# PVNGS LIGHTING SYSTEM EVALUATION

#### INTRODUCTION

The normal lighting system provides approximately 90 percent of the illumination throughout the pc r block of each unit and is fed from Non-Class 1E power sources.

The essential lighting system supplements normal lighting, and provides each unit with approximately 10 percent of normal operating illumination throughout the power block in the event of a failure of the normal lighting system. Power for the essential lighting system is provided by diesel backed Class 1E power that is isolated in the event of a SIAS actuation.

The 8 hour emergency lighting system provides reliable battery-powered lighting for all safe shutdown areas, routes to those areas from the control room, and for access and egress along mergency exit coutes for the power block. Emergency illumination is provided in all plant areas to back up the essential lighting.

The power block emergency lighting is energized automatically upon the loss of essential lighting. In the control room suspended ceiling area, a specific number of the fluorescent fixtures of the essential lighting system provide emergency lighting. Integral battery-powered units, each with two incandescent lamps, provide emergency lighting in all other areas. The batteries are sized for 8 hours of operation in areas needed for the operation of safe shutdown equipment and in access and egress routes thereto. Emergency lighting for personnel egress from other plant areas is provided by 1-1/2 hour (minimum) battery units. Power for emergency lights in the horseshoe portion of the control room and in the panel area is supplied by a seismically qualified emergency power unit containing an inverter, battery, charger, and output transfer switch to transfer from essential power source to the inverter output. The emergency power unit feeds one fluorescent lamp, each, in selected fixtures in the ceiling lighting system and in the panel area.

The integral emergency lighting units are Dual Lite No. AS110-2-C-SST-277V or 120V with EXT-P5SB 6-volt lamps, nickel cadmium battery; Dual Lite Nema 4 x 7 with sealed 6-volt storage battery, charger, and automatic solid-state transfer delay, and Emergi-Lite 6-volt with two 9v heads.

Some fluorescent fixtures in the control building ac switchgear room, dc equipment area, auxiliary building channel A and B penetration rooms, and the remote shutdown panel area are fed from four UPS (E-QBN-001, -002, -003, and -004) as shown on drawings 13-E-ZAL-004, -005 and 13-E-ZJIL-002.

### INITIATING EVENT

During the Unit 3 trip on March 3, 1989, inadequate lighting hampered the operator's ability to manually open the ADV's. The ADV's are located on the 120' elevation of the MSSS Bldg but the handwheels required to manually operate the ADV's are located on the 140' elevation of the MSSS Bldg. The lighting system in each room of the 140' MSSS Bldg. consisted of two 500 watt incandescent lamps fed from the normal lighting system, one 500 watt incandescent lamp fed from the essential lighting system and two Dual-Lite self contained battery pack emergency lighting units rated for 1-1/2 hours of operation. The status of the lighting system at the time when the operator tried to manually operate the ADV's was the normal lighting was inoperable due to the loss of the Non-Class 1E power source, the essential lights were off due to SIAS actuation isolation, and the emergency light in both rooms provides only access and egress from the rooms. When the essential lighting system was restore, the essential light in the south room had a burned out bulb leaving that room in total darkness and the essential light in the north was very dim and out bulb leaving that room in total darkness and the essential light in the north was very dim and would not have helped the operator in the manual operation of the ADV's. The emergency lights EXHIBIT "C" were off as per design.

9209100226 920207 PDR FDIA JDNES91-349 PD PDR

#### PROBLEMS

#### FSAR INTERPRETATION

FSAR Section 9B requires 8 hour emergency lighting to manually operate ADVs. This lighting was installed at the 120 elevation of the MSSS Bldg, and illuminated the valve itself. The ADV manual operators (handwheels) are located at the 140 elevation of the MSSS Bldg. The only emergency lights at the 140 level are two 1-1/2 personnel safety access and egress lights.

EED Electrical felt that the intent of the FSAR was to manually control the ADV's from the handwheels at the 140' elevation of the MSSS Bldg. After the March 3rd event, several discussions were held with NED, EED and Licensing. As a result of these discussion, NED and Licensing felt that these lights were only an enhancement and not required to be Appendix 'R' lights, but agreed to make them 8 hour rated lights. EED and Management still had concerns on the interpretation of the FSAR. This resulted in DCP 1, 2, 3FE-QD-022 being issued to upgrade 140' elevation emergency lighting to 8 hour rated emergency lights and most specific criteria.

#### PM's Maintenance

Prior to the March 3rd event, EED had concerns about the reliability of the emergency lighting in the MSSS Bldg. PCR's 87-13-QD-004 and 87-13-QD-007 were generated to upgrade the emergency lighting. Both PCR's were cancelled in March of 1988 by NED. EED Electrical and the Electrical Standard Group developed new preventive maintenance tasks to relamp all incandescent lamps by groups with the correct long life bulbs. These tasks were written in late 1988 and were not performed in the MSSS Bldg. but were scheduled for the upcoming refueling outage. EED feels that if these tasks would have been completed prior to the event, there would have been adequate essential lighting to operate the ADV's.

Prior to the event, the 1-1/2 hour rated emergency lighting PM tasks were waived 5 consecutive times. Emergency lighting would have been more reliable u these PM's had been completed. (Some questions to whether the emergency lights worked during the event have never been answered.)

#### EED's EVALUATION OF CORRECTIVE ACTIONS TAKEN

1, 2, 3FE-QD-022 was generated by NED as an enhancement to resolve the lighting issues in the MSSS Bldg, and to provide access and egress to that area. Prior to the issuance of this DCP, EED Electrical generated PCR 89-13-QD-001, approved by PMC on 3/15/89, to install emergency lights in the MSSS powered by an UPS in a location outside of the MSSS Bldg. Decisions were made to install self-contained battery pack emergency lights (Emergi-Lite) because of parts lead time and the Unit restant schedule. EED had many concerns about the quality and reliability of the Emergi-Lite units. EED considered these units to be of poor quality and unsuitable for the application. EED also question the reliability, NEMA rating and temperature rating of these units. This was discussed in great detail with Management, and the System Engineer was directed to pursue a higher quality product. Exide battery pack lighting used by SONGS was found available and seemed to be of better quality but NED determined that these lights may not be able to handle summertime temperatures at PVNGS. EED again asked NED to pursue the external UPS design. Several letters were written to express EED's reluctance to install Emergi-Lite units. A decision was made to install Emergi-Lite units in Unit Two as a temporary fix and pursue the UPS design for Units One and Three. This decision was changed to install Emergi-Lite in all three Units but the UPS was to be installed prior to summer to keep from having problems from high ambient temperatures. This decision was changed because of economic consideration by the PMC and scheduled for 1991. The Emergi-Lite units were installed in all three Units and successfully passed their 8 hour burn test after experiencing a very high failure rate. EED Electrical believed parts could have been obtained to install the external UPS design prior to restart of Units 1 and 3. EED also expressed concerns that QD-022 lights were shown in Safe Shutdown procedure and on Safe Shutdown drawings but were considered enhancements. As

Procedure 4XAO-XZZ44 (Shutdown Outside Control Room Due to Fire and/or Smoke), 4XOP-XDG02 (Emergency Diesel Generator B') and Safe Shutdown drawings 13-E-ZPL-003 Rev. 4, 13-E-ZPL-002 Rev. 5, and 13-E-ZPL-003 Rev. 4. Final Reports of these walkdowns were issued to NED after meetings with Operation Standards, EED, and Management. The results of these walkdowns showed several areas requiring upgraded or additional emergency lighting to meet the Appendix R' requirements and procedure intent. (Ref. LER 89-019). The walkdowns resulted in the issuance of DCP 1, 2, 3FE-QD-023. Some areas considered EED and Operation Standards required Safe Shutdown lights, NED considered enhancements. (Letter #167-04502-SLK/EC Sept. 20, 1989). EED still had concerns that all the total Appendix R' Safe Shutdown path lighting may not be adequately addressed. Thus S-Mod 1, 2, 3SM-QD-007 was generated to be done after restart as an enhancement.

Although DCPs QD-022 and QD-023 were designed and installed in the Units prior to restart, Electrical Standards was unable to generate PM tasks due to a SIMS database procedural problems. ICR 06478 against procedure 81AC-OCCC5 was written by EED on March 27, 1989 with the intention to resolve this issue. Several EERs were also written to address these concerns. This problem, however, never been resolved; and therefore no PMs were being generated to cover the additional lights installed by DCP QD-022 and QD-023, due to lack of location codes in SIMS. Several meetings with EED and Electrical Standards were held to determine how to implement location codes into the SIMS database. Also Hot Line was appraised of this concern and the Quality Department was asked to generate a CAR. Electrical Standards has walkdown all locations and is in the process of completing the PMs.

#### RECOMMENDATIONS

LIC/NED	Determine	requirements	of Appendix 'R	'Safe	Shutdown	and FSAR lighting.
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LIC Initiate FSAR change to clarify MSSS ADV lighting, egress and access routes.

NED Initiate/change Safe Shutdown drawings to reflect actual Safe Shutdown path and light locations.

OPS STD/NED Revise Safe Shutdown procedures to be in agreement with NED final determination of Appendix 'R' Safe Shutdown equipment.

NED Generate Design Change to identify Safe Shutdown route in Units. PCR 89-13-ZZ-003 initiated by EED.

NED Issue drawings to show equipment illuminated by Appendix 'R' Safe Shutdown lighting.

NED/EED Install external UPS DCP prior to summer of 1990.

NED/OPS STD/EED Determine actual Appendix 'R' Safe Shutdown requirements and update all procedures and implement design changes if required.

NED Modify Sitemod QD-007 to include areas that were omitted.

MAINT/EED/ABRM Install Sitemod QD-007 prior to restart Units 1 and 2 and as soon as possible in Unit 3.

NED Change Procedure 81AC-OCC05 to allow location codes of new equipment to be entered into SIMS database, as part of the normal design modification process.

NED Incorporate outstanding PCRs that require SIMS database updates.

NED Review old DCPs that are being worked which adds new equipment to ensure all equipment is added to SIMS database.

EED Walkdown and generate a monthly State of System report to upper management reflecting the condition of all Appendix 'R' Safe Shutdown lighting not in high radiation areas.

Management Create a program that will allow System Engineers to get priority work done on critical equipment in a timely manner.

Maint Ensure emergency lighting receives priority maintenance and feedback to be given to System Engineers.

NED Resolve concerns addressed in EED lighting report that all Auxiliary Bldg. essential lighting is fed from Train A bus.

### SUMMATION OF SYSTEM ENGINEER'S WALKDOWN UNIT ONE

EQUIPMENT NUMBER		COMMENTS
1E-STL-74C-09-100-01	LIGHTS OK	
1E-STL-74C-09-100-02	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-74C-09-100-03	LIGHTS OK	PC BOARD WARPET BAD
1E-STL-74C-09-100-04	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-74C-09-100-05	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-74C-09-100-06	LIGHTS OK	PC BOARD WARPED
1E-STL-74C-09-110-07	LIGHTS OK	
1E-STL-74C-09-130-08	LIGHTS OK	
1E-STL-74C-09-140-09	LIGHTS OK	
1E-SCL-72A-14-140-15		PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-16		PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-17		PC BOARD WARPED REAL BAD
1E-SCL-72A-14-140-18		PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-19		PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-20		PC BOARD LITTLE WARPED
1EQBN0004		BATTERY #2A FAILED TO MEET ACCEPTANCE CRITERIA AFTER 1/2 HR OPEN CIRCUIT. WO 391762 WRITTEN TO FIX.
1EQBN0001		BATTERY FAILED ACCEPTANCE CRITERIA. WR 389835 WRITTEN TO FIX.
1EQBN0002		POST ON BATTERY #3A WAS CRACKED AND FLATTEN OUT. WO 348770 WRITTEN TO FIX.

