

FORM 1 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
266 1986 003 0 8607090090 199975 06/03/86

DOCKET:266 POINT BEACH 1 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: WISCONSIN ELECTRIC POWER CO.
SYMBOL: WEP

COMMENTS

STEPS 38-43: COMPLETE DESCRIPTION OF UNIT 2 EVENT GIVEN IN LER 301/86-003.
WATCH 975 - TRANSIENT INITIATED ON BOTH UNITS DUE TO SINGLE FAILURE.

WATCH-LIST CODES FOR THIS LER ARE:

975 POSSIBLE SIGNIFICANT EVENT

REPORTABILITY CODES FOR THIS LER ARE:

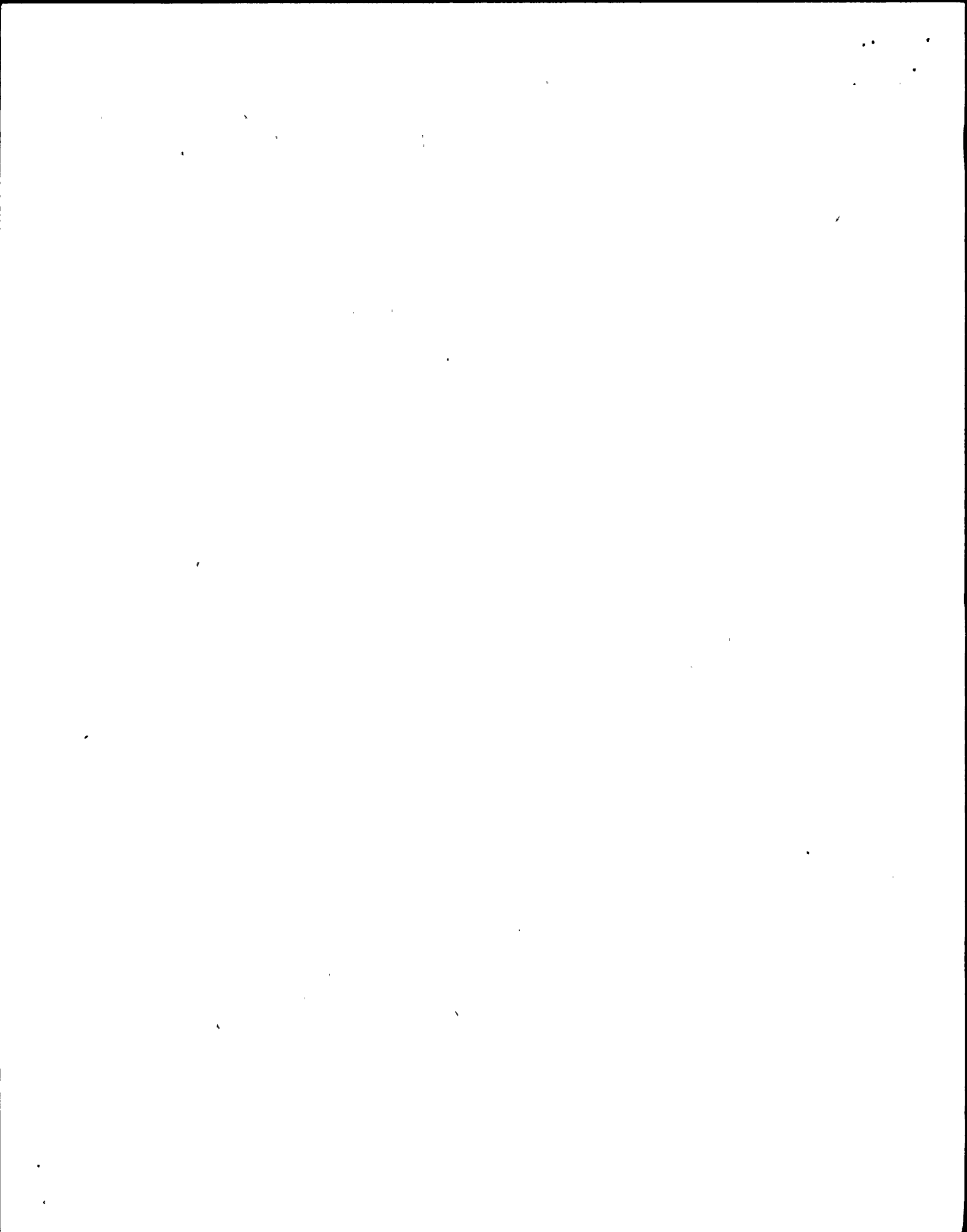
13 10 CFR 50.73(a)(2)(iv): ESF actuations.

