIAL:	MCC 400V	SA315-S	CT1	*	SA315-S	CT2	
	WET CLG TWP PAN	SAH	CT3	*	SAH	CT4	
	WTOFD-CTRL PNL	CP-33	RAH 01A	*	CP-33	RAH 01A	
	LCP-REM SD PNL	LCP-43	FAH 01A	*	LCP-43	FAH 01A	
	AUXILIARY PANEL	AI-1	RAH 07A	*	AI-2	RAH 07B	
ESSENTIAL:	CONTROL PANEL	CP-4H	RAH 01A	*	CP-4H	RAH 01A	
	MCC 400V	SA315-S	CT1	*	SA315-S	CT2	
	WET CLG TWP PAN	SAH	CT3	*	SAH	CT4	
	WTOFD-CTRL PNL	CP-33	RAH 01A	*	CP-33	RAH 01A	
	LCP-REM SD PNL	LCP-43	FAH 01A	*	LCP-43	FAH 01A	
ESSENTIAL:	AUXILIARY PANEL	AI-1	RAH 07A	*	AI-2	RAH 07B	
	CONTROL PANEL	CP-4H	RAH 01A	*	CP-4H	RAH 01A	
	MCC 400V	SA315-S	CT1	*	SA315-S	CT2	
	WET CLG TWP PAN	SAH	CT3	*	SAH	CT4	
	WTOFD-CTRL PNL	CP-33	RAH 01A	*	CP-33	RAH 01A	
ESSENTIAL:	LCP-REM SD PNL	LCP-43	FAH 01A	*	LCP-43	FAH 01A	
	AUXILIARY PANEL	AI-1	RAH 07A	*	AI-2	RAH 07B	
	CONTROL PANEL	CP-4H	RAH 01A	*	CP-4H	RAH 01A	
	MCC 400V	SA315-S	CT1	*	SA315-S	CT2	

CHASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
FROM POWER TO HOT SHUTDOWN

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE PUMP NOT AVAILABLE)

IDENTITY AND LOCATION OF ESSENTIAL EQUIPMENT NEEDED FOR HOT SAFE SHUTDOWN
FACILITY WINDUP DATA REVISED NOV 17 1974 BY PERKINS, SCHWARTZ, 11/27/74 15:15:17

		EQUIPMENT LISTED ACROSS SAFETY TRAINS CATEGORIES					
EQUIP TYPE	EQUIPMENT	SA	TA	SB	SA	TA	SB
		IDENTITY	FINE AREA	IDENTITY	FINE AREA	IDENTITY	FINE AREA
OPERATIONAL SUB-STEPS: LADS 2 PROVIDE CHILLED WATER FOR EVAL UNIT							
SYSTEMS LWS 2 CHILLED WATER SYSTEM (EQUIPMENT USED FOR HOT AND COLD SHUTDOWN)							
ESSENTIAL:	CWS PUMP	P-143A-SB3	RAH 02	P-143C-SAB3	RAH 02	P-143B-SB3	RAH 02
:	RTGND-CTRL PNL	CF-1F	RAH 01A	CF-1F	RAH 01A	CF-1F	RAH 01A
:	LOCAL CTRL STATION	LCS	RAH 02	LCS	RAH 02	LCS	RAH 02
:	AUXILIARY PANEL	AP-1	RAH 07A	AP-2	RAH 07D	AP-2	RAH 07B
:	CTRL PNL W/TH CHL	CFVC-1-3A-SA	RAH 02	CFVC-1-3C-SAB	RAH 02	CFVC-1-3B-SB	RAH 02
:	ISOLATION PANEL	IF	RAH 07C	IF	RAH 07C	IF	RAH 07C
:	MCC 4NDV	3A311-S	RAH 06A	3A311-S	RAH 06C	3A311-S	RAH 06B
ESSENTIAL:	CWS WATER CHILN	WC-143A-SAB	RAH 02	WC-143C-SAB3	RAH 02	WC-143B-SB3	RAH 02
:	RTGND-CTRL PNL	CF-1F	RAH 01A	CF-1F	RAH 01A	CF-1F	RAH 01A
:	AUXILIARY PANEL	AP-1	RAH 07A	AP-2	RAH 07D	AP-2	RAH 07B
:	CTRL PNL W/TH CHL	CFVC-1-3A-SA	RAH 02	CFVC-1-3C-SAB	RAH 02	CFVC-1-3B-SB	RAH 02
:	INSTRUMENT PANEL	C101A	RAH 02	C101C	RAH 02	C101B	RAH 02
:	POP	POP-391-SA	RAH 07B	POP-392-SAB	RAH 07C	POP-391-SB	RAH 07B
:	ISOLATION PANEL	IF	RAH 07C	IF	RAH 07C	IF	RAH 07C
:	MCC 4PIV	3A311-S	RAH 06A	3A311-S	RAH 06C	3A311-S	RAH 06B
ESSENTIAL:	CWS BYPASS VALV	SAC-FM127A	RAH 02	SAC-FM131A/P	RAH 02	SAC-FM127B	RAH 02
:	RTGND-CTRL PNL	CF-1F	RAH 01A	CF-1F	RAH 01A	CF-1F	RAH 01A
:	INSTRUMENT PANEL	C101A	RAH 02	C101C	RAH 02	C101B	RAH 02
:	CONTROL PANEL	CF-4A	RAH 01A	CF-4A	RAH 01A	CF-4A	RAH 01A
:	FEF	FEF-361-SA	RAH 07B	FEF-362-SAB	RAH 07C	FEF-361-SB	RAH 07B
:	POP	POP-361-SA	RAH 07B	POP-362-SAB	RAH 07C	POP-361-SB	RAH 07B
:	MCC 4NDV	3A311-S	RAH 06A	3A311-S	RAH 06C	3A311-S	RAH 06B

EBASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
CONTINGENCY PLANS & LIGHT ED.
LIFE FEEDBACK TO HOT STABILITY

WATERFORD STEAM ELECTRIC STATION NO. 3
(COP-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF ESSENTIAL EQUIPMENT LISTED FOR HOT SAFE SHUTDOWN.
FACED W/DEPEC DATA REVERSE NOV 27 78 * REPORTS SEQUENCE 122772L 10.10.17

		EQUIPMENT LISTED ACROSS SAFETY TRAINS SASSARISH					
		SA	LFI	SH			
EQUIP TYPE	EQUIPMENT	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
OPERATIONAL STEPS PL 2 MAINTAIN STEAM CEN INVENTORY FOR REMOVAL OF RIS DEGRAY PLAT							
OPERATIONAL SUB-STEP: DEPT 2 OPERATE L-TH STEAM SYSTEM ATMOSPHERIC DUMP VALVES							
SYSTEM: MCS 2 MAIN STEAM SUPPLY SYSTEM EQUIPMENT USED FOR HOT SHUTDOWN ONLY							
ESSENTIAL:	ATROS DUMP VLV	2MS-PM630B	RAI-ROOF	*	*	2MS-PM630B	RAI-ROOF
:	RTGDD-CTRL PNL	CP-2	RAI 01A	*	*	CP-2	RAI 01A
:	LCP-REM SD PNL	LCP-43	RAI 09	*	*	LCP-43	RAI 09
:	CONTROL PANEL	CP-42	RAI 01A	*	*	CP-42	RAI 01A
:	ISOLATION PANEL	IP	RAI 07C	*	*	IP	RAI 07C
:	SUPSDOP	SUPS 3MI-S	RAI 08D	*	*	SUPS 3MI-S	RAI 08D
:	MCC 4HEV	3MS11-S	RAI 08B	*	*	3MS11-S	RAI 08B
:	MCC 4F0W	3MS12-S	RAI 08B	*	*	3MS12-S	RAI 08B
ESSENTIAL:	LVL TMR SG1	LT-FW1115AS	RCB	*	*	LT-FW1115BS	RCB
:	RTGDD-CTRL PNL	CP-2	RAI 01A	*	*	CP-2	RAI 01A
:	LCP-REM SD PNL	LCP-43	RAI 09	*	*	LCP-43	RAI 09
:	CTRL PNL 4FAC3	LCP-61	RAI 08A	*	*	LCP-62	RAI 08B
ESSENTIAL:	LVL TMR SG2	LT-FW1125AS	RCB	*	*	LT-FW1125BS	RCB
:	RTGDD-CTRL PNL	CP-2	RAI 01A	*	*	CP-2	RAI 01A
:	LCP-REM SD PNL	LCP-43	RAI 09	*	*	LCP-43	RAI 09
:	CTRL PNL 4FAC3	LCP-61	RAI 08A	*	*	LCP-62	RAI 08B
ESSENTIAL:	PRESS TMR CG1	PT-10130	RCB	*	*	PT-10130	RCB
:	RTGDD-CTRL PNL	CP-2	RAI 01A	*	*	CP-2	RAI 01A
:	LCP-REM SD PNL	LCP-43	RAI 09	*	*	CP-10	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-10	RAI 01A
:	CONTROL PANEL	CP-10	RAI 01A	*	*	CID	RCB
:	INSTRUMENT PANEL	CID	RCB	*	*	PT-10230	RCB
ESSENTIAL:	PRESS TMR SG2	PT-10230	RCB	*	*	CP-2	RAI 01A
:	RTGDD-CTRL PNL	CP-2	RAI 01A	*	*	CP-10	RAI 01A
:	LCP-REM SD PNL	LCP-43	RAI 09	*	*	CID	RCB
:	CONTROL PANEL	CP-20	RAI 01A	*	*	TE-PC0112CP	RCB
:	CONTROL PANEL	CP-10	RAI 01A	*	*	CP-7	RAI 01A
:	INSTRUMENT PANEL	CID	RCB	*	*	LCP-43	RAI 09
ESSENTIAL:	MCS CHALLENGE T L1	TE-PC0112CP	RCB	*	*	CP-20	RAI 01A
:	RTGDD-CTRL PNL	CP-2	RAI 01A	*	*	CP-20	RAI 01A
:	LCP-REM SD PNL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CTRL PNL 4FAC3	LCP-61	RAI 08A	*	*	CP-20	RAI 01A
ESSENTIAL:	MCS CHALLENGE T L1	TE-PC0112CP	RCB	*	*	CP-20	RAI 01A
:	RTGDD-CTRL PNL	CP-2	RAI 01A	*	*	CP-20	RAI 01A
:	LCP-REM SD PNL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CTRL PNL 4FAC3	LCP-61	RAI 08A	*	*	CP-20	RAI 01A
ESSENTIAL:	MCS CHALLENGE T L1	TE-PC0112CP	RCB	*	*	CP-20	RAI 01A
:	RTGDD-CTRL PNL	CP-2	RAI 01A	*	*	CP-20	RAI 01A
:	LCP-REM SD PNL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CONTROL PANEL	CP-20	RAI 01A	*	*	CP-20	RAI 01A
:	CTRL PNL 4FAC3	LCP-61	RAI 08A	*	*	CP-20	RAI 01A

ERASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
LOUISIANA POWER & LIGHT CO.

WATERFORD STEAM ELECTRIC STATION NO. 3
OFF-SITE POWER NOT AVAILABLE

IDENTITY AND LOCATION OF NECESSARY EQUIPMENT LISTED FOR UNIT SAFETY SHUTDOWN
FILES: WSPRO DATA FIVEILL FOR 27 74 * REFLECTS CURRENT 11/17/74 15.15.17

		EQUIPMENT LISTED ACROSS SAFETY TRAINS DISPOSITION					
		SA	CA	SI		SI	
EQUIP TYPE	EQUIPMENT	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
ESSENTIAL:	CONTROL PANEL	CP-07	RAH 01A	*	*	CP-28	RAH 01A
	PCS COLLECT T L2	TE-PC01200A	RAH 01A	*	*	TE-PC01200B	RAH 01A
	RTU-CONTROL PNL	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	RTU-CONTROL PNL	CP-8	RAH 01A	*	*		
	LCP-RAH 01A	LCP-45	RAH 01A	*	*		
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	CONTROL PANEL	CP-22	RAH 01A	*	*	CP-22	RAH 01A
	CONTROL PANEL	CP-21	RAH 01A	*	*		
ESSENTIAL:	PCS COLLECT T L2	TE-PC01200C	RAH 01A	*	*	TE-PC01200D	RAH 01A
	RTU-CONTROL PNL	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	CONTROL PANEL	CP-22	RAH 01A	*	*	CP-22	RAH 01A
ESSENTIAL:	PCS FL T L1L2	TE-PC01200E	RAH 01A	*	*	TE-PC01200F	RAH 01A
	LCP-RAH 01A	LCP-45	RAH 01A	*	*	LCP-45	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
ESSENTIAL:	PCS HOTLEG T L1	TE-PC01120A	RAH 01A	*	*	TE-PC01120B	RAH 01A
	RTU-CONTROL PNL	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	LCP-RAH 01A	LCP-45	RAH 01A	*	*	LCP-45	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
ESSENTIAL:	PCS HOTLEG T L2	TE-PC01120C	RAH 01A	*	*	TE-PC01120D	RAH 01A
	RTU-CONTROL PNL	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	LCP-RAH 01A	LCP-45	RAH 01A	*	*	LCP-45	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
ESSENTIAL:	PCS HOTLEG T L1	TE-PC01120E	RAH 01A	*	*	TE-PC01120F	RAH 01A
	RTU-CONTROL PNL	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	LCP-RAH 01A	LCP-45	RAH 01A	*	*	LCP-45	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
ESSENTIAL:	PCS HOTLEG T L2	TE-PC01120G	RAH 01A	*	*	TE-PC01120H	RAH 01A
	RTU-CONTROL PNL	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	LCP-RAH 01A	LCP-45	RAH 01A	*	*	LCP-45	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
ESSENTIAL:	SH-01A	SH-01A	RAH 01A	*	*	SH-01A	RAH 01A
	LOCAL CTRL STATION	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	PCS	CP-7	RAH 01A	*	*	CP-7	RAH 01A
ESSENTIAL:	PCS CHAIN VLV	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	CONTROL PANEL	CP-22	RAH 01A	*	*	CP-22	RAH 01A
	CONTROL PANEL	CP-21	RAH 01A	*	*	CP-21	RAH 01A
ESSENTIAL:	PCS HOTLEG T L1	TE-PC01120I	RAH 01A	*	*	TE-PC01120J	RAH 01A
	RTU-CONTROL PNL	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	LCP-RAH 01A	LCP-45	RAH 01A	*	*	LCP-45	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
ESSENTIAL:	PCS HOTLEG T L2	TE-PC01120K	RAH 01A	*	*	TE-PC01120L	RAH 01A
	RTU-CONTROL PNL	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	LCP-RAH 01A	LCP-45	RAH 01A	*	*	LCP-45	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
ESSENTIAL:	SH-01A	SH-01A	RAH 01A	*	*	SH-01A	RAH 01A
	LOCAL CTRL STATION	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	PCS	CP-7	RAH 01A	*	*	CP-7	RAH 01A
ESSENTIAL:	PCS CHAIN VLV	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	CONTROL PANEL	CP-22	RAH 01A	*	*	CP-22	RAH 01A
	CONTROL PANEL	CP-21	RAH 01A	*	*	CP-21	RAH 01A
ESSENTIAL:	PCS HOTLEG T L1	TE-PC01120M	RAH 01A	*	*	TE-PC01120N	RAH 01A
	RTU-CONTROL PNL	CP-7	RAH 01A	*	*	CP-7	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A
	LCP-RAH 01A	LCP-45	RAH 01A	*	*	LCP-45	RAH 01A
	CONTROL PANEL	CP-27	RAH 01A	*	*	CP-27	RAH 01A