STL For ADV area (egress & access)
SCL lights For ADV handwheal

2/25/90

auster per not written yet

# SUMMATION OF SYSTEM ENGINEER'S WALKDOWN UNIT TWO

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EQUIPMENT NUMBER	STATUS	COMMENTS
2E-STL-74C-09-100-01	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-100-02	LIGHTS OK	PC BOARD WAFPED BAD
2E-STL-74C-09-100-03	LIGHTS OK	PC BOARD WARPED BAD
2E-STL-74C-09-100-04	LIGHTS OK	PC BOARD WARPED BAD
2E-STL-74C-09-100-05	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-090-06	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-110-07	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-130-08	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-140-09	LIGHTS OK	PC BOARD WARPED
2E-SCL-72A-14-140-15		* LIGHT FAILED 8 HR BURN TEST. WO 411517 WRITTEN TO FIL PC BOARD WARPED, EER 90-QD-003
2E-SCL-72A-14-140-16		LIGHT HAS CONTINUOUS HI-CHARGE INDICATION. WO 408933 WRITTEN TO FIX. PC BOARD WARPED, EER 90-QD-003.
2E-SCL-72A-14-140-17		LIGHT HAS CONTINUOUS HI-CHARGE INDICATION. WO 408937 WRITTEN TO FIX. PC BOARD WARPED, EER 90-QD-003.
2E-SCL-72A-14-140-18		PC BOARD WARPED
2E-SCL-72A-14-140-19		* LIGHT FAILED 8 HR BURN TEST. WO 411551 WRITTEN TO FIX. PC BOARD WARPED BAD, EER 90-QD-003.
2E-SCL-72A-14-140-20		* LIGHT FAILED 8 HR BURN TEST. WO 411549 WRITTEN TO FIX. PC BOARD WARPED, EER 90-QD-003.
2E-SJL-D79-04-080-08	LIGHTS OK	UNIT READY AND HI-CHARGE LIGHT ON. WR 543555 WRITTEN TO FIX.
2E-QBN-0002		BATT #2B FAILED MIN. VOLT ACC. CRITERIA. WO 410186 WRITTEN TO FIX. UPS IS READING 30% LOAD. WR 346029 WRITTEN TO FIX.

2/25/90

# SUMMATION OF SYSTEM ENGINEER'S WALKDOWN UNIT THREE

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3E-STL-74C-09-100-01	LIGHTS C.	PC BOARD WARPED	
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3E-STL-74C-09-100-03	LIGHTS OK	PC BOARD WARPED	
3E-STL-74C-09-100-04	LIGHTS OK	PC BOARD WARPED BAD	
3E-STL-74C-09-100-05	LIGHTS OK	PC BOARD WARPED	
3E-STL-74C-09-090-06	LIGHTS OK		
3E-STL-74C-09-110-07	LIGHTS OK	PC BOARD WARPED	
3E-STL-"4C-09-130-08	LIGHTS OK	PC BOARD WARPED	
3E-STL-74C-09-140-09	LIGHTS OK	PC BOARD WARPED	
3E-SCL-72A-14-140-15		PC BCARD LITTLE WARPED	
3E-SCL-72A-14-140-16		TO BOARD LITTLE WARPED	
3E-SCL-72A-14-140-17		PC BOARD LITTLE WARPED	
3E-SCL-72A-14-14J-18		PC BOARD LITTLE WARPED	
3E-SCL-72A-14-140-19		PC BOARD LITTLE WARPED	
3E-SCL-72A-14-140-20		PC BOARD LITTLE WARPED	
3EQBN002-G	LAMP OUT	PMWO 402054 ALSO WAS REPORTED ON INVALID MNCR 90-QB-0001	
3EQBN002-F	L'CHT OK	FIXTURE SUPPORT BROKEN	
3E-SGL-D79-05-100-02	LIGHT OK	POSSIBLE CHARGING CARD PROBLEM WP 543554 WRITTEN BY SE	
3E-SJL-D79-04-100-10	LIGHT OK	POSSIBLE CHARGING CARD PROB! EM WR 543554 WRITTEN BY ST	
3E-SAL-72D-03-120-20	LIGHT OK	OVE. SPRAYED WITH GRAY PAINT	
3E-SAL-72C-03-100-03	LIGHT OOS	WR 368605 CANCELLED BY WO 404114	
3E-ZAL-72C-03-100-05	LIGHT OK	TO BE UPGRADED BY 3SM-QD-007 TO A SAFESHUTDOWN LGT. WO 407506 WRITTEN TO IMPLEMENT SITEMOD. SITEMOD IS NOT ISSUED YET.	

TO: DAN SMYERS

DATE: 02-25-90

FROM: LINDA MITCHELL

DURING MY SYSTEM ENGINEER WALKDOWN IN UNIT 3, ON SATURDAY FEB. 24, 1990. I FOUND THAT THE SAFE SHUTDOWN LIGHT 3EQBN002-G IN CONTROL BUILDING 100' ELEVATION HAD NOT BEEN REPAIRED YET. THIS LIGHT WAS A UNIT RESTART ITEM INSTALLED UNDER DCP 3FE-QD-023 AND HAS NOT BEEN OPERATING SINCE 01-05-90. THIS CONDITION WAS REPORTED ON MNCR 90-QB-0001, BUT MNCR WAS INVALIDATED ON 02-16-90. THE NRC RECION INSPECTION TEAM WAS TOLD THAT SAFE SHUTDOWN LIGHT 3EQBNG02-G WAS BEING REPAIRED ON 02-15-90. ALTHOUGH PM WOW 00402054 HAS BEEN GENERATED TO R. IR THIS LIGHT, IT HAS NOT BEEN FIXED TO DATE, ALSO THE OTHER SAFE SHUTDOWN LIGHT IN THAT AREA, 3EQBN002-F, HAS COME UNBOLTED FROM UNISTRUT. THIS CONDITION HAS ALSO EXISTED SINCE 12-24-89 (REF. WO# 00405087)

I FIND THESE REPAIRS TO BE UNTIMELY.

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PVNGS WORK REQUEST

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DISPOSITION ICHECA ONE!		-5108- W	OP32	FROL CE	NTER	100	A MILT OF	ENTER	1 3 4 3	P. N.
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- 1) Do bus toit on all Enor. lights
- 2) Generate a list of all Ener lights - where are they
  - what type we they
  - are they original design App. "R" lights - curent statue
  - 3) Write the gusterly (now monthly) PM
  - 4) Expelite the DCP to upgrade the Eno. lights
  - 5) Do root cause of failing lights
  - 6) Put together a team to do this.
  - 7) Got independent evaluation by NED ...

# SUMMATION OF S'STEM ENGINEER'S WA KDOWN UNIT ONE

		TOOMS CHILDINE
EQUIPMENT NUMBER	STATUS	COMMENTS
1E-STL-74C-09-100-01	LIGHTS OK	PC BOARD WARPED
1E-STL-74C-09-100-02	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-74C-09-100-03	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-74C-09-100-04	LIGHTS OK	TO BOARD WARPED BAD
1E-STL-74C-09-100-05	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-74C-09-100-06	LIGHTS OK	PC BOARD WARPED
1E-STL-74C-09-110-07 .	LIGHTS OK	
1F-STL-74C-09-130-08	LIGHTS OK	
1E-STL-74C-09-140-09	LIGHTS OK	
1E-SCL-72A-14-140-15		PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-16		PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-17		PC BOARD WARPED REAL BAD
1E-SCL-72A-14-140-18		PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-19		PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-20		PC BOARD LITTLE WARPED
1EQBN0004		BATTERY #2A FAILED TO MEET ACCEPTANCE CRITERIA AFTER 1/2 HR OPEN CIRCUIT. WO 391762 WRITTEN TO FIX.
1LQBN0001		BATTERY FAILED ACCEPTANCE CRITERIA. WR 389835 WRITTEN TO FIX.
1EQBN0002		POST ON BATTERY #3A WAS CRACKED AND FLATTEN OUT. WO 348770 WRITTEN TO FIX

2/25/90

3 PAGES EXHIBIT "A"

# SUMMATION OF S'STEM ENGINEER'S WA' 'COOWN UNIT TWO

The state of the s		
LQUIPMENT NUMBER	STATUS	COMMENTS
2E-STL-74C-09-100-01	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-100-02	LIGHTS OK	PC BOARD WARPED BAD
2E-STL-74C-09-100-03	LIGHTS OK	PC BOARD WARPED BAD
2E-STL-74C-09-100-04	LIGHTS OK	PC BOARD WARPED BAD
2E-STL-74C-09-100-05	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-090-06	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-110-07 .	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-130-08	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-140-09	LIGHTS OK	PC BOARD WARPED
2E-SCL-72A-14-140-15		LIGHT FAILED 8 HR BURN TEST. WO 411517 WRITTEN TO FIX. PC BOARD WARPED, EER 90-QD-003
2E-SCL-72A-14-140-16		LIGHT HAS CONTINUOUS HI-CHARGE INDICATION. WO 408933 WRITTEN TO FIX. PC BOARD WARPED, EER 90-QD-003.
2E-SCL-72A-14-140-17		LIGHT HAS CONTINUOUS HI-CHARGE INDICATION, WO 408937 WRITTEN TO FIX. PC BOARD WARPED, EER 90-QD-008.
2E-SCL-72A-14-140-18		PC BOARD WARPED
2E-SCL-72A-14-140-19		LIGHT FAILED 8 HR BURN TEST. WO 411551 WRITTEN TO FIX. PC BOARD WARPED BAD, EER 90-QD-003.
2E-SCL-72A-14-140-20		LIGHT FAILED 8 HR BURN TEST. WO 411549 WRITTEN TO FIX. PC BOARD WARPED, EER 90-QD-003.
2E-SJL-D79-04-080-08	LIGHTS OK	UNIT READY AND HI-CHARGE LIGHT ON. WR 543555 WRITTEN TO FIX.
2E-QBN-0002		BATT #2B FAILED MIN. VOLT ACC. CRITERIA. WO 410186 WRITTEN TO FIX. UPS IS READING 30% LOAD. WR 346029 WRITTEN TO FIX.

2/25/90

# SUMMATION OF SY TEM ENGINEER'S WALTOWN UNIT THREE

EQUIPMENT NUMBER	STATUS	COMMENTS
3E-STL-74C-09-100-01	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-100-02	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-100-03	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-100-04	LIGHTS OK	PC BOARD WARPED BAD
3E-STL-74C-09-100-05	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-090-06	LIGHTS OK	
3E-STL-74C-09-110-07 .	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-130-08	LIGHTS OK	PC BOARL WARPED
3E-STL-74C-09-140-09	LIGHTS OK	PC BOARD WARPED
3E-SCL-72A-14-140-15		PC BOARD LITTLE WARPED
3E-SCL-72A-14-140-16		PC BOARD LITTLE WARPED
3E-SCL-72A-14-140-17		PC BOARD LITTLE WARPED
3E-SCL-72A-14-140-18		PC BOARD LITTLE WARPED
3E-SCL-72A-14-140-19		PC BOARD LITTLE WARPED
3E-SCL-72A-14-140-20		PC BOARD LITTLE WARPED
3EQBN002-G	LAMP OUT	PMWO 402054 ALSO WAS REPORTED ON INVALID MNCR 90-QB-0001
3EQBN002-F	LIGHT OK	FIXTURE SUPPORT BROKEN
3E-SGL-D79-05-100-02	LIGHT OK	POSSIBLE CHARGING CARD PROBLEM WR 543554 WRITTEN BY SE
3E-SJL-D79-04-100-10	LIGHT OK	POSSIBLE CHARGING CARD PROBLEM WR 543554 WRITTEN BY SE
3E-SAL-72D-03-120-20	LIGHT OK	OVER SPRAYED WITH GRAY PAINT
3E-SAL-72C-03-100-03	LIGHT OOS	WR 368605 CANCELLED BY WO 404114
3E-ZAL-72C-03-100-05	LIGHT OK	TO BE UPGRADED BY SSM-QD-007 TO A SAFESHUTDOWN LGT. WO 407506 WRITTEN TO IMPLEMENT SITEMOD. SITEMOD IS NOT ISSUED YET.

# PVNGS LIGHTING SYSTEM EVALUATION

#### INTRODUCTION

The normal lighting system provides approximately 90 percent of the illumination throughout the power block of each unit and is fed from Non-Class 1E power sources.

The essential lighting system supplements normal lighting, and provides each unit with approximately 10 percent of normal operating illumination throughout the power block in the event of a failure of the normal lighting system. Power for the essential lighting system is provided by diesel backed Class 1E power that is isolated in the event of a SIAS actuation.

The 8 hour emergency lighting system provides reliable battery-powered lighting for all safe shutdown areas, routes to those areas from the control room, and for access and egress along emergency exit routes for the power block. Emergency illumination is provided in all plant areas to back up the essential lighting.