REFERENCE LERS:

1 301/86-003

ABSTRACT

POWER LEVEL - 100%. ON 6-3-86, UNIT 1 AT POINT BEACH NUCLEAR PLANT EXPERIENCED A REACTOR TRIP DUE TO THE LOSS OF POWER ON THE WHITE INSTRUMENT BUS. THE POWER LOSS WAS DUE TO THE TRIP OF THE WHITE INVERTER (1DY03) OUTPUT BREAKER FEEDING THE WHITE INSTRUMENT BUS. THE BREAKER TRIP WAS CAUSED WHEN, AFTER MAINTENANCE, THE SWING INVERTER (DYOC) WAS INCORRECTLY RESTORED TO OPERATION ON THE DC BUS FEEDING THE WHITE INVERTERS TO BOTH UNIT 1 AND UNIT 2 (1DY03 AND 2DY03 RESPECTIVELY). THE WHITE INSTRUMENT BUS SUPPLIES A CHANNEL OF POWER RANGE NUCLEAR INSTRUMENTATION. WHEN POWER WAS INTERRUPTED, THIS INSTRUMENTATION GENERATED A 20% LOAD REFERENCE TURBINE RUNBACK FROM ITS DROPPED ROD DETECTION CIRCUITRY. THE STEP DECREASE IN POWER CAUSED THE STEAM DUMP SYSTEM TO ARM. BECAUSE THE WHITE BUS ALSO SUPPLIES POWER TO THE TREF INSTRUMENT, TREF FAILED LOW GENERATING A TEMPERATURE DEVIATION SIGNAL WHICH CAUSED THE STEAM DUMPS TO GO FULL OPEN AND CONTROL RODS TO STEP IN AT MAXIMUM SPEED. THESE EVENTS CREATED A PRIMARY SYSTEM COOLDOWN WHICH CAUSED PRIMARY SYSTEM PRESSURE TO DECREASE BELOW THE REACTOR TRIP SETPOINT. THE REACTOR TRIPPED. THE PRIMARY SYSTEM CONTINUED TO COOL DOWN AFTER THE REACTOR TRIP WHEN THE AUXILIARY FEEDWATER SYSTEM AUTOMATICALLY STARTED. THIS COOLDOWN RESULTED IN ACTUATION OF THE SAFETY INJECTION SYSTEM. ALL SAFETY SYSTEMS FUNCTIONED AS DESIGN. PLANT SYSTEMS WERE STABILIZED AND SAFEGUARDS CIRCUITS RESET.