COAST STARVE INC.
117 171-1711 ALTAVALLEY LIT

1.5-2

[illegible]

WATFORD STEAM ELECTRIC STATION NO. 2
OFF-SITE POWER NOT AVAILABLE

[illegible]
$$\frac{1}{4} \left(\frac{1}{4} + \frac{1}{4} + \frac{1}{4} + \frac{1}{4} \right) = \frac{1}{4}$$
[illegible]

EQUASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
IT'S POWER IS NOT SHUT OFF

WATKINS STEAM ELECTRIC STATION NO. 3
(COFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF ESSENTIAL EQUIPMENT LISTED FOR HOT SAFE SHUTDOWN
FIELD WINDUP DATA REVISED FROM 12/78 * REPORTS COLLECTED 11/27/84 15.15.17

		EQUIPMENT LISTED ACROSS SAFETY TRADING BACKGROUND					
EQUIP TYPE	EQUIPMENT	SW	IDENTITY	FIRE AREA	SW	IDENTITY	FIRE AREA
		IDENTITY			IDENTITY		
OPERATIONAL SUB-STEPS (7/8) : PREVENT AIR CONTAMINATING FOR CHILL VAULT AND SWITCHGEAR AREAS							
SYSTEMS W/AVC : SWITCHGEAR AREA AND CHILL VAULT CHILLING SYSTEM EQUIPMENT USED FOR HOT AND COLD SHUTDOWNS							
ESSENTIAL:	AP-10 SWG AREA	AP-30-3A-SW	RAP 27A	*	AP-30-3B-SB	RAP 27A	
:	PTCHL-CTRL PNL	CP-10	RAP 01A	*	CP-10	RAP 01A	
:	LEP-REM SO PNL	LEP-43	RAP 07	*	LEP-43	RAP 07	
:	RCC 4/1V	RA111-S	RAP 06A	*	RA111-S	RAP 06B	
ESSENTIAL:	INTAKE DAMPER	D-44(SB)	RAP 27A	*	D-44(SB)	RAP 27A	
:	AUXILIARY PANEL	AP-1	RAP 07A	*	AP-2	RAP 07B	
:	RCC	REF-395-SB	RAP 07A	*	REF-395-SB	RAP 07B	
ESSENTIAL:	LWS CONTROL VALV	3AC-TH117A	RAP 27A	*	3AC-TH117B	RAP 27A	
:	CONTROL PANEL	CP-44(FAC)	RAP 01A	*	CP-44(FAC)	RAP 01A	
:	RCC	RCC-395-SB	RAP 07A	*	RCC-395-SB	RAP 07B	
ESSENTIAL:	AP-10 SWG-CDU VL	AP-20-3A-SW	RAP 03	*	AP-20-3B-SB	RAP 03	
:	PTCHL-CTRL PNL	CP-10	RAP 01A	*	CP-10	RAP 01A	
:	LEP-REM SO PNL	LEP-43	RAP 07	*	LEP-43	RAP 07	
:	CONTROL PANEL	CP-44	RAP 01A	*	CP-44	RAP 01A	
:	RCC 4/1V	RA111-S	RAP 06A	*	RA111-S	RAP 06B	
ESSENTIAL:	INTAKE DAMPER	D-44(SB)	RAP 03	*	D-44(SB)	RAP 03	
:	PTCHL-CTRL PNL	CP-10	RAP 01A	*	CP-10	RAP 01A	
:	AUXILIARY PANEL	AP-1	RAP 07A	*	AP-2	RAP 07B	
:	ISOLATION PANEL	IP	RAP 07C	*	IP	RAP 07C	
:	RCC	REF-361-SB	RAP 06A	*	REF-361-SB	RAP 06B	
ESSENTIAL:	RECIRC DAMPER	D-44(SB)	RAP 03	*	D-44(SB)	RAP 03	
:	PTCHL-CTRL PNL	CP-10	RAP 01A	*	CP-10	RAP 01A	
:	AUXILIARY PANEL	AP-1	RAP 07A	*	AP-2	RAP 07B	
:	ISOLATION PANEL	IP	RAP 07C	*	IP	RAP 07C	
:	RCC	REF-361-SB	RAP 06A	*	REF-361-SB	RAP 06B	
ESSENTIAL:	INLET DAMPER	D-44(SB)	RAP 03	*	D-44(SB)	RAP 03	
:	PTCHL-CTRL PNL	CP-10	RAP 01A	*	CP-10	RAP 01A	
:	AUXILIARY PANEL	AP-1	RAP 07A	*	AP-2	RAP 07B	
:	ISOLATION PANEL	IP	RAP 07C	*	IP	RAP 07C	
:	RCC	REF-361-SB	RAP 06A	*	REF-361-SB	RAP 06B	
ESSENTIAL:	LWS CONTROL VALV	3AC-TH117A	RAP 03	*	3AC-TH117B	RAP 03	
:	CONTROL PANEL	CP-44(FAC)	RAP 01A	*	CP-44(FAC)	RAP 01A	
:	AUXILIARY PANEL	AP-1	RAP 07A	*	AP-2	RAP 07B	
:	RCC	REF-361-SB	RAP 06A	*	REF-361-SB	RAP 06B	

TABLE 1.5-2

EDASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

LOUISIANA POWER & LIGHT CO.
100A POWER IS NOT STABLE

WATERFIRE STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT ELICED FOR HOT SAFE SHUTDOWN
FILES: WFSDEPC DATA DEVICE NOV 07 19 * REFORM: SLEVERIT 11/27/19 15:15:17

		EQUIPMENT LISTED ACROSS SAFETY TRAINS DISAPPEAR					
EQUIP TYPE	EQUIPMENT	SA	SA	SA	SA	SA	SA
		IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA

OPERATIONAL SUB-STATION 3704 : PROVIDE ENVIRONMENT FOR BATTERY ROOM - SA-S							
SYSTEM: PMS : BATTERY ROOM EXHAUST SYSTEM RE-DESIGN USE FOR HOT AND COLD SHUTDOWN							
ESSENTIAL:	AM-EXH FAN	E-09-2A-SA	RAL 07A	*	*	L-29-3E-SB	RAL 07A
:	INTER-CNTL FAN	CF-1B	RAL 01A	*	*	CF-1B	RAL 01A
:	AUXILIARY FANFL	AF-1	RAL 07A	*	*	AF-2	RAL 07B
:	NCC APMV	3A-11-S	RAL 07A	*	*	3A-11-S	RAL 07D
SUPPORT:	AM-EXH FAN	E-09-2A-SA	RAL 07A	*	*	E-09-3D-SB	RAL 07A
:	INTER-CNTL FAN	CF-1B	RAL 01A	*	*	CF-1B	RAL 01A
:	AUXILIARY FANFL	AF-1	RAL 07A	*	*	AF-2	RAL 07L
:	CONTROL PANEL	CF-42	RAL 01A	*	*	CF-42	RAL 01A
:	NCC APMV	3A-11-S	RAL 07A	*	*	3A-11-S	RAL 07L

EBASCO SERVICES INC.
SAFE SHUTDOWN ANALYSTS: EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
FROM POWER TO HOT STANDBY

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT NEEDED FOR HOT SAFE SHUTDOWN
FILE: WFSDEPC DATA REVISED NOV 27 84 * DELETED: SDEWPPH 11/27/84 15:15:17

		EQUIPMENT LISTED ACROSS SAFETY TRAINS SAISADISH					
EQUIP TYPE	EQUIPMENT	SA		SAP		SD	
		IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA

OPERATIONAL SUB-STEPS: 0705 : PROVIDE ENVIRONMENT FOR BATTERY ROOM - 70-S							
SYSTEM: LINES : BATTERY ROOM EXHAUST SYSTEM (EQUIPMENT USED FOR HOT AND COLD SHUTDOWN)							
ESSENTIAL:	AN-EAN FAN	E-50-5A-SA	FAB 03A	*	*	E-20-3B-SH	RAF 03A
:	RTCD-ENTL EPL	CE-1H	FAB 01A	*	*	CF-1H	RAU 01A
:	AUXILIARY PANEL	AP-1	FAB 07A	*	*	AF-2	RAF 07B
:	MCC 480V	3A311-S	FAB 06A	*	*	3A311-S	RAF 06B
SUPPORT:	AN-EAN FAN	E-50-5A-SA	FAB 03A	*	*	E-12-3B-SH	RAF 03A
:	RTCD-ENTL PNL	CE-1H	FAB 01A	*	*	CP-1H	RAE 01A
:	AUXILIARY PANEL	AP-1	FAB 07A	*	*	AP-2	RAU 07B
:	CONTROL PANEL	CE-42	FAB 01A	*	*	CP-42	RAF 01A
:	MCC 480V	3A311-S	FAB 06A	*	*	3A311-S	RAF 06B

EBASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS: EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
1992 POWER TO HOT STANLEY

WATTFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF EQUIPMENT LISTED FOR HOT SAFE SHUTDOWN
FILE: WPSDEFC DATA REVISED NOV 27 79 * REPORT: SHWRTT11 11/27/79 15:15:17

		EQUIPMENT LISTED ACROSS SAFETY TRAINING SCHEDULE					
EQUIP TYPE	EQUIPMENT	SA	DAE	SP	FIRE AREA	SA	DAE
		IDENTITY	IDENTITY	IDENTITY		IDENTITY	IDENTITY
OPERATIONAL SUB-STEP: 0706 : PROVIDE ENVIRONMENT FOR BATTERY ROOM - 7A1-S							
SYSTEM: DPLS : BATTERY ROOM EXHAUST SYSTEM (EQUIPMENT USED FOR HOT AND COLD SHUTDOWN)							
ESSENTIAL:	AN-EXH FAN	E-01-5A-5A	RAF 03A	.	.	E-01-3D-SH	RAF 03A
:	RTGEE-CYCL FAN	CF-1A	RAF 01A	.	.	CF-1B	RAF 01A
:	AUXILIARY PANEL	AF-1	PAE 07A	.	.	AP-2	PAE 07B
:	MCC 4P04	3A311-S	PAE 06A	.	.	3B311-S	PAE 06B
SUPPORT:	AN-EXH FAN	E-02-2A-5A	RAF 02A	.	.	E-02-2B-SH	RAF 03A
:	RTGEE-CYCL FAN	CF-1A	PAE 01A	.	.	CF-1B	RAF 01A
:	AUXILIARY PANEL	AF-1	PAE 07A	.	.	AF-2	RAF 07B
:	CONTROL PANEL	CF-42	PAE 01A	.	.	CF-45	PAE 01A
:	MCC 4P04	3A311-S	PAE 06A	.	.	3B311-S	RAF 06B

CHASCO SERVICES INC.
SAFE SHELTER ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
100% POWER TO HOT STANBY

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT USED FOR HOT COLD SHUTDOWN
FILE: WFSOLPC DATA REVISED NOV 17 84 * REPORT: SHELTER 11/27/84 15.15.17

EQUIP TYPE		EQUIPMENT		EQUIPMENT LISTED ACROSS SAFETY TRAINS SALSABISH		EQUIPMENT			
				SA	SAF	LU			
				IDENTITY	FIRE AREA	IDENTITY	FIRE AREA		
OPERATIONAL SUB-STEP: 5707 : PROVIDE AIR COOLING FOR PLV ROOM									
SYSTEM: MYRVS : PLV ROOM VENTILATION SYSTEM (EQUIPMENT USED FOR HOT AND COLD SHUTDOWN)									
ESSENTIAL:	AM-AIR HANDLER	AM-13-SA-SA	RAH 02	.	.	AM-13-SF-SH	RAH 02		
:	RTGND-CTRL PNL	CP-1P	RAH 01A	.	.	CP-1P	RAH 01A		
:	AUXILIARY PANEL	AP-1	RAH 07A	.	.	AP-2	RAH 07B		
:	CONTROL PANEL	CP-41	RAH 01A	.	.	CP-42	RAH 01A		
:	MCC 480V	SB313-S	RAH 08A	.	.	SB313-S	RAH 08B		
SUPPORT:	AM-EXH FAN	F-41-SA-SA	RAH 02	.	.	F-41-SB-SB	RAH 02		
:	RTGND-CTRL PNL	CP-1P	RAH 01A	.	.	CP-1P	RAH 01A		
:	AUXILIARY PANEL	AP-1	RAH 07A	.	.	AP-2	RAH 07B		
:	LOCAL CTRL STATION	LCS	RAH 02	.	.	LCS	RAH 02		
:	MCC 480V	SB313-S	RAH 08A	.	.	SB313-S	RAH 08B		
ESSENTIAL:	OUTSIDE AIR DMP	LD-1(CA)	RAH 02	.	.	LD-2(CB)	RAH 02		
:	CONTROL PANEL	CP-41(PAC)	RAH 01A	.	.	CP-44(PAC)	RAH 01A		
:	AUXILIARY PANEL	AP-1	RAH 07A	.	.	AP-2	RAH 07B		
:	ISOLATION PANEL	IP	RAH 07C	.	.	IP	RAH 07C		
:	FDP	FDP-361-SA	RAH 08A	.	.	FDP-361-SF	RAH 08B		
ESSENTIAL:	RETURN AIR DMP	D-1(CA)	RAH 02	.	.	D-1(CB)	RAH 02		
:	CONTROL PANEL	CP-41(PAC)	RAH 01A	.	.	CP-44(PAC)	RAH 01A		
:	AUXILIARY PANEL	AP-1	RAH 07A	.	.	AP-2	RAH 07B		
:	ISOLATION PANEL	IP	RAH 07C	.	.	IP	RAH 07C		
:	FDP	FDP-361-SA	RAH 08A	.	.	FDP-361-SB	RAH 08B		