The power block emergency lighting is energized automatically upon the loss of essential lighting. In the control room suspended ceiling area, a specific number of the fluorescent fixtures of the essential lighting system provide emergency lighting. Integral battery-powered units, each with two incandescent lamps, provide emergency lighting in all other areas. The batteries are sized for 8 hours of operation in areas needed for the operation of safe shutdown equipment and in access and egress toutes thereto. Emergency lighting for personnel egress from other plant areas is provided by 1-1/2 hour (minimum) battery units. Power for emergency lights in the horseshoe position of the control room and in the panel area is supplied by a seismically qualified emergency power unit containing an inverter, battery, charger, and output transfer switch to transfer from essential power source to the inverter output. The emergency power unit feeds one fluorescent lamp, each, in selected fixtures in the ceiling lighting system and in the panel area.

The integral emergency lighting units are Dual Lite No. AS110-2-C-SST-277V or 120V with EXT-P5SB 6-volt lamps, nickel cadmium battery, Dual Lite Nema 4 x 7 with sealed 6-volt storage battery, charger, and automatic solid-state transfer delay, and Emergi-Lite 6-volt with two 9v heads.

Some fluorescent fixtures in the control building ac switchgear room, dc equipment area, auxiliary building channel A and B penetration rooms, and the remote shutdown panel area are fed from four UPS (E-QBN-tol, -002, -003, and -004) as shown on drawings 13-E-ZAL-004, -005 and 13-E-ZJL-002.

#### INITIATING EVENT

During the Unit 3 trip on March 3, 1989, inadequate lighting hampered the operator's ability to manually open the ADV's. The ADV's are located on the 120' elevation of the MSSS Bldg but the handwheels required to manually operate the ADV's are located on the 140' elevation of the MSSS Bldg. The lighting system in each room of the 140' MSSS Bldg. consisted of two 500 watt incandescent lamps fed from the normal lighting system, one 500 watt incandescent lamp fed from the essential lighting system and two Dual-Lite self contained battery pack emergency lighting units rated for 1-1/2 hours of operation. The status of the lighting system at the time when the operator tried to manually operate the ADV's was the normal lighting was inoperable due to the loss of the Non-Class 1E power source, the essential lights were off due to SIAS actuation isolation, and the emergency light in both rooms provides only access and egress from the rooms. When the essential lighting system was restore, the essential light in the south room had a burned out bulb leaving that room in total darkness and the essential light in the north was very dim and would not have helped the operator in the manual operation of the ADV's. The emergency lights were off as per design.

489585 E/3 EXHIBIT "A"

# PROBLEMS

#### FSAR INTERPRETATION

FSAR Section 9B requires 8 hour emergency lighting to manually operate ADV's. This lighting was installed at the 120' elevation of the MSSS Bldg, and illuminated the valve itself. The ADV manual operators (handwheels) are located at the 140' elevation of the MSSS Bldg. The only emergency lights at the 140' level are two 1-1/2 personnel safety access and egress lights.

EED Electrical felt that the intent of the FSAR was to manually control the ADV's from the handwheels at the 140' elevation of the MSSS Bldg. After the March 3rd event, several discussions were held with NED, EED and Licensing. As a result of these discussion, NED and Licensing felt that these lights were only an enhancement and not required to be Appendix 'R' lights, but agreed to make them 8 hour rated lights. EED and Management still had concerns on the interpretation of the FSAP. This resulted in DCP 1, 2, 3FE-QD-022 being issued to upgrade 140' elevation emergency lighting to 8 hour rated emergency lights and meet specific criteria.

#### PM's/Maintenance

Prior to the March 3rd event, EED had concerns about the reliability of the emergency lighting in the MSSS Bldg. PCR's 87-13-QD-004 and 87-13-QD-007 were generated to upgrade the emergency lighting. Both PCR's were cancelled in March of 1988 by NED. EED Electrical and the Electrical Standard Group developed new preventive maintenance tasks to relamp all incandescent lamps by groups with the correct long life bulbs. These tasks were written in late 1988 and were not performed in the MSSS Bldg. but were scheduled for the upcoming refueling outage. EED feels that if these tasks would have been completed prior to the event, there would have been adequate essential lighting to operate the ADV's.

Prior to the event, the 1-1/2 hour rated emergency lighting PM tasks were waived 5 consecutive times. Emergency lighting would have been more reliable if these PM's had been completed. (Some questions to whether the emergency lights worked during the event have never been answered.)

#### EED's EVALUATION OF CORRECTIVE ACTIONS TAKEN

1. 2. 3FE-QD-023 was generated by NED as an enhancement to resolve the lighting issues in the MSSS Bldg, and to provide access and egress to that area. Prior to the issuance of this DCP, EED Electrical generated PCR 89-13-QD-001, approved by PMC on 3-15-89, to install emergency lights in the MSSS powered by an UPS in a location outside of the MSSS Bldg. Decisions were made to install self contained battery pack emergency lights (Emergi-Lite) because of parts lead time and the Unit restart schedule. EED had many concerns about the quality and rehability of the Emergi-Lite units. EED considered these units to be of poor quality and unsuitable for the application. EED also question the reliability, NEMA rating and temperature rating of these units. This was discussed in great detail with Management, and the System Engineer was directed to pursue a higher quality product. Exide battery pack lighting used by SONGS was found available and seemed to be of better quality but NED determined that these lights may not be able to handle summertime temperatures at PVNGS. EED again asked NED to pursue the external UPS design. Several letters were written to express PED's reluctance to install Emergi-Lite units. A decision was made to install Emergi-Lite units in Unit I'wo as a temporary fix and pursue the UPS design for Units One and Thre. This decision was changed to install Emergi-Lite in all three Units but the UPS was to be installed prior to summer to keep from having protesms from high ambient temperatures. This decision was changed because of economic consideration by the PMC and scheduled for 1991. The Emergi-Lite units were installed in all three Units and successfully passed their 8 hour burn test after experiencing a very high failure rate. EED Electrical believed parts could have been obtained to install the external UPS design prior to restart of Units 1 and 3. EED also expressed concerns that QD-022 lights were shown in Safe Shutdown procedure and on Safe Shutdown drawings but were considered enhancements. As a

Procedure 4XAO-XZZ44 (Shutdown Outside Control Room Due to Fire and/or Smoke), 4XOP-XDG02 (Emergency Diesel Generator 'B') and Safe Shutdown drawings 13-E-ZPL-003 Rev. 4, 13-E-ZPL-002 Rev. 5, and 13-E-ZPL-003 Rev. 4. Final Reports of these walkdowns were issued to NED after meetings with Operation Standards, EED, and Management. The results of these walkdowns showed several areas requiring upgraded or additional emergency lighting to meet the Appendix 'R requirements and procedure intent. (Ref. LER 89-019). The walkdowns resulted in the issuance of DCP 1, 2, 3FE-QD-023. Some areas considered EED and Operation Standards required Safe Shutdown lights, NED considered enhancements. (Letter #167-04502-SLK/EC Sept. 20, 1989). EED still had concerns that all the total Appendix 'R' Safe Shutdown path lighting may not be adequately addressed. Thus S-Mod 1, 2, 3SM-QD-007 was generated to be done after restart as an enhancement.

Although DCPs QD-022 and QD-023 were designed and installed in the Units prior to restart, Electrical Standards was unable to generate PM tasks due to a SIMS database procedural problems. ICR 06478 against procedure 81AC-OCC05 was written by EED on March 27, 1989 with the intention to resolve this issue. Several EERs were also written to address these concerns. This problem, however, never been resolved; and therefore no PMs were being generated to cover the additional lights installed by DCP QD-022 and QD-023, due to lack of location codes in SIMS. Several meetings with EED and Electrical Standards were held to determine how to implement location codes into the SIMS database. Also Hot Line was appraised of this concern and the Quality Department was asked to generate a CAR. Electrical Standards has walkdown all locations and is in the process of completing the PMs.

#### RECOMMENDATIONS

1 1 1 1 2

LIC/NED Determine requirements of Appendix 'R' Safe Shutdown and FSAR lighting.

LIC Initiate FSAR change to clarify MSSF ADV lighting, egress and access routes.

NED Initiate/change Safe Shutdown drawings to reflect actual Safe Shutdown path

and light locations.

OPS STD/NED Revise Safe Shutdown procedures to be in agreement with NED final

determination of Appendix 'R' Safe Shutdown equipment,

NED Generate Design Change to identify Safe Shutdown route in Units. PCR

89-13-ZZ-003 initiated by EED.

NED Issue drawings to show equipment illuminated by Appendix 'R' Safe Shutdown

lighting.

NED/EED Install external UPS DCP prior to summer of 1990.

NED/OPS STD/EED Determine actual Appendix 'R' Safe Shutfown requirements and

update all procedures and implement design changes if required.

NED Modify Sitemod QD-007 to include areas that were omitted.

MAINT/EED/ABRM Install Stemod QD-007 prior to restart Units 1 and 2 and as soon as possible

in Unit 3.

NED Change Procedure 81AC-OCC05 to allow location codes of new equipment to

be entered into SIMS database, as part of the normal design modification

process.

NED Incorporate outstanding PCRs that require SIMS database updates.

NED Review old DCPs that are being worked which adds new equipment to ensure

all equipment is added to SIMS database.

EED

Walkdown and generate a monthly State of System report to upper management reflecting the condition of all Appendix 'R' Safe Shutdown lighting not in high radiation areas.

Management

Create a program that will allow System Engineers to get priority work done on critical equipment in a timely manner.

Maint

Ensure emergency lighting receives priority maintenance and feedback to be given to System Engineers.

NED

Resolve concerns addressed in EED lighting report that all Auxiliary Bldg. essential lighting is fed from Train A bus.

2/26/90 DSmythes L. Mitchell

#### EMERGENCY LIGHTING ACTION PLAN

EED ELECTRICAL TO COORDINATE THE FOLLOWING:

- 1 WORK CONTROL IN ALL UNITS DEVELOPE A SCHEDULE TO DO 8 HOUR BURN TEST ON:
  - ALL EMERGI-LIGHTS
  - 10% OF ALL OTHER TYPES (EED TO PROVIDE LIST)
- MAINTENANCE IMPLEMENT & HOUR BURN TESTS AND FEEDBACK ALL FAILURES TO SYSTEM ENGINEER.
  - 2 all emergi-lights
  - 3 10% of all other types
- 4 EED ELECTRICAL GENERATE A LIST OF ALL EMERGENCY LIGHTS THAT INCLUDES THE FOLLOWING INFORMATION:
  - LOCATION OF EACH LIGHT
  - TYPE OF LIGHT
- DESIGN OF LIGHT AND DOCUMENT USE TO INSTALL ie. APPENDIX'R' ORIGINAL, APPENDIX'R' ADDED BY DCP, ETC.
  - CURRENT STATUS OF EACH LIGHT
- 5 ELECTRICAL STANDARDS GENERATE QUARTERLY PM TO INSPECT AND BUTTON TEST EACH LIGHT MONTHLY.
- 6 NED ELECTRICAL EXPEDITE DESIGN OF EXTERNAL UPS DOP TO UPGRADE MSSS LIGHTING.
- 7 EED ELECTRICAL DETERMINE ROOT CAUSE OF FAILURE OF 3 FAILED EMERGI-LIGHTS IN UNIT II. (90-QD-003)
- 8 ELECTRICAL STANDARDS ADD STATEMENT TO ALL EMERGENCY LIGHTING PM'S TO "IMMEDIATELY CONTACT ENGINEERING IF ANY FAILURES OCCUR".
- 9 EED ELECTRICAL RESEARCH ALL CORRECTIVE ACTIONS THAT HAVE BEEN DONE ON EMERGI-LIGHTS. CA' AGORIZE AND DETERMINE WHETHER ACTIONS WERE TAKEN BEFORE OP. AFTER LIGHTS WERE PUT IN SERVICE.