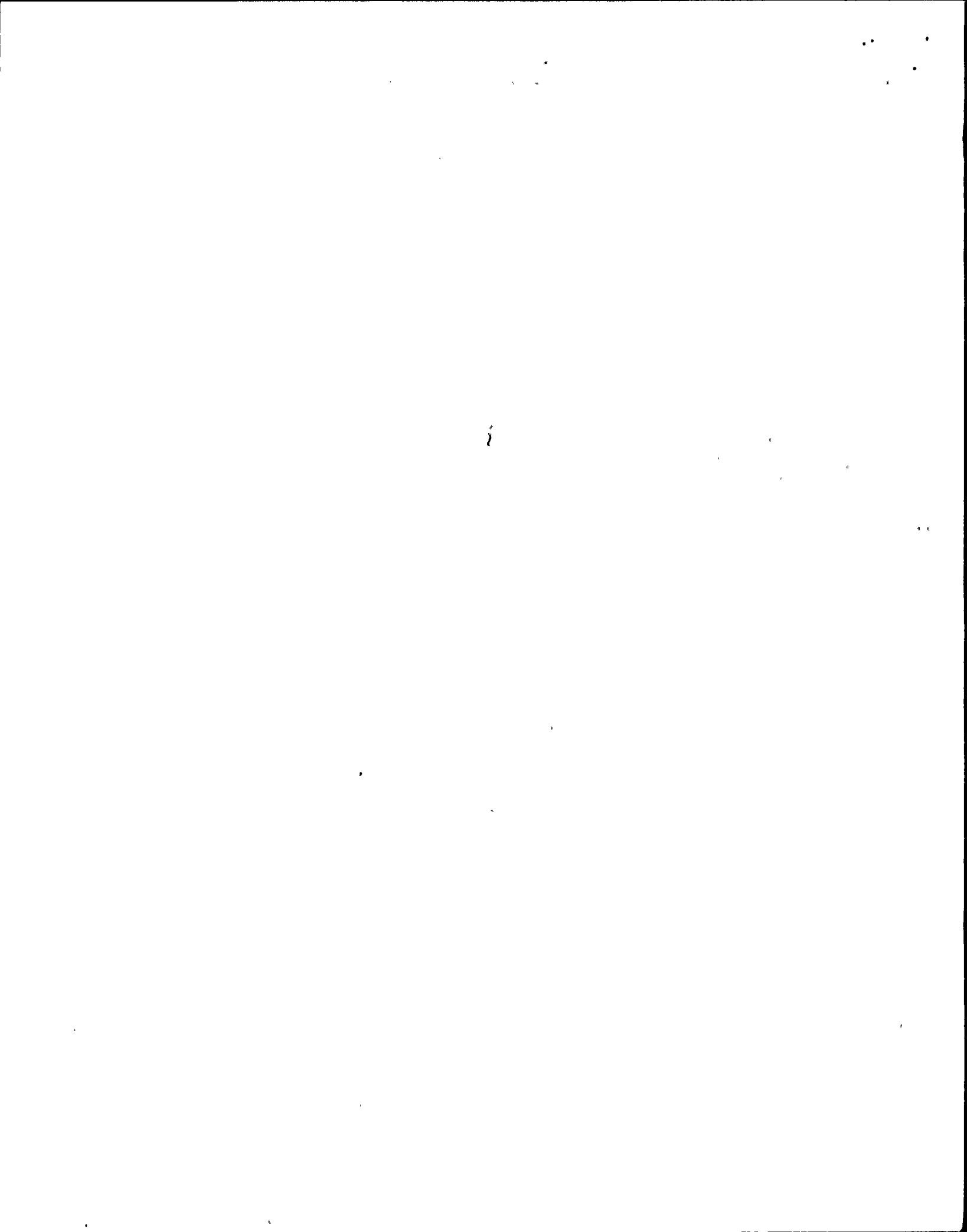


 DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
 311 1982 145 1 8301250373 181466 11/29/82

DOCKET:311 SALEM 2 TYPE:PWR
 REGION: 1 NSSS:WE
 ARCHITECTURAL ENGINEER: PSEG
 FACILITY OPERATOR: PUBLIC SERVICE ELECTRIC & GAS CO.
 SYMBOL: PEG

ABSTRACT

ON NOVEMBER 29, 1982, FOLLOWING A SHIFT OF NO. 2B VITAL BUS POWER SOURCE IN PREPARATION FOR PLANNED MAINTENANCE ON NO. 1 STATION POWER TRANSFORMER, THE CONTROL ROOM OPERATOR OBSERVED THAT THE P-250 COMPUTER HAD SHUT DOWN. SINCE IT UTILIZES THE COMPUTER DATA AND MEMORY, THE REACTOR COOLANT SYSTEM (RCS) SUBCOOLING MONITOR WAS RENDERED INOPERABLE, AND ACTION STATEMENT 3.3.3.7A WAS ENTERED. REDUNDANT WIDE RANGE RCS PRESSURE AND TEMPERATURE INDICATION AND STEAM TABLES WERE AVAILABLE, AND THE EVENT CONSTITUTED OPERATION IN A DEGRADED MODE IN ACCORDANCE WITH TECH SPEC 6.9.1.9.B. INVESTIGATION REVEALED THAT THE COMPUTER HAD SHUT DOWN DUE TO FAILURE OF THE INVERTER POWER SUPPLY. THE POWER SUPPLY PROBLEM RESULTED FROM A FAILED OSCILLATOR CIRCUIT BOARD. THE BOARD WAS REPLACED, THE COMPUTER WAS RESTORED TO OPERATION AND THE ACTION STATEMENT WAS TERMINATED.