ENASCO SERVICES INC.
SAFE SYSTEMS ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
LOCK POWER TO HOT STANBY

WILLFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT FOLLOWS FOR HOT SAFE SHUTDOWN
FILLS: ** DATA REVISED NOV 27 64 * REVISIT: SEPTEMBER 11/27/64 15.15.17

EQUIP TYPE		EQUIPMENT		EQUIPMENT LISTED ACROSS SAFETY TRAINS SACRAMENTO		EQUIPMENT LISTED ACROSS SAFETY TRAINS SACRAMENTO	
		SA	SA	SA	SA	SA	SA
		IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
OPERATIONAL STEPS: ON : CONTROL PRESSURIZER FAILURE							
OPERATIONAL SUB-STEP: 001 : CONTROL PRESSURIZER PRESSURE AND LEVEL							
SYSTEM: PDS : PRESSURIZER PLANT TANK CYCLE (REDUNDANT CELL FOR HOT AND COLD SHUTDOWN)							
ESSENTIAL:	PRZR HTR HTR	NS	FCI	*	*	NS	FCI
:	CONTROL PANEL	CP-2	RAL 01A	*	*	CP-2	RAL 01A
:	LCP-HTR SD PNL	LCP-43	RAL 09	*	*	LCP-43	RAL 09
ESSENTIAL:	PRZR LVL TMR	LT-110Y	NCI	*	*	LT-110Y	PCP
:	CONTROL PANEL	CP-2	RAL 01A	*	*	CP-2	RAL 01A
:	LCP-HTR SD PNL	LCP-43	RAL 09	*	*	LCP-43	RAL 09
:	AUXILIARY PANEL	AP-4	RAL 07A	*	*	AP-4	RAL 07A
:	CONTROL PANEL	CP-20	RAL 01A	*	*	CP-20	RAL 01A
:	CONTROL PANEL	CP-21	RAL 01A	*	*	CP-30	RAL 01A
:	INSTRUMENT PANEL	C1A	PCP	*	*	C1B	PCP
ESSENTIAL:	PRZR LVL TMR	LT-RC-110YAS	FCI	*	*		
:	RTMR-CTRL PNL	CP-6	RAL 01A	*	*		
:	LCP-HTR SD PNL	LCP-43	RAL 09	*	*		
:	CTRL PNL/PAC	LCP-61	RAL 09A	*	*		
ESSENTIAL:	PRZR PRESS TMR	PT-102A	FCI	*	*	PT-102B	PCP
:	CONTROL PANEL	CP-7	RAL 01A	*	*	CP-7	RAL 01A
:	LCP-HTR SD PNL	LCP-43	RAL 09	*	*	LCP-43	RAL 09
:	AUXILIARY PANEL	AP-4	RAL 07A	*	*	AP-4	RAL 07A
:	CONTROL PANEL	CP-20	RAL 01A	*	*	CP-20	RAL 01A
:	CONTROL PANEL	CP-10	RAL 01A	*	*	CP-10	RAL 01A
:	INSTRUMENT PANEL	C1A	NCI	*	*	C1B	PCP
ESSENTIAL:	PRZR PRESS TMR	PT-102C	FCI	*	*	PT-101D	PCP
:	RTMR-CTRL PNL	CP-7	RAL 01A	*	*	CP-7	RAL 01A
:	CONTROL PANEL	CP-27	RAL 01A	*	*	CP-28	RAL 01A
:	CONTROL PANEL	CP-10	RAL 01A	*	*	CP-10	RAL 01A
ESSENTIAL:	PRZR PRESS TMR	PT-100Y	FCI	*	*	PT-100Y	PCP
:	RTMR-CTRL PNL	CP-2	RAL 01A	*	*	CP-2	RAL 01A
:	AUXILIARY PANEL	AP-4	RAL 07A	*	*	AP-4	RAL 07A
:	CONTROL PANEL	CP-20	RAL 01A	*	*	CP-30	RAL 01A
:	CONTROL PANEL	CP-30	RAL 01A	*	*	CP-5	RAL 01A
ESSENTIAL:	PRZR PRESS TMR	*	*	PT-100Y	FCI	*	*
:	CONTROL PANEL	*	*	CP-2	RAL 01A	*	*
:	LCP-HTR SD PNL	*	*	LCP-43	RAL 09	*	*
:	AUXILIARY PANEL	*	*	AP-4	RAL 07A	*	*
:	CONTROL PANEL	*	*	CP-20	RAL 01A	*	*
ESSENTIAL:	PRZR PRESS TMR	*	*	PT-100Y	FCI	*	*
:	CONTROL PANEL	*	*	CP-2	RAL 01A	*	*
:	LCP-HTR SD PNL	*	*	LCP-43	RAL 09	*	*
:	AUXILIARY PANEL	*	*	AP-4	RAL 07A	*	*
:	CONTROL PANEL	*	*	CP-20	RAL 01A	*	*
ESSENTIAL:	PRZR PRESS TMR	*	*	PT-100Y	FCI	*	*
:	CONTROL PANEL	*	*	CP-2	RAL 01A	*	*
:	LCP-HTR SD PNL	*	*	LCP-43	RAL 09	*	*
:	AUXILIARY PANEL	*	*	AP-4	RAL 07A	*	*
:	CONTROL PANEL	*	*	CP-20	RAL 01A	*	*

EDASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
10-A FINDER TO HOT STANLEY

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT NEEDED FOR HOT SAFE SHUTDOWN
FILE: ** DATA REVISED NOV 27 84 * REPORT: DOWEN 11/27/84 15.15.17

		EQUIPMENT LISTED ACROSS SAFETY TRAILS KANSAS/SDP					
		SW	SW	SW	SW	SW	SW
EQUIP TYPE	EQUIPMENT	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
ESSENTIAL:	AUXILIARY PANEL	*	*	PI-8	PA-17A	*	*
	CONTROL PANEL	*	*	CP-31	PA-01A	*	*
	FRZR PRESS	PT-105	RCH	*	*	PT-104	RCH
	RTGCD-ENTL PNL	CP-2	RAE 01A	*	*	CP-2	RAE 01A
ESSENTIAL:	AUXILIARY PANEL	*	*	*	*	AF-2	RAE 07B
	AUXILIARY PANEL	AP-1	PA-17A	*	*	*	*
	ISOLATION PANEL	IF	RAE 07C	*	*	IF	RAE 07C
	CONTROL PANEL	CP-25	RAE 01A	*	*	CP-26	RAE 01A
ESSENTIAL:	FRZR PRESS	PT-105	RCH	*	*	PT-106	RCH
	ISOLATION PANEL	IF	RAE 07C	*	*	IF	RAE 07C
	CONTROL PANEL	CP-27	RAE 01A	*	*	CP-27	RAE 01A
	FRZR PRESS/RAE	PT-101A	RCH	*	*	PT-101H	RCH
ESSENTIAL:	RTGCD-ENTL PNL	CP-7	RAE 01A	*	*	CP-7	RAE 01A
	CONTROL PANEL	CP-25	RAE 01A	*	*	CP-26	RAE 01A
	CONTROL PANEL	CP-10	RAE 01A	*	*	CP-10	RAE 01A
	FRZR PRESS/RAE	PT-1010	RCH	*	*	PT-1010	RCH
ESSENTIAL:	RTGCD-ENTL PNL	CP-7	RAE 01A	*	*	CP-7	RAE 01A
	CONTROL PANEL	CP-27	RAE 01A	*	*	CP-28	RAE 01A
	CONTROL PANEL	CP-10	RAE 01A	*	*	CP-10	RAE 01A
	R CORE DIFF PRES	PT-124X	RCH	*	*	PT-124W	RCH
ESSENTIAL:	RTGCD-ENTL PNL	CP-2	RAE 01A	*	*	CP-2	RAE 01A
	CONTROL PANEL	CP-31	RAE 01A	*	*	CP-31	RAE 01A
	SUBCOOL PRG MNT	T-RC-2200A	RCH	*	*	T-RC-2200H	RCH
	RTGCD-ENTL PNL	CP-8	RAE 01A	*	*	CP-8	RAE 01A
ESSENTIAL:	RTGCD-ENTL PNL	CP-2	RAE 01A	*	*	CP-2	RAE 01A
	LCF-PEM SO PNL	LCF-43	RAE 07	*	*	LCF-43	RAE 07
	FRZR SPRAY VLV	IRC-1501A	RCH	*	*	IRC-1502B	RCH
	RTGCD-ENTL PNL	CP-2	RAE 01A	*	*	CP-2	RAE 01A
ESSENTIAL:	AUXILIARY PANEL	AP-1	PA-17A	*	*	AP-2	RAE 07B
	EDP	EDP-206-SAP	RAE 07	*	*	PDP-396-SAP	RAE 07

TABLE 1.5-2

EDASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

LOUISIANA POWER & LIGHT CO.
HOT STANDBY TO COLD SECTION

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE TOWN NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT LISTED FOR COLD SAFE SHUTDOWN
FILES: ** DATA REVEAL NOV 27 84 * ALFONSI: 11/27/84 15.17.00

EQUIPMENT LISTED ACROSS SAFETY TRAINS SACSABISH

EQUIP TYPE	EQUIPMENT	SA IDENTITY	FIREF AREA	SAF IDENTITY	FIREF AREA	SE IDENTITY	FIREF AREA
OPERATIONAL STEP: C1 : SUPPLEMENTAL COLD SHUTDOWN STEPS							
OPERATIONAL SUB-STEP: C1C1 : ROTATE PCS TO COLD SHUTDOWN CONDITIONS							
SYSTEM: CVCS : CHEMICAL VOLUME AND CONTROL SYSTEM EQUIPMENT USED FOR COLD SHUTDOWN ONLY							
ESSENTIAL:	BOFIC ACID PUMP	34	RAE 39	.	.	3E	RAE 39
:	RTUO-CONTL PNL	CF-4	RAE 01A	.	.	CF-4	RAE 01A
:	LCP-REM SC PNL	LCP-43	RAE 09	.	.	LCP-43	RAE 09
:	AUXILIARY PANEL	AF-1	RAE 07A	.	.	AF-2	RAE 07B
:	ISOLATION PANEL	IF	RAE 07C	.	.	IF	RAE 07C
:	MCC 480V	.	.	.	.	3E311-S	RAE 08E
:	MCC 480V	3E311-S	RAE 08A	.	.	.	.
ESSENTIAL:	DAMU LVL-LCL TRD	34(INS)	RAE 39	.	.	34(INS)	RAE 39
:	CONTROL PANEL	CP-4	RAE 01A	.	.	CP-4	RAE 01A
:	CONTROL PANEL	.	.	CF-29	RAE 01A	.	.
:	CONTROL PANEL	.	.	CF-2E	RAE 01A	.	.
:	SUPS	.	.	SAF	RAE 08C	.	.
:	PDP	.	.	LCP-3AL-SAE	RAE 08C	.	.
:	MCC 480V	.	.	3E311-S	RAE 08C	.	.
ESSENTIAL:	DAMU TRA HTR LNK	341-1(INS)	RAE 39	.	.	341-2(INS)	RAE 39
:	LOCAL ONTLE STATN	LCS	RAE 39	.	.	LCS	RAE 39
:	AUXILIARY PANEL	AF-1	RAE 07A	.	.	AP-2	RAE 07B
:	MCC 480V	3E311-S	RAE 08A	.	.	3E311-S	RAE 08B
ESSENTIAL:	DAMU TRA HTR LNK	341-1(INS)	RAE 39	.	.	341-2(INS)	RAE 39
:	LOCAL ONTLE STATN	LCS	RAE 39	.	.	LCS	RAE 39
:	AUXILIARY PANEL	AF-1	RAE 07A	.	.	AP-2	RAE 07B
:	PDP	FF-390-SAE	RAE 07A	.	.	PDP-391-SH	RAE 07B
:	MCC 480V	3E311-S	RAE 08A	.	.	3E311-S	RAE 08B
ESSENTIAL:	PA HEAT TRACING	34(INS)	RAE 39	.	.	34(INS)	RAE 39
:	AUXILIARY PANEL	AF-1	RAE 07A	.	.	AF-2	RAE 07B
:	MCC 480V	3E311-S	RAE 08A	.	.	3E311-S	RAE 08B
ESSENTIAL:	BA GRAY ED VLV	341-V107A	RAE 39	.	.	341-V107B	RAE 39
:	CONTROL PANEL	CP-4	RAE 01A	.	.	CP-4	RAE 01A
:	LCP-REM SC PNL	LCP-43	RAE 09	.	.	LCP-43	RAE 09
:	AUXILIARY PANEL	AF-2	RAE 07B	.	.	AF-2	RAE 07C
:	MCC 480V	3E311-S	RAE 08A	.	.	3E311-S	RAE 08B
ESSENTIAL:	CHARGE IN FUEL	CF-4	RAE 01A	.	.	CF-4	RAE 01A
:	CONTROL PANEL	CF-4	RAE 01A	.	.	CF-4	RAE 01A
:	LCP-REM SC PNL	LCP-43	RAE 09	.	.	LCP-43	RAE 09
:	AUXILIARY PANEL	AF-1	RAE 07A	.	.	AF-2	RAE 07B
:	ISOLATION PANEL	IF	RAE 07C	.	.	IF	RAE 07C

EBASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
HOT STANDBY TO COLD SHUTDOWN

CATFORD STEAM ELECTRIC STATION NO. 3
OFF-SITE POWER NOT AVAILABLE

IDENTITY AND LOCATION OF EQUIPMENT LISTED FOR COLD SAFE SHUTDOWN
FILE: ** DATA REVISED NOV 27 54 * REPORT: REVERSED 11/27/54 15.17.54