25 PAGES EXHIBIT "D" = E/4

### FORECAST COMPLETION DATES:

- 2:30 P.M. . (1) 2/27/90
- (2) 3/4/90
- (3) 3/9/90 UNIT I 3/16/90 UNIT II (4) 2/27/90 2:30 P.M.
- (5) 3/5/90
- (6) 4/13/90 prelimary
- (7) 3/15/90
- (8) 3/5/90
- (9) 3/8/90

LIGHT LIGHT VESTL74C0910003 ESTL74C0911007

W.R DATE IUT WO# DATE INT 415 389788 10-15-89 CLSI 3897884 1-27-90 409000 1-27-90 114:

JAIT 2 LIGHT 2ESTL74C0909006 366826 379881 2.8 90 RESC272A1414017 2ESCL72A1414016 379880 2-8-90 2ESTL74C0914009 9-7-89/ 3 446 44 2E SCL 72A1414020 366505 2-15-90 19 366509 2-15-90 366511 2-15-90

10-26-89 10:26.89 Clar 391956 -16 - 9 - Th 408937 2-8-90 PLND 408933 2-8-90 FLND 382091 9-7-89 7-16205 STILL OPEN 411549 411551 411517

1 15 T 3 SEST C 74 C 09 15 8 10

770252 287614 11-6-84

410869 2-20-90 AUTH

# SUMMATION OF SYSTEM ENGINEER'S WALKDOWN UNIT ONE

EQUIPMENT NUMBER	STATUS	COMMENTS
1E-STL-74C-09-100-01	LIGHTS OK	PC BOARD WARPED
1E-STL-74C-09-100-02	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-740 09-100-03	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-74C-09-100-04	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-74C-09-100-05	LIGHTS OK	PC BOARD WARPED BAD
1E-STL-74C-09-100-06	LIGHTS OK	PC BOARD WARPED
1E-STL-74C-09-110-07	LIGHTS OK	
1E-STL-74C-09-130-08	LIGHTS OK	
1E-STL-74C-09-140-09	LIGHTS OK	
1E-SCL-72A-14-140-15	LIGHTS OK	PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-16	LIGHTS OK	PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-17	LIGHTS OK	PC BOARD WARPED REAL BAD
1E-SCL-72A-14-140-18	LIGHTS OK	PC B 'ARD LITTLE WARPED
1E-SCL-72A-14-140-14	LIGHTS OK	PC BOARD LITTLE WARPED
1E-SCL-72A-14-140-20	LIGHTS OK	PC BOARD LITTLE WARPED
1EQBN0004		BATTERY #2A FAILED TO MEET ACCEPTANCE CRITERIA AFTER 1/2 HR OPEN CIRCUIT. WO 391762 WRITTEN TO FIX.
1EQBN0001		BATILRY FAILED ACCEPTANCE CRITERIA. WR 389835 WRITTEN TO FIX.
įEQBN0002		POST ON BATTERY #3A WAS CRACKED AND FLATTEN OUT. WO 348770 WRITTEN TO FIX.

# SUMMATION OF SYSTEM ENGINEER'S WALKDOWN UNIT THREE

EQUIPMENT NUMBER	STATUS	COMMENTS
3E-STL-74C-09-100-01	LIGI:TS OK	PC BOARD WARPED
3E-S1L-74C-09-100-02	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-100-03	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-100-04	LIGHTS OK	PC BOARD WARPED BAD
3E-STL-74C-09-100-05	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-090-06	LIGHTS OK	
3E-STL-74C-09-110-07	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-130-08	LIGHTS OK	PC BOARD WARPED
3E-STL-74C-09-140-09	LIGHTS OK	PC BOARD WARPED
3E-SCL-72A-14-140-15	LIGHTS OK	PC BOARD LITTLE WARPED
3E-SCL-72A-14-140-16	LIGHTS OK	PC BOARD LITTLE WARPED
3E-SCL-72A-19-140-17	LIGHTS OK	PC BOARD LITTLE WARPED
3E-SCL-72A-14-140-18	LIGHTS OK	PC BOARD LITTLE WARPED
2E-SCL-72A-14-140-19	LIGHTS OK	PC BOARD LITTLE WARPED
3E-SCL-72A-14-140-20	LIGHTS OK	PC BOARD LITTLE WARFED
3EQLN002-G	LAMP OUT	PMWO 402054 ALSO WAS REPORTED ON INVALID MNCR 90-QB-0001
3EQBN002-F	LIGHT OK	FIXTURE SUPPORT BROKEN
3E-SGL-D79-05-100-02	LIGHT OK	POSSIBLE CHARGING CARD PROBLEM WR 543554 WRITTE: BY SE
3E-SJL-D79-04-100-10	LIGHT OK	POSSIBLE CHARGING CARD PROBLEM WR 543554 WRITTEN BY SE
3E-SAL-72D-03-120-20	LIGHT OK	OVER SPR ED WITH GRAY PAINT
3E-SAL-72C-03-100-03	1'GHT OOS	WR 368605 CANCELLED BY WO 404114
3E-ZAL-72C-03-100-05	LIGHT OK	TO BE UPGRADED BY 3SM-QD-007 TO A SAFESHUTDOWN LGT. WO 407506 WRITTEN TO IMPLEMENT SITEMOD. SITEMOD IS NOT ISSUED YET.

### SUMMATION OF SYSTEM ENGINEER'S WALKDOWN UNIT TWO

EQUIPMENT NUMBER	STATUS	COMMENTS
2E-STL-74C-09-100-01	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-100-02	LIGHTS OK	PC BOARD WARPED BAD
2E-STL-74C-09-100-03	LIGHTS OK	PC BOARD WARPED RAD
2E-STL-74C-09-100-04	LIGHTS OK	PC BOARD WARPED BAD
2E-STL-74C-03-100-05	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-090-06	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-110-07	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-130-08	LIGHTS OK	PC BOARD WARPED
2E-STL-74C-09-140-09	LIGHTS OK	PC BOARD WARPED
2E-SCL-72A-14-140-15	LIGHTS OK	LIGHT FAILED 8 HR BURN TEST WO 411517 WRITTEN TO FIX PC BOARD WARPED, EER 90-QD-003
2E-SCL-72A-14-140-16	LIGHTS OK	LIGHT HAS CONTINUOUS HI-CHARGE INDICATION. WO 408933 WRITTEN TO FIX. PC BOARD WARPED, EER 90-QD-003.
2E-SCL-72A-14-140-17	LIGHTS OK	LIGHT HAS CONTINUOUS HI-CHARGE INDICATION. WO 408937 WRITTEN TO FL. PC BOARD WARPED, EER 90-QD-003.
2E-SCL-72A-14-140-18	LIGHTS OK	PC BOARD WARPED
2E-SCL-72A-14-140-19	LIGHTS OK	LIGHT FAILED 8 HR BURN TEST. WO 411551 WRITTEN TO FIX. PC BOARD WARPED BAD, EER 90-QD-003.
2E-SCL-72A-14-140-20	LIG. TS OK	LIGHT FAILED 8 HR BURN TEST. WO 411549 WRITTEN TO FIX. PC BOARD WARPED, EER 90-QD-603.
2E-SJL-D79-04-080-08	LIGHTS OK	UNIT READY AND HI-CHARGE LIGHT ON. WR 543555 WRITTEN TO FIX.
2E-QBN-0002		BATT #2B FAILED MIN. VOLT ACC. CRITERIA. WO 410186 WRITTEN TO FIX. UPS IS READING 30% LOAD. WR 346029 WRITTEN TO FIX.

2/25/90

#### EQUIPMENT NUMBER

### TASK NUMBER

#### EMERGI-LITE (DCP QD-022)

1E-STL-74C-09-100-01 1E-STL-74C-09-100-02 1E-STL-74C-09-100-03 1E-STL-74C-09-100-04		411961 411962 404521
1E-STL-74C-09-100-05		
1E-STL-74C-09-090-06	- 1 A - 1	2/27/90 To 3/2/90
1E-STL-74C-09-110-07		418.57
1E-STL-74C-09-13C-08		
1E-STL-74C-09-140-09		
1E-SCL-72A-14-140-15		
1E-SCL-72A-14-140-16		
1E-SCL-72A-14-140-17		
1E-SCL -72A-14-140-18		
1E-SCL-72A-14-140-19		
1E-SCL-72A-14-140-20		
1P-9FT-15W-14-140-50		

#### HALOPHANE UPS

1EQBN0001 1EQBN0002	PICK ONE	4-1915	
1EQBN0003		STANT 3/5/90 -	3/4/90
1EQBN0004 /			

#### EXIDE UPS

1EQDNF01 } PICK ONE - 409 016 2/28/90 - 3/1/40

#### DUAL LITE

	- last				
1	IE-SAL-71C-03-100-06				
1	IE-SAL-71C-01-140-06				
1	E-SJL-D79-02-074-10				
1	E-SJL-D79-02-074-07				
- 1	E-SGL-D79-05-100-06-				
1	E-STL-74C-07-100-03			STANT	2/2/22
1	E-SAL-72D-03-120-23			> 3/2/10 1	3/5/20
1	E-SAL-72D-03-120-12	and the second			
1	E-SJL-D79-02-074-	1. 18 year 6 6 2 1 2 1			
	E-SJL-D79:04:100-10				
	E-STL-74A-08-100-05				
	E-SAL-72C-07-130-03				
	E-SJL-D84-18-140-06				
	7-STL-74C-09-100-07				
	F SAL72 N DANG	a - 11 Second Section	12/2		
	the California of the A				

### EQUIPMENT NUMBER TASK NUMBER

### EMERCIALITY (DCP OD-022)

i		
3E-STL-74C-09-100-01 3E-STL-74C-09-100-02 3E-STL-74C-09-100-03 3E-STL-74C-09-100-04 3E-STL-74C-09-100-05 3E-STL-74C-09-100-06 3E-STL-74C-09-110-07 3E-STL-74C-09-120-08 3E-STL-74C-09-140-09 3E-SCL-72A-14-140-15 3E-SCL-72A-14-140-17 3E-SCL-72A-14-140-19 3E-SCL-72A-14-140-19 3E-SCL-72A-14-140-19	067993 067993 067993 066658 066658 066658 066658 066659 066659 066659 066659 066659 066659	12 1+R5 20 2/3-1-2000
HALOPHANE UPS	71.47%	
3EQBN0001 3EQBN0002 3EQBN0003 3EQBN0004 EXIDE UPS	538 5099 102 07 w/o -	
BEQDNFOIZ PICKONG		e Lle
3EQDNF01 } PICK ONG	054994 411 964	2 de le 3 = 25 = 2/27
3EQDNF01 2 PICK ON B 3EQDNF02 3 PICK ON B	05,000	5001 .1.2
	054994 411 9 6 4 055803 464115 055836	5001 .1.2
DUAL LITE  3E-SAL-71C-03-100-06 3E-SAL-71C-01-140-06 3E-SJL-D79-02-074-10 3E-SJL-D79-02-074-07 3E-SGL-D79-05-100-06 3E-STL-74C-07-100-03 3E-SAL-72D-03-120-12 3E-SJL-D79-02-074-08 3E-SJL-D79-04-100-10	055803 404115 055836 068121 404135 055836	3/1
DUAL LITE  3E-SAL-71C-03-100-06 3E-SAL-71C-01-140-06 3E-SJL-D79-02-074-10 3E-SJL-D79-02-074-07 3E-SGL-D79-05-100-06 3E-STL-74C-07-100-03 3E-SAL-72D-03-120-12 3E-SJL-D79-02-074-08	054994 411 964 055803 404115 055836 068121 404135	3/1

# LIGHTS/UPS REQUIRING TESTING

# EQUIPMENT NUMBER

### TASK NUMBER

EMERGI-LITE (DCP QD				F.A
-E 677 747 00 100 01	TASK	W.O. P	SCHED.	
ZE-STL-74C-09-100-01	066809	4/1982	2-28-90	3/1125
2E-STL-74C-09-100-02				
2E-STL-74C-09-100-03				
2E-STL-74C-09-100-04				
2E-STL-74C-09-100-05	J			
2E-STL-74C-09-090-06	V	4		
2E-STL-74C-09-110-07 C. mpicie	066810	4/198/		AND THE RESIDENCE OF THE PARTY
2E-STL-74C-09-130-08 > 5 + 2/2/9	1			-
2E-STL-74C-09-140-09	4	V	¥	
2E-SCL-72A-14-140-15	066808	406747	2-23-90	FAILED, Replace / RETEST NO 411517 2-27-90 2
2E-SCL-72A-14-140-16			1	FALCO RETES LO 408433 3/2/90 ?
2E-SCL-72A-14-140-17		1 1 1 1 1 1		FAILED ROBT W1408537 3/2/92
2E-SCL-72A-14-140-18				
2E-SCL-72A-14-140-19				FAILED Replace / Retreat W0 411551 2-27-90 2
2E-SCL-72A-14-140-20	¥	¥	V	Faled Probac/ Retail WO 41549 2-27-90
HALOPHANE UPS				
2EQBN0001 )	44902	64/m 24 A	7-/-20	es / an *
ZEQBNOOD SpickenE	44918	4/2,340	5.6.50	3/= >.
2EQBN0003				
ZEQBN0004	44919			
EXIDE UPS	177269			
ZEQDNF01 & PICK CH	54993			
2EQDNF02	58/69	4/2339	3-15-90	3107
DUAL LITE				
ZESAL71001-140-11	055631	412336	3-8-90	2/1
2E SAL 71C 41-140-12	105563/	4/2336	3-8-90	
2E-SAL-71C-01-140-06	055631	4/2934	3-8-90	V
2E-SJL-D79-02-074-02	055655	412337	3-9-90	3/
2E-SJL-D79-02-074-07	055655	4/2337	1.9.90	·
28-SAL-71C-61-140-14	055631	4/2 336	3-8-90	2/:
2E-STL-74C-07-100-03	065580	4/2338	3-7-90	7/1
2E-SAL-72D-03-120-23	055631	912336	profes interestablished	9/5
2E-SAL-72D-03-120-12	055631	4/2376		3/2
2E-SJL-D79-02-074-08	055655	4/2 337	to the same to consider the same	2/3
2E-SAL-7/C-07-150-04	05563!	412336	and the second of the second	* / 1
2E-STL-74C-07-100-05	065580	42338	3-7-90	3/ 1
2E-5AL-72D-03-120-18	055631	9/2336	CANCELLO CONTRACTOR OF THE PARTY OF THE PART	
2E SAL-720-03-120-24	055631	4/2336	3-8-90	2/3
26 SAL-72D-07-120-01	055631	412336	3-8-901	Y
2E-SIL-D79-02-074-09	055655	4/2337	3-9-90	3/13
76-551-079-04-080-08	095655	42337	3-9-90	2113
28-376-740-07-100-02	065580	42338	3-7-90	3/3/201
26.576-740-7-100-04	065580	47.358	3-7-90	3/4 1/4
18-576-749-05-100-05	1065580	4/7 22 0	2. 7. 20	1 14 1 1