FORM 3 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
361 1990 016 0 9101140111 220676 12/06/90

DOCKET:361 SAN ONOFRE 2 TYPE:PWR
REGION: 5 NSSS:CE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: SOUTHERN CALIFORNIA EDISON CO.
SYMBOL: SCE

COMMENTS

STEP 2: REM - MANUFACTURED BY CORNELL-DUBLIER ELECTRIC, PART NO. CDE KBXK1056P OR SCI 020138. STEP 17: PART NO. SCI PC201. STEP 9: CAUSE IX - MOMENTARY LOSS OF POWER. STEP 16: COMP MSC - TRANSISTOR. STEP 11: COMP MSC - MECHANICAL LINKAGE. STEP 25: COMP XR - SEQUENCE OF EVENTS RECORDER.

WATCH-LIST CODES FOR THIS LER ARE:

20 EQUIPMENT FAILURE
34 DESIGN ERROR OR INADEQUACY
913 UPDATE NEEDED

REPORTABILITY CODES FOR THIS LER ARE:

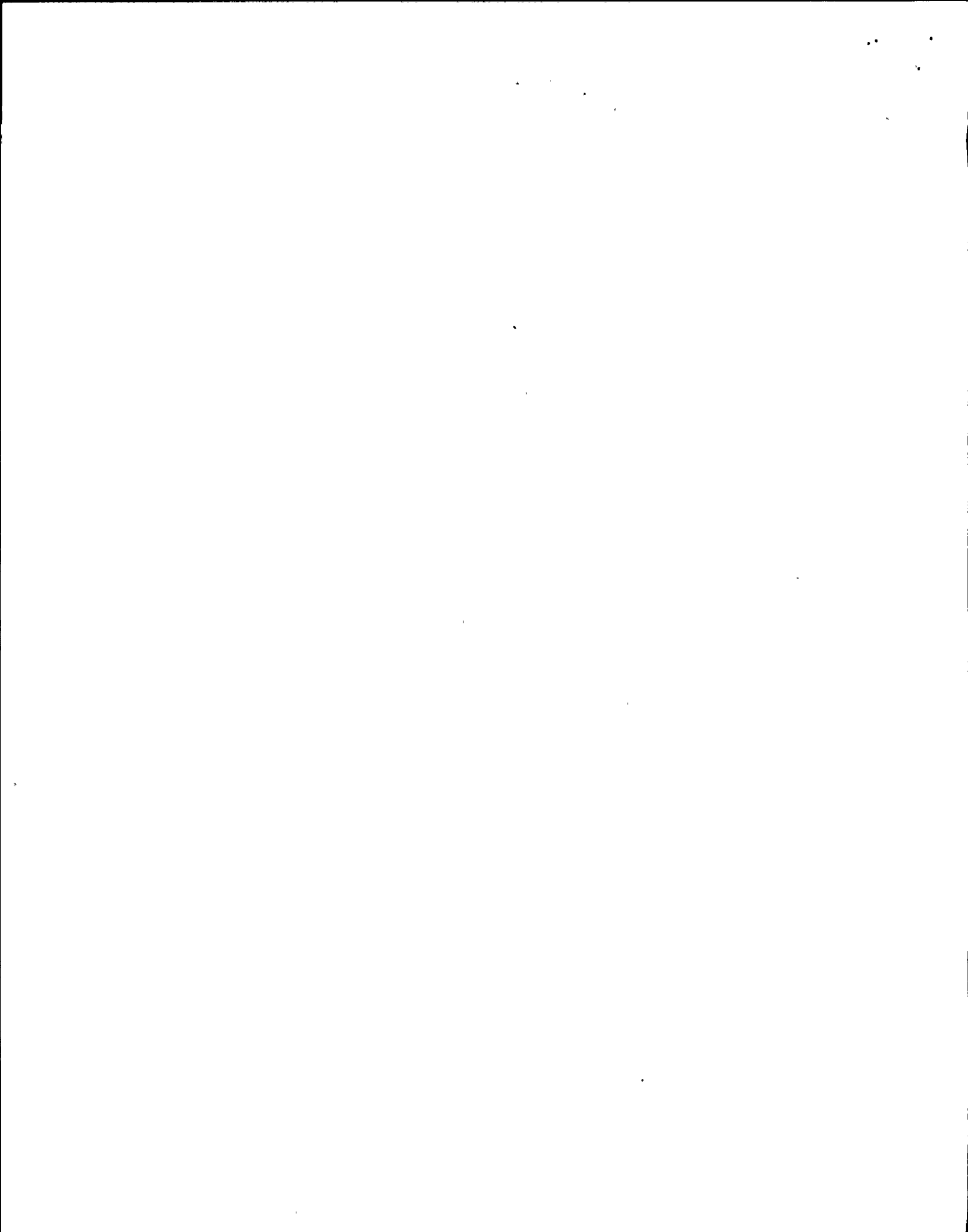
13 10 CFR 50.73(a)(2)(iv): ESF actuations.