		EQUIPMENT LISTED ACROSS SAFETY TRADING SASSARISH					
EQUIP TYPE	EQUIPMENT	SA IDENTITY	FIRE AREA	END IDENTITY	FIRE AREA	SI IDENTITY	FIRE AREA
SUPPORT:	SUMP BUS 480V	3A31-S	RAB 08A	3A31-S	RAB 08C	3A31-S	RAB 07E
	LOCAL COOLER	AR-1B-3A-SA	RAB 39	.	.	AR-1P-3F-SB	RAB 39
	RTD-BD-CNTL PNL	CP-4P	RAB 01A	.	.	CP-1P	RAB 01A
	LOCAL CNTL STATN	LCS	RAB 39	.	.	LCS	RAB 39
	AUXILIARY PANEL	AF-1	RAB 07A	.	.	AF-2	RAB 07H
SUPPORT:	SUPPLYING UNIT	3AC-1B-07A	RAB 39	.	.	3AC-1B-07A	RAB 39
	MCC 480V	3A311-S	RAB 01A	.	.	3A311-S	RAB 08F
	LOCAL COOLER	AR-2C-3A-SA	RAB 39	.	.	AR-2P-3F-SB	RAB 39
	RTD-BD-CNTL PNL	CP-1P	RAB 01A	.	.	CP-1H	RAB 01A
	LOCAL CNTL STATN	LCS	RAB 39	.	.	LCS	RAB 39
SUPPORT:	SUPPLYING UNIT	3AC-1B-07A	RAB 39	.	.	3AC-1B-07A	RAB 39
	AUXILIARY PANEL	.	.	AF-3	RAB 07E	.	.
	MCC 480V	.	.	3A311-S	RAB 01C	.	.
	SEAL LUM FMI MTR	3A	RAB 39	3A	RAB 39	3A	RAB 39
	LOCAL CNTL STATN	LCS	RAB 39	LCS	RAB 39	LCS	RAB 39
ESSENTIAL:	LOCAL STARTER	LS	RAB 39	LS	RAB 39	LS	RAB 39
	TRM HUAED	TH	RAB 39	TH	RAB 39	TH	RAB 39
	POF	POF-3A-1C-SA	RAB 08A	POF-3A-1C-SA	RAB 08C	POF-3A-1C-SB	RAB 08F
	SUMP BUS 480V	3A31-S	RAB 08A	3A31-S	RAB 08C	3A31-S	RAB 08B
	AUX SEPAR VLV	ICP-1C-05A	RAB	.	.	ICP-1C-05B	RAB
ESSENTIAL:	CONTROL PANEL	CP-4	RAB 01A	.	.	CP-4	RAB 01A
	LCP-REM SE PNL	LCP-43	RAB 09	.	.	LCP-43	RAB 09
	AUXILIARY PANEL	AF-1	RAB 07A	.	.	AF-2	RAB 07B
	POF	POF-3A-1C-SA	RAB 08A	.	.	POF-3A-1C-SB	RAB 08F
	BATTERY CHARGER	3A1-S	RAB 08A	.	.	3A1-S	RAB 08F
ESSENTIAL:	MCC 480V	3A311-S	RAB 01A	.	.	3A311-S	RAB 08B
	BATTERY CHARGER	3A2-S	RAB 08A	.	.	3A2-S	RAB 08F
	MCC 480V	3A312-S	RAB 08A	.	.	3A312-S	RAB 08F
	POF	POF-3A-1C-SA	RAB 07A	.	.	POF-3A-1C-SB	RAB 07F
	SUPS	3A-S	RAB 08A	.	.	3A-S	RAB 08B
ESSENTIAL:	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B
	MCC 480V	3A312-S	RAB 08A	.	.	3A312-S	RAB 08F
	CHRG LIA-L2A VLV	ICP-1C-05A	RAB	.	.	ICP-1C-05B	RAB
	CONTROL PANEL	CP-4	RAB 01A	.	.	CP-4	RAB 01A
	LCP-REM SE PNL	LCP-43	RAB 09	.	.	LCP-43	RAB 09
ESSENTIAL:	AUXILIARY PANEL	AF-1	RAB 07A	.	.	AF-2	RAB 07B
	POF	POF-3A-1C-SA	RAB 08A	.	.	POF-3A-1C-SB	RAB 08F
	BATTERY CHARGER	3A1-S	RAB 08A	.	.	3A1-S	RAB 08F
	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B
	BATTERY CHARGER	3A2-S	RAB 08A	.	.	3A2-S	RAB 08F
ESSENTIAL:	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B
	POF	POF-3A-1C-SA	RAB 07A	.	.	POF-3A-1C-SB	RAB 07F
	SUPS	3A-S	RAB 08A	.	.	3A-S	RAB 08B
	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B
	MCC 480V	3A312-S	RAB 08A	.	.	3A312-S	RAB 08F

EBASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS: EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
NOT STANLEY TO COLE FOLLOWING

WATERGARD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT NEEDED FOR COLE SAFE SHUTDOWN
FILE: ** DATA REVISED NOV 27 88 * REVERT: CLEVELAND 11/27/88 15.17.19

EQUIP. TYPE	EQUIPMENT	EQUIPMENT LISTED ABOVE		SAFETY TRIP/SAFARI		SF	
		SA IDENTITY	FIRE AREA	SAF IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
ESSENTIAL:	MCC 480V	30312-S	RAB 06A	.	.	30312-S	RAB 06A
	MCC 480V	30313-S	RAB 06B	.	.	30313-S	RAB 06B
	R MU BYPASS VALV	.	.	2CH-V112A/B	RAB 39	.	.
	RTGDD-CHTL PNL	.	.	CP-4	RAB 01A	.	.
ESSENTIAL:	LCP-REM SU PNL	.	.	LCP-43	RAB 05	.	.
	AUXILIARY PANEL	.	.	AF-1	RAB 07A	.	.
	MCC 480V	.	.	30311-S	RAB 08A	.	.
	CHC FPL DISC VALV	.	.	2CH-F102A/B	RAB 32	.	.
ESSENTIAL:	RTGDD-CHTL PNL	.	.	CP-4	RAB 01A	.	.
	AUXILIARY PANEL	.	.	IP-4	RAB 07A	.	.
	FE	.	.	FLI-140AB	RAB 07A	.	.
	CHC F REFUEL VALV	.	.	2CH-V121A/B	RAB 39	.	.
ESSENTIAL:	RTGDD-CHTL PNL	.	.	CP-4	RAB 01A	.	.
	LCP-REM SU PNL	.	.	LCP-43	RAB 05	.	.
	ISOLATION PANEL	.	.	IP	RAB 07C	.	.
	MCC 480V	.	.	30311	RAB 08C	.	.
ESSENTIAL:	VC TMR FISC VALV	.	.	.	.	2CH-V123A/B	RAB 39
	CONTROL PANEL	.	.	.	.	CP-4	RAB 01A
	LCP-REM SU PNL	.	.	.	.	LCP-43	RAB 05
	AUXILIARY PANEL	.	.	.	.	AF-2	RAB 07A
ESSENTIAL:	ISOLATION PANEL	.	.	.	.	IP	RAB 07C
	MCC 480V	.	.	.	.	30311-S	RAB 08B
	CHC FPL DISC VALV	.	.	2CH-F1140AB	RAB 39	.	.
	SWGR BUS 480V	.	.	30311-S	RAB 08C	.	.

EBASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS/EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
NET STANDBY TO COOL SHUTDOWN

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF REDUNDANT EQUIPMENT NEEDED FOR COLD SAFE SHUTDOWN
FILE: ** DATA REVISED NOV 27 84 * REPORT: LEPW-26 11/27/84 15.17.19

		EQUIPMENT LISTED ACROSS SAFETY TRAILS CATEGORIES					
EQUIP TYPE	EQUIPMENT	SA	SA	SA	SA	SA	SA
		IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
OPERATIONAL SUB-SYSTEM: V102 : STANT SHUTDOWN COOLING SYS AT RCS AVE. TANK TEMP OF 250F							
SYSTEM: SACS : SHUTDOWN COOLING SYSTEM (EQUIPMENT USED FOR COLD SHUTDOWN ONLY)							
ESSENTIAL:	LFGI PUMP	3A	RAH 3A	.	.	3B	RAH 3B
:	RTGDD-CTRL PNL	CP- H	RAH 01A	.	.	CP- H	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAH 01	.	.	LCP-43	RAH 01
:	AUXILIARY PANEL	AP-1	RAH 07A	.	.	AP-2	RAH 07B
:	BUS 4.16KV	3A3-S	RAH 01A	.	.	3B3-S	RAH 08B
SUPPORT:	LOCAL COOLER	AP-2-3A-5A	RAH 3A	.	.	AP-2-3B-5B	RAH 3B
:	RTGDD-CTRL PNL	CP-1B	RAH 01A	.	.	CP-1P	RAH 01A
:	LOCAL CTRL STATION	LCS	RAH 3A	.	.	LCS	RAH 3B
:	AUXILIARY PANEL	AP-1	RAH 07A	.	.	AP-2	RAH 07B
:	ISOLATION PANEL	IP	RAH 07C	.	.	IP	RAH 07C
:	MCC 480V	3A313-S	RAH 01A	.	.	3B313-S	RAH 01B
ESSENTIAL:	SIS RECIRC VALV	2SI-V005A	RAH 32	.	.	2SI-V001B	RAH 32
:	RTGDD-CTRL PNL	CP- H	RAH 01A	.	.	CP- H	RAH 01A
:	AUXILIARY PANEL	AP-1	RAH 07A	.	.	AP-2	RAH 07B
:	MCC 480V	3A311-S	RAH 01A	.	.	3B311-S	RAH 08B
ESSENTIAL:	SIS RECIRC VALV	2SI-V016A	RAH 32	.	.	2SI-V002B	RAH 32
:	RTGDD-CTRL PNL	CP- H	RAH 01A	.	.	CP- H	RAH 01A
:	AUXILIARY PANEL	AP-1	RAH 07A	.	.	AP-2	RAH 07B
:	MCC 480V	3A312-S	RAH 01A	.	.	3B311-S	RAH 01B
ESSENTIAL:	SEHE ISOL VALVE	2SI-V006A	RAH 3A	.	.	2SI-V005B	RAH 3B
:	MCC 480V	3A313-S	RAH 01A	.	.	3B313-S	RAH 01B
ESSENTIAL:	SEHE ISOL VALVE	2SI-V007A	RAH 3A	.	.	2SI-V006B	RAH 3B
:	RTGDD-CTRL PNL	CP- H	RAH 01A	.	.	CP- H	RAH 01A
:	LCP-REM SD PNL	LCP-43	RAH 01	.	.	LCP-43	RAH 01
:	AUXILIARY PANEL	AP-1	RAH 07A	.	.	AP-2	RAH 07B
:	MCC 480V	3A313-S	RAH 01A	.	.	3B313-S	RAH 01B
ESSENTIAL:	SECS HEAT EXCHGR	3A	RAH 32	.	.	3B	RAH 33
ESSENTIAL:	SECS RX INL TEMP	TF-301Y	RAH 33	.	.	TF-302Y	RAH 33
:	RTGDD-CTRL PNL	CP- H	RAH 01A	.	.	CP- H	RAH 01A
:	CONTROL PANEL	CP-25	RAH 01A	.	.	CP-2C	RAH 01A
:	LOCAL CTRL STATION	LCS	RAH 32	.	.	LCS	RAH 33
ESSENTIAL:	SECS RX INL TEMP	TF-301Y	RAH 32	.	.	TF-302Y	RAH 33
:	RTGDD-CTRL PNL	CP- H	RAH 01A	.	.	CP- H	RAH 01A
:	CONTROL PANEL	CP-25	RAH 01A	.	.	CP-2C	RAH 01A
:	INSTRUMENT PANEL	IP	RAH 3A	.	.	IP	RAH 3B
:	SEP	SEP-5-011	RAH 07A	.	.	SEP-4-011-SF	RAH 07C
ESSENTIAL:	SECS RX OUT TEMP	TF-302Y	RAH 32	.	.	TF-301Y	RAH 33
:	RTGDD-CTRL PNL	CP- H	RAH 01A	.	.	CP- H	RAH 01A
:	CONTROL PANEL	CP-25	RAH 01A	.	.	CP-2C	RAH 01A
:	LOCAL CTRL STATION	LCS	RAH 32	.	.	LCS	RAH 33

EBASCO SERVICES INC.
SAFE SHUTDOWN ANALYSTS: EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
NOT STANDBY TO COLD SHUTDOWN

DATE RECD CTM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF EQUIPMENT NEEDED FOR COLD SAFE SHUTDOWN
FILL: ** DATA REVISED NOV 27 84 * RECD: LICKERFEL 11/27/84 15:17:00