				3.000
FIGHT MUMBER	TYPE OF LIGHT	LOCATION OF LIGHT	APPENDIX 'R' DESIGN COMMENTS	CURRENT WORK STATUS
1ESAL72#040511	O DUAL-LITE BAT PACK	51' AUXILARY BUILDING		
189AL72A040511	1 DUAL-LITE BAT PACK	51 AUXILARY BUILDING	1FE-9D-C23	WR 547552
1E54L71A010700	5 BUAL-LITE BAT PACK	70' AUXILARY BUILDING		KR 540556
1ESAL71A010701	1 DUAL-LITE BAT PACK	70 AUXILARY BUILDING		
1ESAL71A0107011	2 DUT - LITE BAT PACK	70' AUXILARY BUILDING		
1£841*14010701	3 DUAL-LITE BAT PACE	70 AUTILARY BUILDING		
156417140107014	4 DUAL-LITE BAT PACE	70 AUTILARY BUILDING		
1E3AL71A0107015	S DUAL-LITE BAT PACK	70" AUTILARY BUILDING		
1884L710507001	DUAL-LITE BAT PACK	TO AUTILARY BUILDING		
1894,7540507006	SUAL-LITE BAT PACK	70' AUXILARY BUILDING	1EE-90-023	MR 543552
188417240007015	DUAL-LITE BAT PACK	70' AUTILARY BUILDING	148-90-023	WR 543552
1E34L7240307016	DUAL-LITE BAT FACK	70' AUXILARY BUILDING	1FE-91-023	WR 543552
155AL7240407007	DUAL-LITS BAT PACK	70 AUXILARY BUILDING		
1564,7140107701	DUAL-LITE BAT PACK	77' AUTILARY BUILDING		WR 540558
168427140107702	DUAL-LITE BAT PACK	77 AUTILARY BUILDING		
1E9A,71A0107719	DUAL-LITE BAT PACK	- 77' AUXILARY PUILDING	[FE-95+027	MR 543552
1680,7100707701	DUAL-LITE BAT PACK	77' AUXILARY BUILDING		
1ESA,72A0307701	DUAL-LITE BAT PACK	77 AUXILARY BUILDING		
1534L71402077708	DUAL-LITT BAT PACE	17 AUTILARY BUILDING		
1664L72A07077769	DURL-LITE BAT PACE	77' AUXILIARY BUILDING		
1E1+L72A:307°10	DUAL-LINE BAT PACE	77' AUXILARY BUILDING		
189417200707707	DUAL-LITE BAT FACE	77 AUXICARY BUILDING	171-11-121	WR 543552
145AL7200707798	DUAL-LITE BAT FACE	77' AUXILARY BUILDING	174-91-021	WR 543552
163417100708707	DUAL-LITE BAT PACK	87 AUXILARY BUILDING		
1ESAL72007.8701	DUAL-LITE BAT FACK	87 AUXILARY BUILDING		
18841714010881)	DUAL F. "TE BAT FACE	88' AUXILARY BUILDING		
165517140108816	DUALHUITE BAT PACK	88' AUXILARY BUILDING		
1ESAL7140108817	DUAL-LITE BAT FACK	88. AUTILARY BUILDING		
168417240308812	SUAL-LITE BAT PACK	BE AUTILARY BUILDING	1FE-00-023	FR 543552
1554L72C0709606	DUAL-LITE BAT PACK	69. AUXILARY BUILDING		
1ESAL7100310005	DUAL-LITE BAT PACK	100' AUXILARY BUILDING		
1ESAL71C0310006	DUAL-LITE BAT PACK	100' AUXILARY BUILDIF.	176-80-0.3	R 543552
1ESAL7100310007	DUAL-LITE BAT PACK	100' AUTILARY BUILDING		
1ESAL7100310008	DUAL-LITE BAT PACK	100' AUXILARY BUILDING		

GHT NUMBER	TYP! OF . 3#7	LOCATION OF LIGHT	APPENDIT 'R' DESIGN COMMENTS	CURRENT WORK STATUS
:AL72A0610007	DUAL-LITE 4-" -400	100' AUTILARY BUILDING		
AL7200310001	DUAL-LITE 14-" #4CE	100 AUTICARY SUILDING		
3407220310002	DUAL-LITE 14- 4404	100 AUXILARY BUILDING		
3417200310003	1044 - 111 - 4401	100 AUTILARY BUILDING		EM 543558
1AL720310006	DUAL-LI*E 4-" :ACT	100 AUXTLARY BUILDING		
54L71C0711002	DUAL-LIME 1- FACE	TIO AUTILARY BUILDING		
\$AL7200711002	DUAL-LITE - FACE	110 AUXILARY BUILDING		
9aL72D0312001	QUAL-LITE - 14CE	120 AUXILARY SUILDING		
34L72D0312002	MUAL-LITE B-" FACK	120 AUXILARY BUTLDING		
9AL7250312005	DUAL-LITE - " " FET	120 AUXILARY BUILDING		
[SAL72D6312907	DUAL-LITE B- TEACH	TID WARTERAY FORESTAR		
3AL72003.2008	DUAL -LI*E 3- * 4 SCK	100 AUTILARY BUILDING		
DEAL 7200312009	DUAL-FILE 3- , tack	120 AUSTLARY BUILDING		
ISAL7200312011	DUAL-LITE on TACK	120. WOXITHEL BOILDING		
_ 18AL72DC312012	DUAL-CITE 3- " FACE	120 AUXILARY BUILDING	11(-24-02)	WR 543552
ESAL7200312017	DUAL-LINE BUT FACE	120 AUXILARY RUILDING		WR 543559
ESAL - 200312018	DUAL-L1", 5-" FACK	120 AUXILARY RUILDING	186-02-020	#R 540552 & 556
ESAL7200312019	DUAL-LITE E- PACE	120' AUXILARY BUILDING		
ESAL7200312020	DUAL-LITE 3- FACE	120 Auticast Building		
2 SAL 7230512021	DUAL-LITS 5-1 3404	120 AUTILARY PUBLISH		WR 542555
SSAL 7200313022	DUAL-LITE 3- " +4C1	120 AUKILARY BUILDINA		
ESAL7200312023	DUAL-LITE EXT PACE	150, Whileark Boilbing	1FE-91-025	48 545511
ESAL7200012024		Tau. Whiles and Take		
ESAL7100713003		100 AUTICARY BUILDING		AE 543358
ESAL7700713003		110, Whilest Aniroles		4R 543556
188AL7120114001		CAG AUXILARY BUTTOINS		*F 547556
JESAL7100114006		140 AUXILARY 50 15	1FE-91-011	WR 547517 A 558
115AL7100114007		140. AUCICARY BUILDING		a rate
169AL71C0114009		140. AUXILARY BUILDING		WR 543518
185AL71C0114011		140. WILLIAMA BUILDING		
1ESAL71C0114012		140, AUXILARY BUILDING		WD 617661
1ESAL71C0114013		.40' AUXILARY BUILDING		WR 543556
1ESAL71C0114014		140' AUXILARY BUILDING		
1ESAL71C011401	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		

LIGHT MUMBER	TYPE OF LIGHT	LOCATION OF LIGHT	APPENDIX 'R' DESIGN COMMENTS	CHESTUT MADE CTATUR
			PERSONAL PROPERTY PROPERTY	CURRENT MUNK STRIUS
1ESAL710011401		140, Whilest Boilding		MR 343559
1EDAL 71C011401		140. MAINTARA BAITDINE		WR 543558
1ESAL71C0114016		TWO, WORTHWAY BRITDING		WR 343558
1E8AL77C0114007		140, WALIFARA BATEDING		
165AL72C0114006		TWO WOLLTERA BRITDING		
1ESAL7200114010		140 AUTILARY EUILDING		WE 040056
185AL72C0114011		140 AUXILARY BUILDING		
1ESAL7200114012		140 AUTILARY BUILDING		
165AL7100715004		(50 AUSTLARY SUILDING		49 541555
1E03N001	HALS HANE INVERTER	100 CONTROL BUILDING	101-90-009 # 1F8-90-023	AC 189825
1879N002	HALOPHONE INVERTER	100 CONTROL BUILDING	101-70-004 4 141-00-721	#0 I48770
1E0#7002	HALDPHANE INVERTER	120. WATPARA BOTTOTAR	106-30-009 & 1F6-30-021	
JEGBNOO4	HALOPHANE INVERTER	12- ACTI ARY BUILDING	107-90-909	WO 391762
1ESCL72A140B101	DOAL-LITE BAT PACE	81 *\$65 BV1.11NB		
JESCL77A1408102	DUAL-LITE PAT PACE	BI MESS BUILDING		
1KBC172614/8111	DUAL-LITE BAT RACK	81 *SSS BUILDING		
DESCL72A1408112	DUAL-LITE DAT PACK	BI WEEE BUILDING		
1ESCL7241412005	DUAL-LITE BAT FACE	120 *FEE BUILDING		
16SCL77A1412005	DUAL-LITE PAT PACK	120 WESS BUILDING		
1ESCL7241412013	DUAL-LITE BAT PACK	120: MESS BUILDING		
1EFCL72A1412014	DUAL-LITE BAT FACE	120 *555 FOILDING		
1ESCL72A1414015	EMERSI-LITE BAT PACK	140 MSSE BUILDING	1FE-51-02?	
JESCL72A1414016	EMERGIALITE BAT FACE	1401 MESS PULLDING	1FE-40-012	
1ESCL72A1414017	EMERBI-LITE BAT PAGE	140 *ESS BUILDING	17E-90-022	
188C172A1414018	EMERBIALITE BAT PACK	141 MSES BUILDING	1-90-022	
1ESCL/2A1414019	EMERBI-LITE BAT FACK	140° *535 BUILDING	IFE-20-022	
16SC172A1414020	EMERBI-LINE BAT FACE	140. 4080 BUILDING	155-30-022	
1E9DNF01	EXIDE BATTERY PACT	100 CONTROL BUILDING		
1EGDNF02	EXIDE BATTERY PACE	100 CONTROL BUILDING		
1EGDNN01	EXIDE INVERTER	140 CONTROL BUILDING		
1E3DNN02	EXIDE INVERTER	140' CONTROL PUILDING		
1ES6LD790510002	DUAL-LITE BAT PACK	100. DIESEF BAITDING	1FE-00-023	WR 543552
163810790510003	DUAL-LITE BAT FACK	100. DIESET BRITDING		
1ESBLB790510005	DUAL-LITE BAT PACK	100. DIESET BAITDING	1FE-00-023	VR 543552