		EQUIPMENT LISTED ABOVE SAFETY TRAILS CATALOG					
		SA	FIRE AREA	SA	FIRE AREA	SB	FIRE AREA
EQUIP TYPE	EQUIPMENT	IDENTITY		IDENTITY		IDENTITY	
SUPPORT:	FCP	FCP-390-SA	RAH 07A	.	.	FCP-391-SL	RAH 07B
	LOCAL COOLER	AF-2-3A-SA	RAH 33	.	.	AF-2-3B-SF	RAH 33
	RTGHD-CNTL PNL	CP-1B	RAH 01A	.	.	CP-1B	RAH 01A
	LOCAL CTL STATION	LCS	RAH 33	.	.	LCS	RAH 33
	AUXILIARY PANEL	AF-1	RAH 07A	.	.	AF-2	RAH 07B
ESSENTIAL:	CONTROL PANEL	CP-41	RAH 01A	.	.	CP-44	RAH 01A
	MCC 480V	3A312-S	RAH 06A	.	.	3A312-S	RAH 06B
	FLOW TO KOS LOOP	FT-304-LOOP1	RAH 34	.	.	FT-30741-LOOP1	RAH 34
	RTGHD-CNTL PNL	CP- R	RAH 01A	.	.	CP- R	RAH 01A
	CONTROL PANEL	CP-30	RAH 01A	.	.	CP-31	RAH 01A
ESSENTIAL:	INSTRUMENT PANEL	C31	RAH 34	.	.	C23	RAH 34
	SUCS FLO CTL VLV	2S1-FM317A	RAH 36	.	.	2S1-FM349B	RAH 36
	RTGHD-CNTL PNL	CP- R	RAH 01A	.	.	CP- R	RAH 01A
	LCP-REM SD PNL	LCP-43	RAH 09	.	.	LCP-43	RAH 09
	AUXILIARY PANEL	AF-1	RAH 07A	.	.	AF-2	RAH 07B
ESSENTIAL:	MCC 480V	3A311-S	RAH 06A	.	.	3A311-S	RAH 06B
	SUCS FLO CTL VLV	2S1-FM317A	RAH 36	.	.	2S1-FM349B	RAH 36
	RTGHD-CNTL PNL	CP- R	RAH 01A	.	.	CP- R	RAH 01A
	LCP-REM SD PNL	LCP-43	RAH 09	.	.	LCP-43	RAH 09
	AUXILIARY PANEL	AF-1	RAH 07A	.	.	AF-2	RAH 07B
	FCP	FCP-390-DC-SA	RAH 06A	.	.	FCP-390-DC-SL	RAH 06B
	BATTERY CHARGER	3A1-S	RAH 06A	.	.	3A1-S	RAH 06B
	MCC 480V	3A311-S	RAH 06A	.	.	3A311-S	RAH 06B
	BATTERY CHARGER	3A2-S	RAH 06A	.	.	3A2-S	RAH 06B
	MCC 480V	3A312-S	RAH 06A	.	.	3A312-S	RAH 06B
	FCP	FCP-390-SA	RAH 07A	.	.	FCP-391-SL	RAH 07B
	SUPS	3A-S	RAH 06A	.	.	3A-S	RAH 06B
	MCC 480V	3A312-S	RAH 06A	.	.	3A312-S	RAH 06B
	MCC 480V	3A312-S	RAH 06A	.	.	3A313-S	RAH 06B
	LPS1 VALVE	2S1-V1549A1	RAH 32	.	.	2S1-V1539B1	RAH 32
ESSENTIAL:	RTGHD-CNTL PNL	CP- R	RAH 01A	.	.	CP- R	RAH 01A
	LCP-REM SD PNL	LCP-43	RAH 09	.	.	LCP-43	RAH 09
	AUXILIARY PANEL	AF-1	RAH 07A	.	.	AF-2	RAH 07B
	MCC 480V	3A311-S	RAH 06A	.	.	3A311-S	RAH 06B
	LPS1 VALVE	2S1-V1549A2	RAH 32	.	.	2S1-V1549B2	RAH 32
ESSENTIAL:	RTGHD-CNTL PNL	CP- R	RAH 01A	.	.	CP- R	RAH 01A
	LCP-REM SD PNL	LCP-43	RAH 09	.	.	LCP-43	RAH 09
	AUXILIARY PANEL	AF-1	RAH 07A	.	.	AF-2	RAH 07B
	MCC 480V	3A311-S	RAH 06A	.	.	3A311-S	RAH 06B
	SIT ISOL VALVE	1S1-V1549A1	RAH 32	.	.	1S1-V1549B1	RAH 32
ESSENTIAL:	RTGHD-CNTL PNL	CP- R	RAH 01A	.	.	CP- R	RAH 01A
	LCP-REM SD PNL	LCP-43	RAH 09	.	.	LCP-43	RAH 09
	AUXILIARY PANEL	AF-1	RAH 07A	.	.	AF-2	RAH 07B
	MCC 480V	3A311-S	RAH 06A	.	.	3A311-S	RAH 06B
	SIT ISOL VALVE	1S1-V1549A1	RAH 32	.	.	1S1-V1549B1	RAH 32

EBASCO SERVICES INC.
SAFT SHUTDOWN ANALYSIS: EQUIPMENT LIST

TABLE 1.5-2
LOUISIANA POWER & LIGHT CO.
NOT STANDBY TO COLD SHUTDOWN

WITH FIRE STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF ESSENTIAL EQUIPMENT LISTED FOR COLD SAFT SHUTDOWN
FILE: ** DATA REVISED NOV 27 64 * REVISION: 11/27/64 15.17.00

EQUIPMENT LISTED ACROSS SAFETY TRAINS DATABASE

EQUIP TYPE	EQUIPMENT	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA	IDENTITY	FIRE AREA
ESSENTIAL:	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08A
:	SIT ISOL VALVE	151-V1507TR2A	RCB	.	.	151-V1507TR2A	RCB
:	RTGHD-CTRL PNL	CF-8	RAB 01A	.	.	CF-8	RAB 01A
:	LCP-FLM SD PNL	LCP-43	RAB 09	.	.	LCP-43	RAB 09
:	AUXILIARY PANEL	AP-1	RAB 07A	.	.	AP-2	RAB 07B
:	POP	POP-391-S	RAB 07A	.	.	POP-391-S	RAB 07B
:	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B
ESSENTIAL:	SIGS ISOL VALVE	151-V1503A	RCB	.	.	151-V1503B	RCB
:	RTGHD-CTRL PNL	CF-8	RAB 01A	.	.	CF-8	RAB 01A
:	LCP-FLM SD PNL	LCP-43	RAB 09	.	.	LCP-43	RAB 09
:	AUXILIARY PANEL	AP-1	RAB 07A	.	.	AP-2	RAB 07B
:	POP	POP-391-DC	RAB 08A	.	.	POP-391-DC-S	RAB 08B
:	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B
ESSENTIAL:	SIGS ISOL VALVE	151-V1504A	RCB	.	.	151-V1504B	RCB
:	RTGHD-CTRL PNL	CF-8	RAB 01A	.	.	CF-8	RAB 01A
:	LCP-FLM SD PNL	LCP-43	RAB 09	.	.	LCP-43	RAB 09
:	AUXILIARY PANEL	AP-1	RAB 07A	.	.	AP-2	RAB 07B
:	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B
ESSENTIAL:	SIGS ISOL VALVE	151-V1507A	RAB 09	.	.	151-V1507B	RAB 09
:	RTGHD-CTRL PNL	CF-8	RAB 01A	.	.	CF-8	RAB 01A
:	LCP-FLM SD PNL	LCP-43	RAB 09	.	.	LCP-43	RAB 09
:	AUXILIARY PANEL	AP-1	RAB 07A	.	.	AP-2	RAB 07B
:	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B
ESSENTIAL:	SIGS ISOL VALVE	151-V1503	RAB 09	.	.	151-V1504	RAB 09
:	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B
ESSENTIAL:	ENT SPRAY ISOL VALV	205-F305A	RCB	.	.	205-F306B	RCB
:	RTGHD-CTRL PNL	CF-8	RAB 01A	.	.	CF-8	RAB 01A
:	AUXILIARY PANEL	AP-1	RAB 07A	.	.	AP-2	RAB 07B
:	POP	POP381-DC-S	RAB 08A	.	.	POP381-DC-S	RAB 08B
ESSENTIAL:	REFUEL WTR VLV	251-L103A	RAB 35	.	.	251-L104B	RAB 35
:	LCP-FLM SD PNL	.	.	.	.	LCP-43	RAB 09
:	RTGHD-CTRL PNL	CF-8	RAB 01A	.	.	.	.
:	LCP-FLM SD PNL	LCP-43	RAB 09	.	.	.	.
:	AUXILIARY PANEL	.	.	.	.	AP-2	RAB 07C
:	AUXILIARY PANEL	AP-1	RAB 07A	.	.	.	.
:	POP	.	.	.	.	POP-391-DC	RAB 07B
:	MCC 480V	3A311-S	RAB 08A	.	.	.	.
ESSENTIAL:	REFUEL WTR VLV	251-L103A	RAB 35	.	.	251-L104B	RAB 35
:	RTGHD-CTRL PNL	CF-8	RAB 01A	.	.	CF-8	RAB 01A
:	LCP-FLM SD PNL	LCP-43	RAB 09	.	.	LCP-43	RAB 09
:	AUXILIARY PANEL	AP-1	RAB 07A	.	.	AP-2	RAB 07B
:	AUXILIARY PANEL	.	.	.	.	.	.
:	POP	.	.	.	.	.	.
:	MCC 480V	3A311-S	RAB 08A	.	.	3A311-S	RAB 08B

TABLE 1.5-2

CLASCO SERVICES INC.
SAFE SHUTDOWN ANALYSIS: EQUIPMENT LIST

LOUISIANA POWER & LIGHT CO.
NOT STANDBY TO COLD SHUTDOWN

WATERFORD STEAM ELECTRIC STATION NO. 3
(OFF-SITE POWER NOT AVAILABLE)

IDENTITY AND LOCATION OF ESSENTIAL EQUIPMENT NEEDED FOR COLD SAFE SHUTDOWN
FILE: ** DATA REVISED NOV 17 84 * EFFORT: URGENT 11/17/84 15:17:00

		EQUIPMENT LISTED ACROSS SAFETY TRAINS SALSALSH					
		SA	FILE	SE	FILE		
EQUIP TYPE	EQUIPMENT	IDENTITY	PIPE AREA	IDENTITY	PIPE AREA	IDENTITY	PIPE AREA
ESSENTIAL:	SDCS FLOW INTR	FT-51130715	RAE 35	.	.	FT-511306DS	RAE 35
:	HIGH-CNTL PRL	CF-8	RAE 01A	.	.	CF-8	RAE 01A
:	LCP-RER SH PRL	LCP-43	RAE 09	.	.	LCP-43	RAE 09
:	CNTL PRL (RAC)	LCP-61	RAE 06A	.	.	LCP-62	RAE 06H

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 ASSOCIATED CIRCUITS ANALYSIS
 IMPACTED SAFE SHUTDOWN COMPONENTS/INDIVIDUAL PLANT AREA FIRES

REF NO./CWD	COMPONENT DESCRIPTION	PROBLEM AREA	HS/CS COMPONENT	DETRIMENTAL EFFECT DUE TO LOSS OF COMPONENT
1/701	CCW Pump "A" to "AB" Discharge Isolation Valve CC 126A	RAB 15	HS/CS	If valve cannot be closed, CCW Pump "A" may overload and trip.
2/1551 1552	EFW Flow Control Valves EFW 224A and EFW 223B	RAB 15 RAB 8B RAB 5	HS	If valve(s) fails open, the possibility exists for overcooling the RCS. If valve fails closed - loss of one of the redundant EFW flow paths.
	EFW Flow Control Valves EFW 224A and EFW 223B	RAB 7B	HS	Valve controls may inadvertently transfer to LCP-43 thereby disabling the M/A stations in the Control Room.
3/852 859 2373	CCW Makeup Pump B and Valve CMU 524B	RAB 15	HS/CS	If valve fails open, water inventory from the CSP will slowly be pumped to a drain.
4/1059	Essential Chilled Water System Recirculation Valve CHW 129B	RAB 15 RAB 2	HS/CS	Valve fails open and can short circuit chilled water directly from the Discharge Header to the Suction Header.
5/1069	Essential Chilled Water System Recirculation Valve CHW 129AB	RAB 15 RAB 23 RAB 2 RAB 8A RAB 6 RAB 17 RAB 8C	HS/CS	Valve fails open and can short circuit chilled water directly from the Discharge Header to the Suction Header.
6/1079 1081	Switchgear Air Handling Unit AH-25 Train "B"	RAB 7A	HS/CS	Loss of cooling to Switchgear Area resulting in elevated temperature.

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 ASSOCIATED CIRCUITS ANALYSIS
 IMPACTED SAFE SHUTDOWN COMPONENTS/INDIVIDUAL PLANT AREA FIRES

REF NO./CWD	COMPONENT DESCRIPTION	PROBLEM AREA	HS/CS COMPONENT	DETRIMENTAL EFFECT DUE TO LOSS OF COMPONENT
7/1551 1552	EFW Flow Control Valves EFW 224B and EFW 223A	RAB 7A	HS	Valve controls may inadvertently transfer to LCP-43 thereby disabling the M/A Stations in the Control Room.
	EFW Flow Control Valves EFW 224B and EFW 223A	RAB 23 RAB 8A RAB 6	HS	If valve(s) fails open, the possibility exists for overcooling the RCS.
8/294	Pressurizer Auxiliary Spray Valve CVC 216A	RAB 7A RAB 6	HS	If valve fails open and both charging line isolation valves are closed, the potential exists for inadvertent spray and RCS depressurization.
9/381	Charging Line Isolation Valve CVC 218A	RAB 7A RAB 6	HS	If valve cannot be closed, the pressurizer auxiliary spray valves may be ineffective because the charging flow will go into the primary loop instead of up into the pressurizer.
10/285 286 287 288 289 290 291 292	Pressurizer Heaters	RAB 7A	HS	Preferred method of pressurizer pressure control unavailable to operators. Charging flow still available for pressure control.
11/851 859	CCW Makeup Pump A and Valve CMU 524A	RAB 23 RAB 16	HS/CS	If valve fails open, water inventory from the CSP will slowly be pumped to a drain.
12/1049	Essential Chilled Water System Recirculation Valve CHW 129A	RAB 23 RAB 2 RAB 8A RAB 6	HS/CS	Valve fails open and can short circuit chilled water directly from the Discharge Header to the Suction Header.