LIGHT MUMBER	TYPE OF LIGHT	LOCATION OF LIGHT	APPENDIX 'R' DESIGN COMMENTS	CURRENT WORK STATUS
165613790510006	DUAL-LITE BAT PACK	100 DIESEL BUILDING	1FE-00-025	WR 543552
1ESGLD790510007	DUAL-LITE BAT FACK	100 DIESEL BUILDING	156-00-053	WR 543552
1ESSLD800511507	DUAL-LITE BAT PACK	100 DIESEL BUILDING		
1ESJLD790207402	DUAL-LITE PAT PACK	74 CONTROL BUILDING	151-30-023	NR 543552
189310790207407	DUAL-LITE BAT PACK	74 CONTROL BUILDING	155-00-023	MK 540552
168310790207408	DUAL-LITE BAT PACK	74 CONTROL BUILDING	(FE-00+027	WF 541552
155010790207409	DUAL-LITE BAT PACK	74' CONTROL BUILDING		
185360790207410	DUAL-LITE RAT PACK	74 CONTROL BUILDING	195-00-020	WR 547552
155313290407410	DUAL-LITE BAT POOR	14. CONTROL BUILDING	$\ f\ _{\infty}^{2} = \ g\ _{\infty}^{2} = 0 \overset{\mathrm{e. }h}{\underset{n \to \infty}{\sim}}$	#R \$40550
168310790408008	DUAL-LITE BAT PACK	BO CONTROL BUILDING		
185010790210000	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
185210790710004	DUAL-LITE BAT PACK	INC CONTROL BUILDING		
18300790210005	DUAL-LITE BAT PACK	100. CON, KOT FRITDING	115-60-025	NR 543552
1ESJL0790710007	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
1E5JL0790410004	DUML-LITE BAT FACE	100 CONTROL BUILDING		
1ESJL D790410006	DUAL-LITE BAT PACK	109 CONTROL BUILDING		
1ESJL0790410007	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
185310790410009	DUAL-LITE BAT FACE	100 CONTROL BUILDING		
1EBSLD790410010	DUAL-LITE SAT PACK	- 100 CONTROL BUILDING		WR 540556
1ESJLD800210003	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
169312800210004	DUAL-LITE BAT PACK	184' CONTROL POILDING	188-00-017	48 547552
165310890210010	DUAL-LITE BAT PACK	100' CONTROL BUILDING		
1150.0801010000	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
163010810510001	BUAL-LITE BAT PACK	100 CONTROL BUILDING		
165000841810001	DUAL-LITE BAT FACK	100 CONTROL RUILDING		
1ESJLD791011001	DUAL-LITE BAT PACE	110 CONTROL BUILDING		
1630/10601011003	DUALITE BAT PACK	110 COMPRO BUILDING		
16331.0791013002	DUAL-LITE BAT PACK	130' CONTROL BUILDING		
188710801013004	DUAL-LITE BAT PACK	130. CONTROL BUILDING		
163315800714007	DUAL-FIZE BAT PACK	140. CONTROL BUILDING		
168010800714008	DUAL-LITE BAT PACK	140' COLTROL BUILDING		WR 513556
-1ESJLD800714011	DUAL-LITE BAT PACK	140' CONTROL BUILDING		MR 543556
1653.080071401	PUAL-LITE BAT PACE	140' CONTROL BUILDING		
1ESJL5811814001	1 DUAL-LITE BAT PACK	140' CONTROL BUILDING		

LIGHT NUMBER	TYPE OF LIGHT	LOCATION OF LISHT	APPENDIE "R" DESIGN COMMENTS	CURRENT WORK STATUS
16677561181400	2 DUAL-LITE BAT PACK	140' CONTROL BUILDING		
1ESJLD81181400	3 DUAL-LITE BAT PACK	140 CONTROL BUILDING		
1853081181400	6 - TUAL-LITE BAT FACK	140' CONTROL BUILDING		
1650,094191400	DUAL-LITE BAT FACK	140 CONTROL PULLDING		
15831084181400	6 DUALHESTE BAT PACK	140 CONTROL BUILDING		
188710941814009	B DEAL-LITE BAT FACE	140 CONTROL BUILDING		
155310741015003	S SUAL-LIST BAT PACK	150' CONTROL BUILDING		
168117400909000	EMERSI-LITE BAT PACK	90 MSSS	476-92-922	
183*L74A0519001	DUAL-LITE BAT PACK	100' TURBINE	144460	¥4 \$40550
163117400716063	COAL-LITE BAT FACE	100 TURBINE	\$\$\$-20-025	VR 540552
1897,7400710003	DUAL-117E BAT PACK	100' TURBINE	(FE-9)=(2)	WR 343552
1557174007;0004	DUAL-LITE BAT FACK	100 TUPRINE	188-01-025	wR 543552
169167400710005	DUAL-LITE BAT PACK	100 TURFINE	175-01-125	WR 543552
1ES1L74C0910001	EMERBI-LITE BAT PACK	100 TURFINE	161-10-022	WR 543552
1587L7400910000	EMEREL-LITE BAT PACK	1 0' Tukking	1F3+01+027	NR 540552
165717400910003	EMERBI-LITE PAT FACE	100 TURPINE	1FE-90-022	MR \$47552
165717400910004	CHERES-LITE BAT (AC)	100' TUFFINE	1FE-02+022	
168717400910035	EMERGIALITE BAT BACK	100' TURBINE	1FE-20-003	
168717400910007	EMERSIALITE BAT PACK	1:0 TURBINE	1FE-9D+023	
163717400911007	EMERBIRLITE BAT PACK	1167 #585 (814785)	186+35 + 150	
188117400913008	EMERBIALITE BAT PACK	100 MSSS (874125)	176-30-000	
165717400914009	EMERBI-LITE BAT PACK	140" MS25 (51A1A5)	1FE-04-022	
TERANGZEICTOROG	DUAL-LITE BAT PACK	100. CONDENSATE LEANSEER	1/1-0-21	CALEINAL
163100365010009	- DUAL-LITE BAT FACE	1901 CONDENSATE TRANSFER	ORISINAL .	
7ESAL72A0405110	DUAL-LITE BAT RACK	pl. MONITORA BUILDING		
255AL72A04 5111	DUAL-LITE BAT FACK	it, whileas solibles		
115AL71A0107003	DUAL-LITE BAT PACK	WAXIFAMA MOSFOLVS		
2ESAL71A0157011	DUAL-LITE BAT FACK	76' AUXILARY BUILDING		
2554L7140107012	DUAL-LITE BAT PACK	70' AUXILARY BUILDING		
TESAL7146167017	DUAL-LITE BAT FACE	70' AUXILPRY 13' 143		
265AL71A0107014	DUAL-LITE BAT PACK	70' AUXILARY BUILDING		
2ESAL71A0107015	DUAL LITE BAT FACK	70' AUXILARY BUILDING		
285AL72AG3C70G2	DUAL-LITE BAT PACK	70' AUXILARY BUILDING		
ZESAL72A0307008	DUAL-LITE BAT PACE	70' AUXILARY BUILDING		

LIGHT NUMBER TYPE OF LIGHT	LOCATION OF LIGHT	APPENDIX 'R' DESIGN COMMENTS	CURRENT WORK STATUS
DESHL72AC30/015 DUAL-LITE BAT PACK	70' AUXILARY BUILDING	2FE-90-023	
ZESAL72A0307016 DURL-LITE BAT FACK	7" - LARY BUTLOING	256 -021	
2ESAL72404J7007 DUAL-LITE BAT PACK	77 A KILARY BUILDING		
ZESALTIADITATOI DUAL-LITE BAT PACK	7/ AUTILARY BUILDING		
ZECALTIA0107702 DUAL-LITE BAT PACK	77 AUXILARY BUILDING		
SESAL7100707701 DUAL-LITE BAT PACK	77 AUXILARY BUILDING		
DESALTZK. "7701 - DJAL-LITE BAT PACK	77' AUXILARY BUILDING		
DESPLICATION TO THE SAT PACK	77' AUXILARY BUILDING		
185417240307709 DUAL-LITE BAT PACK	77' ACXILARY BUILDING		
265AL72A0307710 DUAL-LITE BAT FACE	77' AUXILARY BUILLING		
DESAL72007077 7 DUAL-LITE BOT PACK	77 AUXILARY BUILDING		
ZESAL7200703708 BUAL-LITE BAT PACK	77' AUTILARY BUILDING		
285AL71C0708707 DUGL-LITE BAT FACK	87' AUXILARY BUILDING		
DESAL720708701 DUAL-LITE BAT PACK	A AUXILARY BU THE		
CCSALTIA0108810 DUAL-LITE PAT FACK	38" AUXILARY 12.5752		
ISAL71A01-0910 DUAL-LITE BET PACE	88' AUXILARY BULLDING		
Two	88 AUXILARY BUILDING		
26341734 JBD18 DUP - 176 BAT PACK	88 AUTILARY BUILDING	200-00-00	
2894 TOACOGETT - DUAL-LITE DAT PACK	68' AUXILARY EUI_DING	276-30-023	
2ESAL72A0308813 DUAL-LITE PAT PACK	88' AUXILARY BUILDING	288-00-023	
2657,72007095/16 CUAL-LITE SAT PACK	S6 AUXILARY BUILDING		
2654) 7100310005 - BUAL-DITE R4T PACK	100' AUTILARY BUILDING		
CESAL 7100310006 DVAL-LITE BAT PACK	100 AUXILARY BUILDING	171-10-011	
2664L71C0310007 DUAL-LITE BAT PACK	100 AUXILARY BUILDING		
2ESAL7100310008 DUAL-LITE BAT PACK	100" AUTILARY BUILDING		
SESAL7200310001 NUAL-CITE BAT PACK	100 AUTILARY BUILDING		
255AL72C0310002 T.AL-LITE BAT FATA	100" AUXILAR" BUILDING		
255AL72C0310003 CUAL-LITE SAT PACK	100 AUTILARY BUILDING		
125AL72CO310005 DUAL-LIKE BAT PACK	100° AUXILARY RUILDING		
PERALTICOTIONS DUAL-LITE BAT PACK	110' AUXILARY BUILDING		
2654L72C0711002 DUAL-LITE BAT PACK	110' AUXILARY BUILDING		
2ESAL72C0312012 DUAL-LITE BAT PACK	120' AUXILARY BUILDING	2EE-00-053	
265AL72D0312001 DUAL-LITE BAT PACK	120' AUXILARY BUILDING		
2ESAL7200312002 DUAL-LITE BAT PACK	120' AUXILARY BUILDING		

LIGHT NUMBER	TYPE OF LIGHT	LOCATION OF LIGHT	APPENDIX 'R' DESIGN COMMENTS	CURRENT WORK STATUS
2ESAL720031205	DO DUAL-LITE BAT PACK	120 AUTILARY BUILDING		
2ESAL720031200	7 DUAL -LITE BAT PACK	120' AUXILARY BUILDING		
2ESAL720031200	8 QUAL-LITE BAT PACK	120' AUXILARY BUILDING		
2EBAL77D031200	9 DUAL-LITE BAT PACE	120 AUXILARY BUILDING		
265AL720031201	1 DUAL-LITE BAT PACK	120 AUTILARY PUILDING		
2ESAL725031201	2 DUAL-LITE BAT PACK	120 AUXILARY BUILDING	. c-90-013	
2E\$AL720031201	7 DUAL-LISE BAT FACK	120' AUXILARY BUILDING		
2ESAL720031201	9 DUAL-LITE BAT PACK	120 AUTILARY BUILDING	29.2-90-023	
2ESAL720031201	P DUAL-LITE BYT PACK	120 AUTILARY BUILDING		
2E3AL72D0.12020	DUAL-LITE BAT PACK	120 HUXILARY BUILDING		
269AC72D0312071	DUAL-LITE BAT PACK	120' AUXILARY BUILDING		
255AL7200312022	DUAL-LITE BAT FACE	120' AUTILARY BUILDING		
2ESAL7200312020	DUAL-LITE SAT PACK	120' AUXILARY BUILDING	25E-00-023	
2E5AL7200312024	DUAL -LITE BAT PACK	120" AUXIL/RY PUILDING	2FE-00-023	
2FSAL72D0212001	DUAL-LITE BAT PACK	120 AUTILARY BUILDING		
2ESAL7100713003	DUAL-LITE BAT PACK	130' AUXILARY BUILDING		
2ESAL7200713003	DUAL-LITE BAT PACK	130' AUXILARY BUILDING		
ZESAL7100114001	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		
2ESAL71C0114006	DUAL-LITE BAT PACK	140 AUTILARY BUILDING	2FE-GU-023	
285AL7100114007	DUAL-LITE BAT FACK	140' AUXILARY BUILDING		
2ESAL71C0114009	DUAL-LITE BAT PACK	140 AUXILARY BUILDING		
2ESAL71C0114011	DUAL-LITE BAT PACK	140' AUTILARY SUILDING		
2FSAU71C0114017	DUAL-LITE PAT PACK	140 AUTILARY BUILDING		
2 - 427100114013	DUAL-LITE BAT PACK	140 AUTILARY BUILDING		
285AL71,0114014	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		
2E34L71C0114015	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		
2ESAL7100114016	DUAL-LITE BAT PACK	140 AUXILARY BUILDING		
183AL71C0114017	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		
2ESAL710011401	SUAL-LITE PAT PACK	140' AUXILARY BUILDING		
ZESAL72C0114002	DUAL-LITE BAT PACK	140' AUTILARY BUILDING		
2ESAL72C0114006	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		
2ESAL72C0114010	DUAL-LITE BAT PACK	140 AUXILARY SUILDING		
2ESAL72C0114011	DUAL-LITE BAT PACK	140' AUXILARY BUILDING	*	
2ESAL72C0114012	DUAL-LITE BAT PACK	140' AUTILARY BUILDING		