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 ASSOCIATED CIRCUITS ANALYSIS
 IMPACTED SAFE SHUTDOWN COMPONENTS/INDIVIDUAL PLANT AREA FIRES

REF NO./CWD	COMPONENT DESCRIPTION	PROBLEM AREA	HS/CS COMPONENT	DETRIMENTAL EFFECT DUE TO LOSS OF COMPONENT
13/295	Pressurizer Auxiliary Spray Valve CVC 216B	RAB 5 RAB 7B	HS	If valve fails open and both charging line isolation valves are closed, the potential exists for inadvertent spray and RCS depressurization.
14/382	Charging Line Isolation Valve CVC 218B	RAB 5 RAB 7B	HS	If valve cannot be closed, the pressurizer auxiliary spray valves may be ineffective because the charging flow will go into the primary loop instead of up into the pressurizer.
15/541 542	SDCS LPSI Flow Control Valves SI 138B and SI 139B	RAB 32	CS	Ability to regulate shutdown cooling flow rate from Control Room may be lost.
16/518 519	Safety Injection Pumps "B" Mini Flow Isolation Valves SI 120B and SI 121B	RAB 32	CS	If neither valve can be closed, reactor coolant water can be pumped into the RWSP.
17/612	Containment Spray System Isolation Valve CS 125B	RAB 32	CS	Valve fails open. Inadvertent opening of this valve will divert primary water to the Containment Spray Header when in the Shutdown Cooling Mode.
18/592	RCS Loop 1 Shutdown Cooling Isolation Valve SI 407B	RAB 32	CS	Inadvertent closure of valve will stop flow to LPSI Pump.
19/539	SDCS Heat Exchanger "B" Bypass Valve SI 129B	RAB 30 RAB 39 RAB 8C RAB 8A	CS	Loss of capability to regulate amount of shutdown cooling flow passing through Heat Exchanger.
20/558 570	Isolation Valves SIT 1B and SIT 2B Valves SI 331B and SI 332B	RAB 7B RAB 8B RAB 5	CS	If valves cannot be closed or tanks cannot be depressurized, delays will be encountered in reaching the Shutdown Cooling entry window.

7487g

LOUISIANA POWER & LIGHT COMPANY
WATERFORD SES UNIT NO. 3
ASSOCIATED CIRCUITS ANALYSIS
IMPACTED SAFE SHUTDOWN COMPONENTS/INDIVIDUAL PLANT AREA FIRES

<u>REF NO./CWD</u>	<u>COMPONENT DESCRIPTION</u>	<u>PROBLEM AREA</u>	<u>HS/CS COMPONENT</u>	<u>DETRIMENTAL EFFECT DUE TO LOSS OF COMPONENT</u>
21/597	RCS Loop 2 Shutdown Cooling Isolation Valve SI 407A	RAB 8B	CS	Inadvertent closure of valve will stop flow to LPSI Pump.
22/552 564	Isolation Valves SIT 1A and SIT 2A Valves SI 331A and SI 332A	RAB 23 RAB 6 RAB 7A RAB 8A	CS	If valves cannot be closed or tanks cannot be depressurized, delays will be encountered in reaching the Shutdown Cooling entry window.

TABLE 3.2-1
 LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 FAILURE MODES AND EFFECTS ANALYSIS
 ESSENTIAL COMPONENTS (E)
 ISOLATION PANEL FIRE

COMPONENT DESCRIPTION	SPURIOUS ACTUATION	DETRIMENTAL EFFECT ON SAFE SHUTDOWN	MEANS OF OPERATOR IDENTIFICATION	REMARKS
<u>Hot Standby</u>				
Volume Control Tank Discharge Va. 2CH-V123AB (CVC-183)	Closes	None	- Valve position indication	Reactivity Control and RCS Make-up can still be affected from the borated water in the RWSP.
	Opens	May drain VCT	- VCT level indication	
Refueling Water to Charging Pump Suction Va. 3CH-V121AB (CVC 507)	Opens	None	- Valve position indication	RWSP is the preferred source for maintaining Reactivity Control and RCS Make-up. The gravity flow path from BAM tanks is also available post-Isolation Panel Fire.
	Closes	None - Loss of one path of boration	- RWSP level indication	
Charging Pump B	Operates	None	- Charging flow indicator	
	Does not operate	Loss of boration capability and RCS make-up.	- Charging pressure indicator - Pzr. level indicator	
CCW Pump B	Operates	None	- CCW header pressure	A Spurious Signals Analysis shows that no spurious signals can cause a trip of pump.
	Does not operate	Loss of cooling water to the safe shutdown components.	- CCW header flow indicator - Various temp. indicators	
Chiller Compressor B	Operates	None	- Chilled water temperature, pressure and flow indicators.	
	Does not operate	Loss of cooling water supply air handling units; gradual rise in space temperature containing safety-related equipment.		

TABLE 3.2-1 (Cont'd)

COMPONENT DESCRIPTION	SPURIOUS ACTUATION	DETRIMENTAL EFFECT ON SAFE SHUTDOWN	MEANS OF OPERATOR IDENTIFICATION	REMARKS
STA. Service Transformer 3B32 Feeder (Power to Pzr. Proportional Heaters Bank No.2)	Breaker closes Breaker opens	None Loss of preferred method of RCS pressure control.	- Pzr. pressure indication - Breaker position indica- tion - Heaters amps indicators - Pzr. temperature indica- tor	Time for corrective ac- tion is not critical. Charging system can be used for emergency RCS pressure control.
Chilled Water Pump B (3B-SB)	Operate Does not operate	None N/A	N/A	A Spurious Signals Analysis shows that fire in isolation panel has no effect on chilled water pump.
<u>Cold Shutdown</u>				
SI Tank Isolation Valves (4-one on each tank)	Closes	None		
1SI-V1505RTK1A (SI-331A) 1SI-V1506TK1B (SI-331B) 1SI-V1507TK2A (SI-332A) 1SI-V1508TK2B (SI-332B)	Won't close upon demand	- Possible release of SI tank con- tents into RCS (extra boration) - Pressure in SI tank may be "trans- mitted" to primary system. Primary system may be maintained at ap- prox. 600 psig. Shutdown cooling pressure interlocks would then prevent shutdown cooling suc- tion Isolation Valves from opening.	- Valve position indication - SI tank pressure indication - Pzr. pressure indication	Valves can be manually operated with existing handwheel.

TABLE 3.2-1 (Cont'd)

COMPONENT DESCRIPTION	SPURIOUS ACTUATION	DETRIMENTAL EFFECT ON SAFE SHUTDOWN	MEANS OF OPERATOR IDENTIFICATION	REMARKS
RCS Loop 1 Shutdown Cooling Isol. Valve 1SI-V1502B (SI-401B)	Will not open upon demand	Shutdown Cooling flow - Valve position indication from RCS Loop 1 to LPSI Pump B not established.		
	Opens when not required	N/A - (See Remarks)		Power is racked out to valve 1SI-V1502B. No credible spurious signal can cause inadvertent operation. See Table 8.3-2.
RCS Loop 1 Shutdown Cooling Isol. Valve 1SI-V1501B (SI-405B)	Will not open upon demand	Shutdown Cooling flow - Valve position indication from RCS Loop 1 to LPSI Pump B not established.		
	Opens when not required.	None		RCS Isolation Valve 1SI-V1502B maintains primary system integrity.

TABLE 3.2-2

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 FAILURE MODES AND EFFECTS ANALYSIS
 NON-ESSENTIAL COMPONENTS (NE*)
 ISOLATION PANEL FIRE

COMPONENT DESCRIPTION	SPURIOUS ACTUATION	DETRIMENTAL EFFECT ON SAFE SHUTDOWN	MEANS OF OPERATOR IDENTIFICATION	REMARKS
<u>Hot Standby</u>				
Letdown Stop Valve 1CH-F1516A/B (CVC 101)	Closes	None	- Valve position indication	
	Opens	Loss of primary system inventory	- Letdown line flow indicator by turning control	
Boric Acid Makeup Pumps A & B	Does not operate	None	- Pumps status indication	Isol. Panel fire shutdown mode is with flow path from RWSP to charging pump suction valves.
	Operates	Possible unregulated boric acid injection		
Charging Pump A	Does not operate	None	- Pzr. level indicator	Charging Pump B provides reactivity control and RCS make-up.
	Operates	Increase rate of RCS make-up.	- Charging flow indicator	
Charging Pump AB	Does not operate	N/A	N/A	Charging Pump B provides reactivity control and RCS make-up. The power bus SAB is de-energized rendering charging Pump AB inoperable.
	Operates			
Boric Acid Make-up Control Va. 3CH-FM172AB (BAM 141)	Opens	None	- Valve position indication	Boric acid pumps to be secured.
	Closes	None	- Concentrated boric acid flow indicator	

TABLE 3.2-2 (Cont'd)

COMPONENT DESCRIPTION	SPURIOUS ACTUATION	DETRIMENTAL EFFECT ON SAFE SHUTDOWN	MEANS OF OPERATOR IDENTIFICATION	REMARKS
Reactor Water Make-up Control Va. 7CH-F115 (PMU 144)	Opens Closes	None None	- Valve position indication - Primary make-up flow indication	Volume Control Tank isolated (discharge valve closed) from charging pump suction header. Isolation Panel Fire shutdown mode is with the RWSP flow path directly to charging pump suction.
Reactor Water Make-up Stop VA. 3CH-F117AB (CVC 510)	Opens Closes	None None	- Valve position indication - Primary make-up flow indication	Volume Control Tank isolated (discharge valve closed) from charging pump suction header. Isolation Panel Fire Shutdown mode is with the RWSP flow path directly to charging pump suction.
HPSI Pump A HPSI Pump B HPSI Pump A/B	Does not operate Operates	None None - Charging system is preferred means of reactivity control and RCS make-up.	- Pump status lights - HPSI header pressure	The power bus 5AB is de-energized rendering HPSI pump AB inoperable.
CCW Pump Header Isol. Valves 3CC-F109AB (CC-126A) 3CC-F113AB (CC-114A) 3CC-F110AB (CC-127A) 3CC-F114AB (CC-115A) 3CC-F111AB (CC-127B) 3CC-F115AB (CC-115B) 3CC-F112AB (CC-126B) 3CC-F116AB (CC-114B)	Opens Closes	2 Pumps Operating: no detrimental effect 1 Pump Operating: A&B headers of system interconnected single pump approaches runout condition None	- Valve position indication - Valve position indication	CCW Pump B will supply sufficient cooling water to the components required for safe shutdown.

TABLE 3.2-2 (Cont'd)

COMPONENT DESCRIPTION	SPURIOUS ACTUATION	DETRIMENTAL EFFECT ON SAFE SHUTDOWN	MEANS OF OPERATOR IDENTIFICATION	REMARKS
CCW Pump A	Operates	None	- Pump status lights	
	Does not operate	Insufficient flow of cooling water if header valves are open		CCW Pump B will supply sufficient cooling water to the "B" components required for safe shutdown.
CCW Pump AB	Operates	N/A	- Pump status lights	
	Does not operate	N/A		The power bus SAB is de-energized rendering CCW Pump AB inoperable.
Chiller Compressor A WC-1 (3A-SA)	Operates	None	- Compressor status lights	
	Does not operate	None		The redundant chiller compressor B will provide adequate area cooling for "B" train safe shutdown equipment.
Chiller Compressor AB WC-1 (3C-SAB)	Operates	N/A	- Compressor status lights	
	Does not operate	N/A		Chiller compressor B will provide adequate area cooling for "B" train safe shutdown equipment. The power SAB is de-energized rendering Chiller AB inoperable.
Chilled Water Pump A P-1 (3A-SA)	Operates	N/A	N/A	
	Does not operate	N/A	N/A	Fire in isolation panel will have no effect on operability of chilled water pump.
Chilled Water Pump AB P-1 (3C-SAB)	Operates	N/A	N/A	
	Does not operate	N/A	N/A	The power bus SAB is de-energized rendering Chilled Water Pump AB inoperable.

TABLE 3.2-2 (Cont'd)

COMPONENT DESCRIPTION	SPURIOUS ACTUATION	DETRIMENTAL EFFECT ON SAFE SHUTDOWN	MEANS OF OPERATOR IDENTIFICATION	REMARKS
Chiller Water System Header Isolation Valves	Closes	None	- Valve status lights	Spurious actuation can only close valves, which is preferred position
3AC-F142A	Does not close	Should Chilled		
3AC-F149A		Water System A		
3AC-F144A		fail to operate and		
3AC-F136A		the header isolation		
3AC-F143B		valves do not isolate		
3AC-F150B		system performance		
3AC-F135B		will degrade.		
3AC-F151B				
Stat. Service Transformer 3A32	Breaker closes	None	- Breaker status lights	Pzr. Proportional Heater
Feeder (Power to Pzr. Proportional Heater Bank No. 1)	Breaker opens	None		Bank No. 2 available to control RCS pressure following a fire condition in the Isolation Panel.
<u>Cold Shutdown</u>				
RCS Loop 2 SDCS Isolation Valve	Will not open upon demand	None	- Valve position indication	RCS Loop 1 SDCS/LPSI B can bring plant to Cold Shutdown.
ISI-1504A (SI-401A)	Opens when not required	None		Power is racked out to valve ISI-V1504A. No credible spurious signal can cause inadvertent operation.
RCS Loop 2 SDCS Isolation Valve	Will not open	None	- Valve position indication	RCS Loop 1 SDCS/LPSI B can bring plant to Cold Shutdown.
ISI-1503A (SI-405A)	Opens when not required	None		RCS Isolation Valve ISI-V1504A maintains primary system integrity.
<u>MISCELLANEOUS</u>				
Control Room Air Handling Unit AH-12 (3B-SB)	Operates	None	- Control Rm. Temperature indicator	
	Does not operate	Gradual temperature rise inside control room.	- AH-12 status indication - Human senses (operator discomfort)	

TABLE 3.3-1

LOUISIANA POWER & LIGHT COMPANY

WATERFORD SES UNIT NO. 3

BALANCE OF COMPONENTS INTERFACING WITH ISOLATION PANEL

Equipment is not directly related to the plant shutdown process. Failure of this equipment to operate properly will have no implication on the overall safe shutdown of the plant.