LIGHT NUMBER	YYPE OF LIGHT	LOCATION OF LIGHT	APPENDIX 'R' DESIGN COMMENTS	CURRENT WORK STATUS
2E54L71C0715004	DUAL-LITE BAT PACK	150 AUXILARY BUILDING		
ZEOBNOO!	HALOPHANE INVESTER	100 CONTROL BUILDING	208-00-009	
2EGBN002	HALOPHANE INVENTER	100 CONTROL BUILDING	205-50-009	WD 410198/046029
SEGBNOOS	HALDEHANE INVESTER	120 AUXILARY BUILDING	201-90-004	
CEGRNOC4	HALOPHANE INVERTER	1 AUTILARY BUILDING	201-02-009	
2ESCU77A1408101	DUAL-LITE FAT PACK	B1 MISS BUILDING		
2ESCL72A1408102	QUAL-LITE BAT PACK	81 MSSS PUTLDING		
2ESUL72A1408111	DUAL-LITE BAT PACK	81. W888 ENITOTING		
2ESCL?2A1408112	DUAL-LITE BAT PACK	81, WESS BRICDINS		
2E5CL72A1412005	DUAL-LITE BAT PAGE	120 MSSS BUILDING		
2ESCL72A1412006	DUAL-LITE BAT PACE	100 M835 RUILDING		
2E5CL72A1412013	DUAL-LITE BAT FACE	120 MSSS BUILDING		
ZESCL72A1412014	DUAL-LITE BAT PACK	120 MSSS BUILDING		
2ESCL72A1414015	IMERGI-LITE BAT PACK	140 MSSS BUILDING	2FE-00-022	40 411517
2E50L72A1414016	EMERRI-LITE BAT PACK	140 MSSS BUILDING	256-00-022	k3 408933
2ESCL72A1414017	EMERGI-LITE BOT FACE	140 MSSS BUILDING	266-80-020	WD 408937
2ESCL72A1414018	EMPTG1+011E BAT PACK	140° Mars SWILDING	256-32-022	WARPPED FO BOARD
2690L704141. 15	EMERGI-LITE BAT PACK	1/3 MESS BUILDING	2FE-90-022	W0 411551
2ESCL72A1414020	EMERGI-LITE BAT FACE	140" MESS BUILTING	255-00-22	WO 411549
ZEQDNF01	F OF THISBY PACE	100 CONTROL BUILDING		
2EGDNF02	EXIDE BATTERY FACE	100 CONTROL BUILDING		
DE TONNO1	EXIOE INVESTER	(4) CONTROL BUILDING		
28 30 NN02	EXICE INVESTER	140 CONTROL BUILDING		
215310790510000	DUAL-LITE BAT PACK	100 DIESEL BUILDINS		
269810790510003	DUAL-LITE SAT FACK	100 DIESEL BUILDING		
255510770510005	DUAL-LITE BAT PACK	100 DIESEL BUILDING		
2ESGL 0790510006	DUAL-LITE BAT PACK	ino piesel Bullotas	2FE-GD-023	
2659LB790510007	DUAL-LITE BAT PACK	100 DIESEL BUILDING		
2ESSL0800511507	DUAL-LITE BAT PACK	115. DIESET SAIFDING		
255JLD790207402	DUAL-LITE BAT PACK	74' CONTROL BUILDING		
265JLD790207407	DUAL-LITE BAT PACK	74' CONTROL DUILDING		
2ESJLD790207408	DUAL-LITE BAT PACK	74' CONTROL BUILDING	2FE-00-023	
2ESJLD790207409	QUAL-LITE BAT PACK	74' CONTROL BUILDING		
7E5JLD790408008	DUAL-LITE BAT PACK	80. CONTROL BUIL ING		WR 543555

LIGHT NUMBER	TYPE OF LIGHT	LOCATION OF LIGHT	APPENDIT 'R DESIGN COMMENTS	CURRENT WORK STATUS
2ESJLD790210003	QUAL-LITE BAT PACK	100 CONTROL BUILDING		
2ESJL0790210004	DUAL-LITE BAT PACK	100' CONTROL BUILDING		
285JLD790210005	DUAL-LITE BAT PACK	100 CONTROL BUILDING	2FE-9D-023	
265JLD790210007	DUAL-LITE BAT PACK	1001 CONTROL BUILDING	2FE-GD-023	
285310790410006	DUAL-LITE BAT PACK	100 CONTROL BUILDING	2FE-GD-023	
2E3JL0795410007	JUAL-LITE BAT PACK	100 CONTROL BUILDING	255-00-023	
2ESJLD790410009	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
2ESJLD790410010	DUAL-LITE BAT PACK	100 CONTROL BUILDING	268-90-023	
268310800210003	DUAL-LITE BAT PACK	100 CONTROL HULDING		
25310500210004	DUAL-LITE BAT PACK	100' CONTROL EUTLOINS	2FE-90-023	
2ESJLDB00210010	DUAL-LITE BAT PACE	100 CONTROL BUILDING		
2ESJLD801010002	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
2ESJLD801010020	DUAL-LITE BAT PACK	100' CONTROL BUILDINS		
2E5JLD810510001	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
2E5JLD841810001	DUAL-LITE BAT FACK	100' CONTROL PUILDING		
2ESJLDS41810003	DUAL-LITE SAT PACK	100 CONTROL BUILDING		
2ESJLD791011001	DUAL-LITE BAT FACK	110 CONTROL BUILDING		
25310500111003	DUAL-LITE BAT PACK	110 CONTROL BUILDING		
265 18791012000	DUAL-LITE BAT FACK	130' CONTROL BUILDING		
2ESJLD800112004	DUAL-LITE BAT FACK	150 CONTROL BUILDING		
2ESJL0800714007	DUAL-LITE BAT PACK	140 CONTROL BUILDING		
255JU0800714008	DUAL-LITE BAT PACK	140 CONTROL BUILDING		
283/108/07/14011	DUAL-LITE BAT PACK	140' CONTROL BUILDING		
255010800714012	DUAL-LITE BAT PACK	140' CONTROL BUTLDING		
2639-0811814001	DUAL-LITE BAT FACK	140 CONTROL BUILDING		
295JLD811814002	DUAL-LITE BAT FACK	140 CONTROL PUILDING		
[:5][0841814003	CUAL-LINE BAT PACK	140 CONTROL BUILDING		
255010841814006	DUAL-LITE BAT PACK	140' CONTROL BUILDING		
265JLD841814008	DUAL-LITE BAT PACK	140 CONTROL BUILDING		
2ESJLD841814011	DUAL-LITE BAT PACK	140 CONTROL BUILDING		
2ESTL74C0909008	EMERGI-LITE BAT PACK	90" MSSS	2FE-00-022	
2ESTL74A0510002	DUAL-LITE TOT PACK	100' CONTROL BUILDING	2FE-0D-023	
2ESTL74C0/10002	DUAL-LITE BAT PACK	100' CONTROL BUILDING	2FE-9D-023	
2ESTL74C0710003	DUAL-LITE BAT PACK	100 CONTROL BUILDING	2FE-QD-023	

LISH? NUMBER	TYPE OF LIGHT	LUCATION OF LIGHT	APPENDIX 'R' DESIGN COMMENTS CURRENT WORK STATUS
255717400710004	DUAL-LITE BAT PACK	100' CONTROL BUILDING	2FE-0D-023
2ESTL74C0710005	DUAL-LITE BAT PACK	100' CONTROL BUILDING	2FE-90-023
2ESTL74C0910001	EMERSI-LITE BAT PACE	100 TURKINE	2FE-9D-022
285717400910002	EMERSI-LITE BAT PACK	100 TURBINE	2FE-9D-022
ZESTL74C0910003	EMERSI-LITE BAT PACK	100' TURBINE	258-90-922
2ESTL74C0910004	EMERSI-LITE BAT PACK	100 TURBINE	2FE-00-012
2551174009:0005	EMERFI-LITE BAT PACY	100 TURBINE	266-60-022
2E37L74C0910007	EMERGI-LITE BAT FACE	1001 TURFINE	2FE-8D-020
285717400911007	EMERG]-(178	110' MSSS (STAIRS)	2FE-GD-022
2ESTL74C0913009	EMERGI-LITE	130 MSSS (STAIRS)	2FE-92-022
2ESTL74C0914009	EMERGI-LITE	140 MS95 (87A1RS)	2FE-9D-022
2ESYU03E2010005	DUAL-LITE BAT PACK	100" CONDENSATE TRANSFER	CRISINAL
ZESYU0722010006	DUAL-LITE BAT FACK	100' CONDENSATE TRANSFER	CRISINAL
3ESAL72A0405159	DUAL-LITE BAT PACK	51 AUXILARY BUILDING	
3E\$AL72A0405111	DUAL-LITE BAT FACK	51' AUXILARY BUILDING	
3E3AL71A0107005	DUAL-LITE BAT PACK	70 AUXILARY BUILDING	
3E5AL71A0107011	DUAL-LITE BAT PACK	70' AUTILARY BUILDING	
JES4L7140107012	DUAL-LITE BAT PACK	70' AUXILARY BUILDING	
J854L71A0107013	DUAL-LITE BAT PACK	70' AUXILARY BUILDING	
3ESAL71A0107014	DUAL-LITE BAT FACK	70' AUXILARY BUILDINS	
3884171A0107015	DUAL - 17E BAT PACK	70 AUXILARY BUILDING	
3ESAL72A0307001	DUPL-LITE BAT PACK	AUXILARY BUILGINS	
3484L72A03076-4	DUAL-LITE PAT PACK	TO AUXILARY BUILDING	3FE-30- 2T
3E3AL 72A0307015	- DUAL-LITE BAT PACE	70 AUXILARY SUILDING	3FE-90-022
388AL72A0307016	DUAL-LITE BAT PACK	70' AUXILARY BUILDING	JFE-SI-023
3854L72A0407007	DUAL-LITE BAT PACK	70' AUXILARY BUILDING	
3ESAL71A0107701	DUATHLITE DAT PACK	77 AUXILARY PUILDING	
3584.71A0107702	DUAL-LITE BAT PACK	77' AUXILIARY BUILDING	
3ESAL71A0107709	CUAL-LITE BAT PACK	77" AUXILARY BUILDING	
3E3AL71C0707701	DUAL-LITE BAT PACK	77 AUXILARY BUILTING	
3ESAL7240307701	DUAL-LITE BAT PACK	77 AUXILARY BUILDING	
3ESAL72A0307708	DUAL-LITE BAT PACK	/7" AUXILAKY BUILDING	
3E5AL72A0307709	DUAL-LITE BAT PACK	77' AUXILARY BUILDING	
3E9AL72A0307710	DUAL-LITE BAT PACK	77' AUXILARY BUILDING	() : [ - 1 ] [