<u>CWD No.</u>	<u>Component Description</u>
908	Toxic Chemicals Detection System
990	Instrument Air Compressor A
992	Instrument Air Compressor B
1005	Safeguard Pump Room A Cooler AH-2 (3A-SA) CVAS
1006	Safeguard Pump Room A Cooler AH-2 (3C-SA) CVAS
1077	SWGR Area AH-25 (3A-SA) Vent Dampers
1081	SWGR Area AH-25 (3B-SB) Vent Dampers
1094	Computer Room Air Handling Unit AH-31
1097	Annulus Negative Pressure System Exhaust Fan E-19
1099	Annulus Negative Pressure System Dampers
1105	RAB Normal Exhaust Fan - E22 (3A)
1107	RAB Normal Exhaust Fan - E22 (3B)
1109	RAB Normal Exhaust System Dampers
1110	CVAS Isolation Valves
1111	CVAS Isolation Valves
1113	CVAS Exhaust Fan E-23 (3A-SA)
1114	CVAS Exhaust Fan E-23 (3B-SB)
1123	RAB HVAC Equipment Room Heating Coil EHC-55 (3A)
1124	RAB HVAC Equipment Room Heating Coil EHC-55 (3B)
1127	Containment Purge System Dampers
1128	Containment Purge Isolation Valves
1129	Containment Purge Isolation Valves
1139	CEDM Cooling Unit E-16 (3A)
1140	CEDM Cooling Unit E-16 (3C)

TABLE 3.3-1 (Cont'd)

CWD No.	Component Description
1141	CEDM Cooling Unit E-16 (3B)
1142	CEDM Cooling Unit E-16 (3D)
1145	CEDM Cooling Units Inlet Valves
1160	Control Room Exhaust Fan E-34 (3A-SA)
1161	Control Room Exhaust Fan E-34 (3B-SB)
1163	Control Room Exhaust Fan E-42
1164	Control Room Exhaust Fan E-42 Discharge Dampers
1165	Control Room Air Handling Units AH-12 (3A-SA)
1228	FHB Vent System Air Handling Unit AH-14
1230	FHB Vent System Exhaust Fan E-20 (3A)
1231	FHB Vent System Exhaust Fan E-20 (3B)
1234	FHB Vent System Emergency Filtration Unit E-35 (3A-SA)
1236	FHB Vent System Emergency Filtration Unit E-35 (3B-SB)
1248	Cable Vault Area Exhaust Fan E-49
1510	SG No. 1 Feedwater Isolation Valve 2FW-V823A
1526	SG No. 2 Feedwater Isolation Valve 2FW-V824B
1530	Condensate Storage Pool Make-Up Va. 6CD-1393
1646	Steam Line No. 1 Isolation Valve 2MS-V602A
1661	Steam Line No. 2 Isolation Valve 2MS-V604B
1663	Control Room Exhaust Fan E-42
2685	FHB Isolation "A" Airborne Radiation Monitor
2688	FHB Isolation "B" Airborne Radiation Monitor

TABLE 4.4-1

Page 1 of 8

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 REQUIRED MODIFICATIONS/ASSOCIATED CIRCUITS ANALYSIS
 CONTROL ROOM/CABLE VAULT FIRE ONLY

REF NO/CWD	COMPONENT DESCRIPTION	HS/CS COMPONENT	DETRIMENTAL EFFECT ON SAFE SHUTDOWN DUE TO LOSS OF COMPONENT	REMARKS
1/1042	DG "B" Room Vent System Dampers	HS	DG "B" Room space temperature could gradually rise above equipment qualification temperature.	
2/1043	DG "B" Room Exh. Fan E-28 (3B-SB)	HS	DG "B" Room space temperature could gradually rise above equipment qualification temperature.	
3/1055	Water Chiller "B" Compressor WC-1 (3B-SB)	HS	Loss of cooling water supply to air handling units; gradual rise in space temperature containing safety-related equipment	Component is already protected from the effects of fire-induced electrical faults
4/1058	Water Chiller "B" Recirc. Pump P-1 (3B SB)	HS	Loss of cooling water supply to air handling units; gradual rise in space temperature containing safety-related equipment	Component is already protected from the effects of fire-induced electrical faults
5/1079	SWGR Area "B" Air Handling Unit AH-25 (3B-SB)	HS	Gradual temperature rise in SWGR Area "B"	- See Ref. No. 16 Component already protected from the effects of fire-induced electrical faults
6/1541	Emergency Feedwater Pump Turbine Governor Valve	HS	None - EFW "B" pump will provide adequate Emergency Feedwater.	Enhancement - provides operational flexibility
7/518 /519	SI Pump "B" Miniflow Isol. Valve 2SI-V801B & 2SI-V802B	CS	Loss of LPSI pump recirculation flow. LPSI pumps cannot be guaranteed to be available for Shutdown Cooling.	Valves provided w/handwheel - can be manually operated
8/1008	Safeguards pump Room "B" Local Cooler AH-2 (3D-SB)	HS	Gradual temperature rise in Safeguard Pump Room "B" LPSI pump may be subject to space temperature higher than EQ temperature.	
9/1015	CCW Hx "B" Local Cooler AH-24 (3B-SB), Temperature Control Valve 3AC-TM643B	CS	Gradual temperature rise in CCW Hx "B" Room.	
10/1018	Shutdown Cooling Hx B Local Cooler AH-3 (3B-SB) and Temp. Control Va. 3AC-TM617B	CS	Gradual temperature rise in Shutdown Cooling Hx B Room.	
11/1059	Chilled Water Sys. "B" Recirc. Valve 3AC-FM130B	HS	Chilled Water System could short circuit - possible degradation of cooling water supply to air handling units.	
12/1122	RAB H&V Equipment Room Exh. Fan E-41 (3B-SB) and Dampers & Heaters	HS	Gradual temperature rise in RAB H&V Room.	

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 REQUIRED MODIFICATIONS/ASSOCIATED CIRCUITS ANALYSIS
 CONTROL ROOM/CABLE VAULT FIRE ONLY

REF NO/CWD	COMPONENT DESCRIPTION	HS/CS COMPONENT	DETRIMENTAL EFFECT ON SAFE SHUTDOWN DUE TO LOSS OF COMPONENT	REMARKS
13/1081 1080 2912	Swgr Area "B" Air Handling Unit AH-25 (3B-SB) Dampers, and Temp. Cont. Va. 3AC - TML89B	HS	Gradual temperature rise in SWGR Area "B" Room.	See Ref. No. 5
14/2334	4KV Bus Tie 3A3S - 3AB3S Breaker	HS	Ensures de-energization of the "AB" power train. Prevents "AB" powered components from spuriously actuating.	
15/2477	480V Bus Tie 3A31S - 3AB31S Breaker	HS	Ensures de-energization of the "AB" power train. Prevents "AB" powered components from spuriously actuating	
16/2374	Diesel Generator "B" Emergency Stop	HS	Potential to trip DG "B".	Component is already protected from the effects of fire-induced electrical faults
17/2391	Diesel Generator "B" Sequencer Test & Display	HS	Erratic sequencing of loads on DG "B".	Component is already protected from the effects of fire-induced electrical faults
18/2388	4KV Safety Bus "B" Undervoltage Test	HS	Potential trip of "B" safety components.	Component is already protected from the effects of fire-induced electrical faults
19/2390	480V Safety Bus "B" Undervoltage Test	HS	Potential trip of "B" safety components.	Component is already protected from the effects of fire-induced electrical faults
20/2377	Diesel Generator "B" Breaker	HS	Loss of onsite "B" power supply	Component is already protected from the effects of fire-induced electrical faults
21/2382	4KV Bus Tie 3B3S-3B2 Breaker	HS	Potential to overload DG "B".	Component is already protected from the effects of fire-induced electrical faults
22/2399	Sta Service Transformer 3B315S Feeder Breaker	HS	Loss of Wet & Dry Cooling Tower "B".	Component is already protected from the effects of fire-induced electrical faults
23/2397	Sta Service Transformer 3B31S Feeder Breaker	HS	Loss of 480V "B" train components.	Component is already protected from the effects of fire-induced electrical faults

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 REQUIRED MODIFICATIONS/ASSOCIATED CIRCUITS ANALYSIS
 CONTROL ROOM/CABLE VAULT FIRE ONLY

REF NO/CWD	COMPONENT DESCRIPTION	HS/CS COMPONENT	DETRIMENTAL EFFECT ON SAFE SHUTDOWN DUE TO LOSS OF COMPONENT	REMARKS
24/2398	Sta Service Transformer 3B32S Feeder Breaker (Power to Pzr. Proportional Heater Bank No. 2)	HS	Loss of one method of RCS Pressure Control.	Component is already protected from the effects of fire- induced electrical faults
25/2384	4KV Bus Tie 3B3S-3AB3S	HS	Ensures de-energization of the "AB" power train. Prevents "AB" powered components from spuriously actuating.	
26/2502	480V Bus Tie 3B31S-3AB31S	HS	Ensures de-energization of the "AB" power train. Prevents "AB" powered components from spuriously actuating.	
27/2534	Computer Secondary Feeder	HS	Ensures de-energization of the "AB" power train. Prevents "AB" powered components from spuriously actuating.	
28/2409 2411	4KV and 480V Safety Bus "AB" Undervoltage Test	HS	Ensures de-energization of the "AB" power train. Prevents "AB" powered components from spuriously actuating.	
29/2332	4KV Bus Tie 3A3S-3A2	HS	Ensures de-energization of the "A" power train. Prevents "A" powered components from spuriously actuating.	
30/2367	Diesel Generator "B" Voltage Indicator	HS	Loss of DG "B" monitoring instrumentation. Potential to impact DG "B" operation.	Component is already protected from the effects of fire- induced electrical faults
31/2367	4KV Bus 3B3S Voltage Indicator	HS	Loss of DG "B" monitoring instrumentation. Potential to impact DG "B" operation.	
32/2376	Diesel Generator "B" Day Tank Oil Level	HS	None - Alternative alarm available.	Local indicator is not available. However local alarm (located in DG Room) remains available.
33/1551	Steam Generator No. 1 Level (Wide Range)	HS	Loss of Reactor Heat Removal monitoring instrumentation.	
34/1552	Steam Generator No. 2 EFW Control Valve 2FW-V853A	HS	Loss of one of two EFW flow paths to SG 2 or valve goes full open with potential for overcooling RCS.	
35/1552	Steam Generator No. 2 Level (Wide Range)	HS	Loss of Reactor Heat Removal monitoring instrumentation.	

TABLE 4.4-1

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 REQUIRED MODIFICATIONS/ASSOCIATED CIRCUITS ANALYSIS
 CONTROL ROOM/CABLE VAULT FIRE ONLY

Page 4 of 8

REF NO/CWD	COMPONENT DESCRIPTION	HS/CS COMPONENT	DETRIMENTAL EFFECT ON SAFE SHUTDOWN DUE TO LOSS OF COMPONENT	REMARKS
36/278	Steam Generator No. 1 Pressure	HS	Loss of Reactor Heat Removal monitoring instrumentation.	Component cables routed independent of CR/CV. Additional Circuit Modifications necessary to ensure long-term power supply to indicator.
37/278	RCS Hot Leg 1 Pressure Indicator	HS	Loss of RCS monitoring instrumentation.	Component cables routed independent of CR/CV. Additional Circuit Modifications necessary to ensure long-term power supply to indicator.
38/594	RCS/SDCS Isolation Valve ISI-V1501B Hyd Pump Motor	CS	Loss of Shutdown Cooling flow path.	See Ref. No. 56 Component cables routed independent of CR/CV.
39/1137	Containment Fan Coolers Sys Valves 2CC-F157B2, 2CC-F161B2, 2CC-F156B1, 2CC-F160B1, 3CC-TM149B	CS	Containment temperature and pressure could rise above Tech Spec limits.	
40/537	Shutdown Flow Control Valve 2SI-FM348B	CS	Loss of Shutdown Cooling flow path.	Existing Transfer Switch will isolate component from the effects of CR/CV fire.
41/802	Aux Component Cooling Water Pump B	HS	Loss of Wet Cooling Tower B.	
42/852	Component Cooling Water Makeup Pump B	HS	Decreases amount of condensate available to EFW system.	Equipment not req'd for safe shutdown, however, to preclude detrimental effects, corrective action should be taken
43/591	SDCS Isolation Valve ISI-V1501B (Interlock with Pzr. Pressure)	CS	Loss of Shutdown Cooling flow path.	See Ref. No. 47
44/590	SDCS Isolation Valve ISI-V1502B	CS	Loss of Shutdown Cooling flow path.	

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 REQUIRED MODIFICATIONS/ASSOCIATED CIRCUITS ANALYSIS
 CONTROL ROOM/CABLE VAULT FIRE ONLY

REF NO/CWD	COMPONENT DESCRIPTION	HS/CS COMPONENT	DETRIMENTAL EFFECT ON SAFE SHUTDOWN DUE TO LOSS OF COMPONENT	REMARKS
45/375	Charging Pump B	HS	Loss of RCS Reactivity & Pressure Control.	Component is already protected from the effects of fire-induced electrical faults.
46/360	RWSP Charging Pump Suction Valve 3CH-V121AB	HS	Loss of preferred borated water flow path. Gravity feed from Boric Acid Make-up Tanks available.	
47/288 289 290	Pressurizer Backup Heater Bank No. 4, No. 5, No. 6	HS	Degradation of RCS Pressure Control.	
48/357	RCS Makeup Water Stop Valve 3CH-F117AB	HS	Decrease in boron concentration of charging flow if Vol. Cont. not isolated.	
49/380	Charging Pumps Headers Shutoff Valve 2CH-F1529AB	HS	Loss of charging flow to RCS.	
50/499	S.I. Recirc. Return Line Drain to Reactor Drain Tank Valve 5SI-F1563	CS	Loss of Shutdown cooling flow via any of four drain lines.	
51/1537	EFW Turbine Steam Line Drip Pot Drain Va. SMS-V716	HS	Partial loss of steam from SG 2.	Leakage would be minimal.
52/2246	Standby Transformer 3A Bus 3A1 Feeder Breaker	HS	RCS natural circulation cooldown cannot be assured. Prevents equipment powered from the Non-safety 6.9 KV Bus from spuriously actuating.	Post CRICV fire, the 6.9 KV Bus 3A1 will be de-energized disabling the following equipment: Reactor Coolant Pump 1A Reactor Coolant Pump 2A Condensate Pump A Condensate Pump C Circulating Water Pump A Circulating Water Pump C
53/2256	Standby Transformer 3B to Bus 3B1 Feeder Breaker	HS	RCS natural circulation cooldown cannot be assured. Prevents equipment powered from the Non-safety 6.9 KV Bus from spuriously actuating.	Post CRICV fire, the 6.9 KV Bus 3B1 will be de-energized disabling the following equipment: Reactor Coolant Pump 1B Reactor Coolant Pump 2B Condensate Pump B Circulating Water Pump B Circulating Water Pump D

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 REQUIRED MODIFICATIONS/ASSOCIATED CIRCUITS ANALYSIS
 CONTROL ROOM/CABLE VAULT FIRE ONLY

REF NO/CWD	COMPONENT DESCRIPTION	HS/CS COMPONENT	DETRIMENTAL EFFECT ON SAFE SHUTDOWN DUE TO LOSS OF COMPONENT	REMARKS
54/929	Steam Line 2 Sampling Isolation Va. 2MS-F715	HS	Partial loss of steam from SG 2.	Leakage would be minimal.
55/934	RCS Vent to Quench Tank Valve 2RC-E-2562B	HS/CS	Partial loss of RCS inventory.	
56/1538	EFW Turbine Steam Line Emergency Drain Valve 3MS-V685	HS	Partial loss of steam from SG 2.	Leakage would be minimal.
57/1645	Steam Line 1 Alternate Drain Va. 2MS-V671	HS	Partial loss of steam from SG 1.	Leakage would be minimal.
58/1646 1647	Steam Line 1 Isolation Valve 2MS-V602A			
59/1660	Steam Line 2 Alternate Drain Va. 2MS-V664	HS	Partial loss of steam from SG 2.	Leakage would be minimal.
60/1661 1662	Steam Line 2 Isolation Valve 2MS-V604B	HS	Loss of secondary side heat sink.	
61/703	CCW Pump B Header Isolation Valves 3CC-F111AB and 3CC-F115AB	HS/CS	Loss of CCWS B train due to unpredictable operation of CCW Pump B.	
62/799	Dry Tower B Isolation Valve 3CC-B203B	HS/CS	Loss of DCT B.	
63/799	Dry Tower B Bypass Valve 3CC-B262B	HS/CS	Loss of DCT B due to flow bypass.	
64/826 827 828	Chiller Coolant Selective Valves System B 3CC-F273B, 3CC-F275B 3CC-F277B, 3CC-F279B	HS/CS	Valve opening will result in loss of CCWS inventory to ACCWS. Loss of chiller cooling water with resulting increase in ambient temperatures.	
65/922	S.G. No. 1 Sampling Isolation Valve 2SL-F602		Partial loss of inventory from SG 1.	Leakage would be minimal.

TABLE 4.4-1

Page 7 of 8

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 REQUIRED MODIFICATIONS/ASSOCIATED CIRCUITS ANALYSIS
 CONTROL ROOM/CABLE VAULT FIRE ONLY

REF NO/CWD	COMPONENT DESCRIPTION	HS/CS COMPONENT	DETRIMENTAL EFFECT ON SAFE SHUTDOWN DUE TO LOSS OF COMPONENT	REMARKS
66/923	S.G. No. 2 Sampling Isolation Valve 2SL-F604		Partial loss of inventory from SG 2.	Leakage would be minimal.
67/929	Steam Line 1 Sampling Isolation Va. 2MS-F714	HS	Partial loss of steam from SG1.	Leakage would be minimal.
68/607	Containment Spray Isolation Valve 2CS-F306B	HS	None - Potential for inadvertent spray of containment.	
69/610	Containment Spray Pump B	HS/CS	None - Potential for inadvertent spray of containment. Loss of shutdown cooling flow in cold shutdown.	
70/2318 2319	Diesel Gen. A Control Power	HS	Spurious start of DG "A".	
71/1167	Control Room Air Handling Unit AH-12 (3B-SB)	HS/CS	Increase in Control Room temperature resulting from fire could overheat chilled water system.	
72/	Back-up Emergency Feedwater to Steam Generator No. 1 Control Valve 2FW-V852A	HS	Valve goes full open. Potential for overcooling the RCS.	
73/	Condensate Storage Pool Level Indicator LI-CD9013A1S	HS	Loss of CSP long-term level indication.	
74/	Emergency Feedwater to Steam Generator No. 1 Flow Indicator FI-FW8330A1S	HS	Loss of long-term EFW flow indication to SG No. 1.	
75/1074	Chilled Water System Isolation Valves 3AC-F135B, 3AC-F143B 3AC-F150B, 3AC-F151B	HS	Degradation of Chilled Water System B train.	
76/716	CCW Heat Exchanger "B" Temp. Cont Va. 3CC-TM291B	HS/CS	Loss of ACCW/WCT, B train.	Power to Cabinet CP-49 is cut off. thus temp. cont. valve 3CC-TM291B will assume open position.

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 REQUIRED MODIFICATIONS/ASSOCIATED CIRCUITS ANALYSIS
 CONTROL ROOM/CABLE VAULT FIRE ONLY

REF NO/CWD	COMPONENT DESCRIPTION	HS/CS COMPONENT	DETRIMENTAL EFFECT ON SAFE SHUTDOWN DUE TO LOSS OF COMPONENT	REMARKS
77/552	SI Tank 1A Disch. Va. 1SI-V1505TK1A	CS	Discharge of one or more SITs into RCS.	SIT valves can be manually closed.
558	SI Tank 1B Disch. Va. 1SI-V1506TK1B			
564	SI Tank 2A Disch. Va. 1SI-V1507TK2A			
570	SI Tank 2B Disch. Va. 1SI-V1508TK2B			
78/819	Wet Tower Cross Tie Va. 3CC-F284A and 3CC-F285B	CS	Loss of safety-related water supply in Wet Cooling Tower A basin to backup Wet Cooling Tower B basin.	Valves can be manually operated and would only be required during periods of extended HS operation.
79/1546	SG #1 Primary EFW Isolation Va. 2FW-V848A	HS	Loss of one of two EFW flow paths to SG1.	Utilize Redundant Parallel Flow Path.
80/1548	SG #2 Backup EFW Isolation Va. 2FW-V849A	HS	Loss of one of two EFW flow paths to SG2.	Use Redundant Parallel Path

TABLE 4.4-2

LOUISIANA POWER & LIGHT COMPANY
WATERFORD SES UNIT NO. 3
FAILURE MODES AND EFFECTS ANALYSIS
ESSENTIAL COMPONENTS (E)
ISOLATION PANEL FIRE

SAFE SHUTDOWN
COMPONENTS AVAILABLE - POST CR/CV FIRE

<u>REF/CWD</u>	<u>COMPONENT DESCRIPTION</u>	<u>REMARKS</u>
1/382	RCS LEG 2A Chrg. Shutoff Vlv 1CH-E2504B	1
2/295	Pzr Aux Spray Vlv 1CH-E2505B	1
3/292	Pzr Proport. HTR's Bank-2	1
4/585	Shtdn Line Warm-Up Vlv 2SI-V346B	1
5/592	Shtdn Loop 1 Suct Isol Vlv 2SI-V326	1
6/535	LPSI Pump B	1
7/520	LPSI Pump B Miniflow Vlv 2SI-E1588E	1
8/586	Shtdn HT. Ex. B Isol Vlv 2SI-V305B	1
9/587	Shtdn HT. Ex. B Isol Vlv 2SI-V308B	1
10/538	Shtdn Temp Contr Vlv 2SI-FM349B	1
11/541	Shtdn to Leg 1A Flow Contr Vlv 2SI-V1549A1	1
12/542	Shtdn to Leg 1B Flow Contr Vlv 2SI-V1539B1	1
13/301	Letdwn Cont Isol Vlv 1CH-F2501AB	1
14/327	Volume Contr Tnk Disch Vlv 2CH-V123A	1
15/337	Boric Acid Tnk A Gravity Feed Vlv 3CHV106A	1
16/342	Boric Acid Tnk B Gravity Feed Vlv 3CH-V107B	1
17/917	Sampling Line Isol Vlv 2SI-F623B	1
18/918	Sampling Line Isol Vlv 2SI-F1569B	2
19/859	D.G.B Stand Pipe Level Control Valve 3CC-E641B	2
20/1002	Charg. Pump B Cooler AH-18 (3B-SB)	3
21/1014	CCW Pump B Cooler AH-10 (3B-SB)	3
22/1021	EFW Pump B Cooler AH-17 (3B-SB)	3
23/1137	Cont Fan Cooler D CCW Inlet Vlv 2CC-F156B1	3
24/1137	Cont Fan Cooler D CCW Outlet Vlv 2CC-F160B1	3
25/1551	Stm Gen 1 Emerg FW Primary Contr Vlv 2FW-V851B	1
26/1547	Stm Gen #1 Emerg FW Back-Up Isol Vlv 2FW-V847B	1
27/1549	Stm Gen #2 Emerg FW Primary Isol Vlv 2FW-V850B	1
28/1533	Emerg FW Pump B	1

TABLE 4.4-2 (Cont'd)

<u>REF/CWD</u>	<u>COMPONENT DESCRIPTION</u>	<u>REMARKS</u>
29/1536	Emerg FW Pump AB SG2 Stm Shut-Off Vlv 2MS-V612B	1
30/709	CCW Pump B	1
31/848	Shtdn HT Ex B CCW Outlet Vlv 3CC-F131B	1
32/781-795	Dry Tower B Fan 1 - 15	1
33/811-818	Wet Tower B Fan 1 - 8	1
34/1135	Cont Cooler B	1
35/1136	Cont Cooler D	1
36/2359	D.G.B Fuel Oil Transf Pump	3
37/2091	Class 1E N ₂ Back-Up Vlv 3NG-E671-2	2
38/2093	Class 1E N ₂ Back-Up Vlv 3NG-E671-4	2
39/2095	Class 1E N ₂ Back-Up Vlv 3NG-E671-6	2
40/2097	Class 1E N ₂ Back-Up Vlv 3NG-E671-8	2

- Notes: (1) Component's control circuitry will be isolated from the CR/CV fire after affecting the appropriate transfer switch
- (2) Component's control circuitry located outside the Control Room fire zone
- (3) The Control Room/Cable Vault fire has no effect on the component's control circuitry

ATTACHMENT A-1

CLIENT LOUISIANA POWER & LIGHT COMPANY EBASCO SERVICES INCORPORATED
 PROJECT WATERFORD SES UNIT NO. 3
 SUBJECT SPURIOUS SIGNAL GENERATION ANALYSIS
 SYSTEM MAIN STEAM SYSTEM NUMBER 78

AFFECTED EQUIPMENT	EQUIPMENT REQUIRED FOR		SPURIOUS SIGNAL ACTION	DETRIMENTAL EFFECT ON SYSTEM/ PLANT'S ABILITY TO SHUTDOWN	EQUIPMENT REQUIRED TO MITIGATE SPURIOUS ACTION	SUPPORTING SYSTEMS
	HOT STANDBY	COLD STANDBY				
2MS-FM630B (MS116B)	Yes	No	Operates	None		
			Does not operate (opens, closes)	Loss of heat removal capability via S.6.2	2MS-FM629A EFW Pump A EFW Pump B 2FW-V849A 2FW-V853A	DG A&B (SSA 02) CCWS A&B (SSA 04) ACCWS A&B (SSA 0402) CWS A&B (SSA 0403)
					or	Remaining EFW stop and control valves either fail open or remain opera- tional
					2MS FM629A EFW Pump A/B 2MS V611A 2FW V849A 2FW V853A EFW T&T Valve EFW Gov Valve	DG A (SSA 02) CCWS A (SSA 04) ACCWS A (SSA 0402) CWS A (SSA 0403) Nitrogen Ditto

ATTACHMENT A-1

EBASCO SERVICES INCORPORATED

CLIENT LOUISIANA POWER & LIGHT COMPANY
PROJECT WATERFORD SES UNIT NO. 3
SUBJECT SPURIOUS SIGNAL GENERATION ANALYSIS

SYSTEM Main Steam SYSTEM NUMBER 78

AFFECTED EQUIPMENT	EQUIPMENT REQUIRED FOR		SPURIOUS SIGNAL ACTION	DETRIMENTAL EFFECT ON SYSTEM/ PLANT'S ABILITY TO SHUTDOWN	EQUIPMENT REQUIRED TO MITIGATE SPURIOUS ACTION	SUPPORTING SYSTEMS
	HOT STANDBY	COLD STANDBY				
2MS-V670 (MS 120A)	No	No	Opens	None		Normal valve position, trap prevents steam loss
			Closes	None		Possible buildup of water in Main Steam line. Safe shutdown will not be impaired if available valve 2MS-V671 will open on high water level in drip pot.

ATTACHMENT A-1

EBASCO SERVICES INCORPORATED

CLIENT LOUISIANA POWER & LIGHT COMPANY
PROJECT WATERFORD SES UNIT NO. 3
SUBJECT SPURIOUS SIGNAL GENERATION ANALYSIS
SYSTEM Main Steam SYSTEM NUMBER 78

AFFECTED EQUIPMENT	EQUIPMENT REQUIRED FOR		SPURIOUS SIGNAL ACTION	DETRIMENTAL EFFECT ON SYSTEM/ PLANT'S ABILITY TO SHUTDOWN	EQUIPMENT REQUIRED TO MITIGATE SPURIOUS ACTION	SUPPORTING SYSTEMS
	HOT STANDBY	COLD STANDBY				
2MS-V663 (MS-120B)	No	No	Opens	None		Normal valve position, Trap prevents steam loss
			Closes	None		Possible buildup of water in Main Steam line. Safe shutdown will not be impaired, if available valve 2MS-V664 will open on high water level in drip pot.

LOUISIANA POWER & LIGHT COMPANY
 WATERFORD SES UNIT NO. 3
 ASSOCIATED CIRCUITS ANALYSIS

ATTACHMENT A-2

SYSTEM: SHUTDOWN COOLING

SYSTEM: NUMBER 60B

AFFECTED EQUIPMENT	DRAWING REFERENCE	ASSOCIATED CABLES/ COMPONENTS	ESSENTIAL NON-ESSENTIAL (E) (NE)	REMARKS
SI-VI539 B1 (SI-138B)	CWD-542S	30542G - XB	NE	Information Only
	CWD-542S	30542H - XB	NE	
	CWD-542S	30542J - XB	NE	
SI-VI505 TK1A (SI-331A)	CWD-552S	30552A - SA	E	Spare Heaters are not required.
	CWD-552S	30552B - SA	E	
	CWD-552S	30552N - SA	NE	
	CWD-552S	30552C - SA	E	Only one cable is in service at a time based on transfer switch position.
	CWD-552S	30552D - SA	E	
	CWD-552S	30552E - SA	E	
	CWD-552S	30552F - SA	E	
	CWD-552S	30552G - SA	E	This circuit provide indication only when valve power is lost or disconnected
	CWD-552S	30552H - SA	E	
	CWD-552S	30552M - SA	NE	
	CWD-552S	30552S - SA	E	Information only.
	CWD-552S	30552J - SA	NE	