LIC NUMBER	TYPE OF LIGHT	LOCATION CO LIGHT	APPENDIX 'R' DESIGN COMMENTS	CURRENT MORE STATUS
3E5AL72C0707707	DUAL-LITE BAT PACK	77' AUXILARY BUILDING	3FE-00-023	
3ESAL72C0707708	DUAL-LITE BAT PACK	77' AUXI' ARY BUILDING	3FE-00-023	
3ESAL7100708707	DUAL-LITE BAT PACK	87 AUXILARY BUILDING		
3ESAL7200708701	DUAL-LITE BAT PACK	87 AUXILARY BUILDING		
JESAL7140108816	DUAL-LITE BAT PACE	PG' AUXILARY BUILDING		
JESAL71A0108817	DUAL-LITE BAT PACE	d8 AUXILARY BUILDING		
3E5AL71A0108818	QUAL-LITE BAT PACK	88 AUXILARY BUILDING	3FE-0D-023	
3ESAL71A0308801	DUAL-LITE BAT PACK	SB' AUXILARY BUILDING		
DESAL 72A0308812	DUAL-LITE BAT PACK	98 AUXILARY BUILDING	3FE-90-020	
3ESAL72A0308813	DUAL-LITE BAT PACK	88' AUXILARY BUILDING	3FE-90-023	
388AL7100709606	DUAL-LITE BAT PACK	96 AUXILARY BUILDING		
389AL72C0709606	DUAL-LITE BAT PACK	96 AUXILARY BUILDING		
3ESAL71C0310005	DUAL-LITE BAT PACK	100 AUXILARY BUILDING		
3ESAL7100310006	DUAL-LITE BAT PACE	100 AUTILARY BUILDING	3FE-00-023	
3E5AL71C031GU67	DUAL-LITE BAT PACK	100 AUXILARY BUILDING		
3ESAL71C0310008	DUAL-LITE BAT PACK	100 AUXILARY BUILDING		
3ESAL72A0610007	DUAL-LITE BAT PACK	100' AUXILARY BUILDING		
JESAL7200310001	DUAL-LITE BAT PACK	100' ACTILARY BUILDING		
3ESAL7200310003	DUAL-LITE BAT PACK	100. MAXIFRUA BAIFDING		
3ESAL72C0310003	SUAL-LITE BAT PACK	100' AUXILARY BUILDING		MO 404114
3EBAL720310006	DUAL-LITE BAT PACK	100' AUXILARY BUILDING		
385AL7100711002	DUAL-LITE BAT PACK	110' AUXII ARY BUILDING		
3ESAL7200711002	DUAL-LITE BAT PACK	110' AUXILARY BUILDING		
JESAL7200312001	DUAL-LITE BAT PACK	120' AUTILIARY BUILLING		
3ESAL72D0312002	DUAL-LITE BAT PACK	120' AUXILARY BUILDING		
3ESAL72003:2005	DUAL-LITE BAT RACK	110' AUXILARY BUILDING		
3E9AL72D0312007	DUAL-LITE BAT PACK	120" AUXILARY BUILDING		
3ESAL7200312008	DUAL-LITE BAT FACK	120" AUXILARY BUILDING		
3ESAL1290312009	DUAL-LITE BAT PACK	120' AUXILARY BUILDING		
3E3AL72D0312011	DUAL-LITE BAT PACK	120' AUXILARY BUILDING		
3E5AL7200312012	DUAL-LITE BAT PACK	120' AUTILARY BUILDING	3FE-00-023	
3ESAL,7200312017	DUAL-LITE BAT PACK	120' AUXILARY BUILDING		
3ESAL 7200312018	DUAL-LITE BAT PACK	120' AUXILARY BUILDING	3FE-90-023 -	
3ESAL7200312019	DUAL-LITE BAT PACK	120' AUXILARY BUILDING		

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'BER	TYPE OF LIGHT	LOCATION OF LISHT	APPENDIX 'R' DESIGN COMMENTS	CURR IT WORK STATUS
12020	DUAL-LITE BAT PACK	120 AUXILARY BUILDING		
12021	DUAL-LITE BAT PACK	120' AUXILARY BUILDING		
12022	DUAL-LITE BAT PACK	120' AUXILARY BUILDING		
12023	DUAL-LITE BAT PACK	120' AUXILARY BUILDING		
12024	DUAL-LITE BAT FACK	120 AUXILARY BUILDING		
15003	DUAL-LITE BAT PACK	100 AUXILARY BUILDING		
13003	DUAL-LITE BAT PACK	130 AUTILARY BUILDING		
14001	DUAL-LITE BAT PACK	140 AUXILARY BUILDING		
14006	DUAL-LITE BAT PACK	140 CONTROL BUILDING	3FE-00-023	
14007	DUAL-LITE BAT FACK	140 - AUTICARY BUILDING		
14009	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		
14011	DUAL LITE BAT PACE	140 AUTILARY BUILDING		
14012	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		
.14013	DUAL-LITE BAT PACK	140 AUXILARY BUILDING		
14014	DUAL-LITE BAT PACY	.40' AUTILARY BUILDING		
.14015	DUAL-LITE BAT FACE	140 AUXILARY BUILDING		
14016	DUAL-LITE BAT PACK	140 AUXILARY BUILDING		
14017	DUAL-LITE BAT PACK	140' AUXILARY BUILDINS		
14007	QUAL-LITE BAT FACK	140 AUTILARY BUILDING		
14006	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		
1113)	DUAL-LITE BAT PACK	140' AUXILARY BUILDING		
14011	DUAL-LITE BAT PACK	140 AUXILARY BUILDING		
14012	DUAL-LITE BAT PACK	140. AUXILIARY BUILDING		
4014	DUAL-LITE BAT PACK	140, MAILTARA BAITDING		
11004	DUAL-LITE BAT PACK	150' AUXILARY BUILDING		
	HALOFHANE INVERTER	100 CONTROL BUILDING	30E-90-009 & 3FE-00-023	
	HALCHINE INVESTER	100 CONTROL BUILDING	30E-90-009 & 3FE-90-023	MO 402054
	HALOPHONE INVERTER	120° AUXILARY BUILDING	3CE-QD-009 & 3FE-QD-023	
	HALOPHANE INVERTER	100' AUXILARY BUILDING	308-00-009	
1018		81. WESS BRITDING	OR161NAL	
18102		81. W228 BUILDING		
1118		81, W282 BRITDING		
8112	DUAL-LITE BAT PACK	81' MSSS BUILDING '	ORIGINAL -	
8112	DUAL-LITE BAT PACK -	81' MSSS BUILDING	of the contract of	

LIGHT MUMBER	TYPE OF LIGHT	LOCATION OF LIGHT	APPENDIA "R" DESIGN COMM	ENTS CURRENT WORK STATUS
3ESJLD790410010	DUAL-LITE BAT PACK	100 CONTROL BUILDING	3/6-00-023	WR 543554
3ESJLD800210003	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
3ESJLD800210004	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
3ESJL0800210004	BUA -LITE BAT PACK	100 CONTROL BUILDING	3FE-00-023	
3E\$JLD800210010	DUAL-LITE BAT PACK	100' CONTRO! BUILDING		
3ESJLD801010002	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
JESJLD801019020	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
365JL08.0510001	DUAL-LITE BAT PACK	100 CONTROL BUILDING		
3ESJLD841810001	DUAL-LITE BAT FACK	100 CONTROL BUILDING		
3ESJLD791011001	DUAL-LITE BAT PACK	110° CONTROL BUILDING		
3ESJL1801011303	DUAL-LITE BAT PACE	110' CONTROL BUILDING		
3ESJLD791013002	DUAL-LITE BAT PACK	130 CONTROL BUILDING		
GESJLD791013004	DUAL-LITE BAT PACY	130 CONTROL BUILDING		
3ES7LD801013004	DUAL PLITE BAT PACK	130' CONTRO! BUILDING		
3ESQL0800714007	DUAL-LITE BAT PACK	140' CONTROL BUILDING		
DESJLD800714008	DUPL-LITE BAT PACK	140' CONTROL BUILDING		
JESJL0800714011	DUAL-LITE BAT PACK	140' CONTROL BUILDING		
3ESJLD800714012	DUAL-LITE BAT PACK	140' CONTROL BUILDING		
3ESJLD811814001	DUAL-LITE BAT FACK	140' CONTROL BUILDING		
385340811814007	DUAL-LITE BAT PACK	140' CONTROL BUILDING		
3E5JLD811814003	DUAL-LITE BAT PACK	140, COMINDE BRIEDING		
3E3JLD81181400&	DUAL-LIVE BAT PACK	140' CONTROL BUILDING		
36827064:914003	DUAL-LITE BAT PACK	140 CONTROL BUILDING		
3ESJLF541814006	DUAL-LITE BAT PACK	140 CONTROL BUILDING		
3E67LDE41814008	DUAL-LITE BAT PACK	140 CONTROL BUILDING		
JESUL0791015003	DUAL-LITE BAT PACK	150 CONTROL BUILDING		
3E 57L74C0909006	EMEREI-LITE BAT PACK	90 TURBINE BUILDING	341-80-050	
3ESTL74C0710002	DUAL-LITE BAT PACK	100 TURRINE BUILDING		
3ESTL74C0710003	DUAL-LITE BAT PACK	100' TURBINE BUILDING		
3E57L74C0710004	DUAL-LITE BAT PACK	100. INSINE BRITTING		
JESTL74C0710005	DUAL-LITE BAT PACK	100 THRBINE BUILDING		
3ESTL74C0910001	EMERGI-LITE BAT PACK	100' TURBINE BUILDING	3FE-00-022	
JES1L74C0910002	EMERGI-LITE BAT PACK	100' TURBINE BUILDING	3FE-00-022 .	
3ESTL74C0910003	EMERGI-LITE BAT PACK	100' TURBINE BUILDING	3FE-9D-022	

LIGHT NUMBER	TYPE OF LIGHT	LOCATION OF LIGHT	APPENDIX 'R' DESIGN COMMENTS	CURRENT WORK STATUS
3ESTL74C0910004	EMERGI-LITE CAT PACK	100 1.380M Buildiss	147-02-022	
3ESTL74C0910005	EMERGI-LITE BAT PACK	100 TURBING BUILDING	344-30-021	
3E\$1174C0910007	EMERBIALITE PAT PACK	100 YURBINE BUILDING	M(+35-02)	
3ESTL74C0911007	EMERSI-LITE BAT PACK	TID TURRING BUILDING	266-02-022	
365117400913008	PI-LITE BAT PACK	170 TURBING BUILDING	NE-10-022	
JESTL74C0914009	. THE BAY PACE	140 TURBINE BUILDING	24-9-12	
DESYUG3E2010005	DUAL LITE SAT RACK	100' COMDEMENTE TRANSFER		
JE3*U03E2010069	DUAL-CITE BAT PACK	100 CONDENSATE TRANSFER		

- LE HALER & FELD BICC FRANK, IN PLAZA THE CONDRESS AVENUE AUSTIN, TEXAS 7670 200 WAN HONDER AT ATENLE NO. THE PART AND SHARE 15 21 499 6200 8. 16 455 1500 NONE PLAZA WASHING! DN. D C 20036 300 CONVENT STREET 65 AVENUE . DU BE PB NO 7 1202 887-4000 SAN ANTONIO, TEXAS 78205 CSC BRUSSELS, BELO: M FAX (202: 807:4288 ·5/21 270-0800 1001 32 2 5 35 29 11 1900 PENNZOIL PLACE SOUTH TOMER 711 LOUISIANA STREET WRITER & DIRECT DIAL NUMBER 202 887 HOUSTON, TEXAS 77002 (713) 220 5800 August 19, 1991 FREEDOM OF INFORMATION BY HAND DELIVERY ACT REQUEST Donnie H. Grimsley, Director FOIA-91-349 Recod 8-19-91 Division of Freedom of Information & Publications Service U.S. Nuclear Regulatory Commission Washington, D.C. 20555 Dear Mr. Grimsley: This is a request pursuant to the Freedom of Information Act, 5 U.S.C. 552, and 10 CFR Part ) for NRC documents relating to NRC Investigation Reports Nos. 91-24G and 91-28G. For the purpose of this request, the term "document" means all memoranda, letters, filings, testimony, exhibits, contracts, transcripts, minutes, notes, drafts, studies, analyses, reports, maps, diagrams, charts, books, articles, pictures, printouts. tapes, or other written, graphic, or computerized information in any from which constitutes agency records under the Freedom of Information Act. The documents we are requesting relate to an investigation by the NRC involving the Palo Verde Nuclear Facility and can more particularly be described as: A copy of Investigation Reports Nos. 91-24G and 91-28G. A copy of all exhibits and other supporting material referenced in Investigation Reports Nos. 91-24G and 91-28G, or used by NRC to support the conclusions reached in the referenced investigation reports. Pursuant to 5 U.S.C. § 552(a)(6), a response to this request is required in ten days. We are willing to pay all necessary th and copy fees associated with this request. Please notify 9208100233 200.

the undersigned at (202) 887-4558 if these fees are expected to exceed \$450.00. If any portion of this request is denied, please provide a detailed explanation of the reasons for the denial, as required by 5 U.S.C. § 552(a)(6).

Sincerely,

Bradle, W. Jones