REFERENCE LERS:

1 362/89-001

ABSTRACT

POWER LEVEL - 100%. AT 2200 ON DECEMBER 6, 1990, UNIT 2 AUTOMATICALLY TRIPPED FROM 100% POWER ON A REACTOR PROTECTION SYSTEM LOSS OF LOAD (LOL) SIGNAL. THE LOL SIGNAL WAS CAUSED BY A TURBINE TRIP, WHICH OCCURRED AS A RESULT OF A MOMENTARY LOSS OF POWER FROM THE NON-1E UNINTERRUPTIBLE POWER SYSTEM (UPS), MOMENTARILY DE-ENERGIZING BUS Q-069. EMERGENCY FEEDWATER ACTUATION SYSTEM (EFAS) 1 AND EFAS 2 ACTUATIONS PROPERLY OCCURRED. ONE 6.9 KV BUS DID NOT AUTOMATICALLY TRANSFER TO OFFSITE POWER FOLLOWING THE TRIP, DE-ENERGIZING 2 REACTOR COOLANT PUMPS (RCPS); TWO OTHER RCPS CONTINUED TO PROVIDE FORCED CIRCULATION. APPROXIMATELY 1 TO 2 MINUTES FOLLOWING THE TRIP, A COMPLETE LOSS OF POWER ON Q-069 OCCURRED. APPROPRIATE ACTIONS WERE INITIATED IN ACCORDANCE WITH PROCEDURES TO COMPENSATE FOR THE OPERATION OF CONTROL SYSTEMS WHICH WERE AFFECTED BY THE LOSS OF POWER ON Q-069. ONE MAIN STEAM SAFETY VALVE FOR EACH STEAM GENERATOR MAY HAVE LIFTED FOR A SHORT TIME AND PROPERLY RESEATED. BUS Q-069 POWER WAS RESTORED AT 2220 VIA THE MANUAL BYPASS SWITCH. RECOVERY OF THE PLANT OTHERWISE PROCEEDED NORMALLY. IT IS POSTULATED THAT FAILURE OF 1) A CAPACITOR IN THE NON-1E UPS INVERTER OUTPUT AND 2) A TRANSISTOR IN THE STATIC SWITCH TRANSFER LOGIC CONTROL CIRCUIT COMBINED TO CAUSE THE LOSS OF POWER ON BUS Q-069 (BOTH AT THE ONSET OF THE EVENT AND AT 1-2 MINUTES POST-TRIP). THE ROOT CAUSE EVALUATION IS CONTINUING.



FORM 4 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
362 1991 001 0 9104220351 221467 03/15/91

DOCKET:362 SAN ONOFRE 3 TYPE:PWR
REGION: 5 NSSS:CE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: SOUTHERN CALIFORNIA EDISON CO.
SYMBOL: SCE

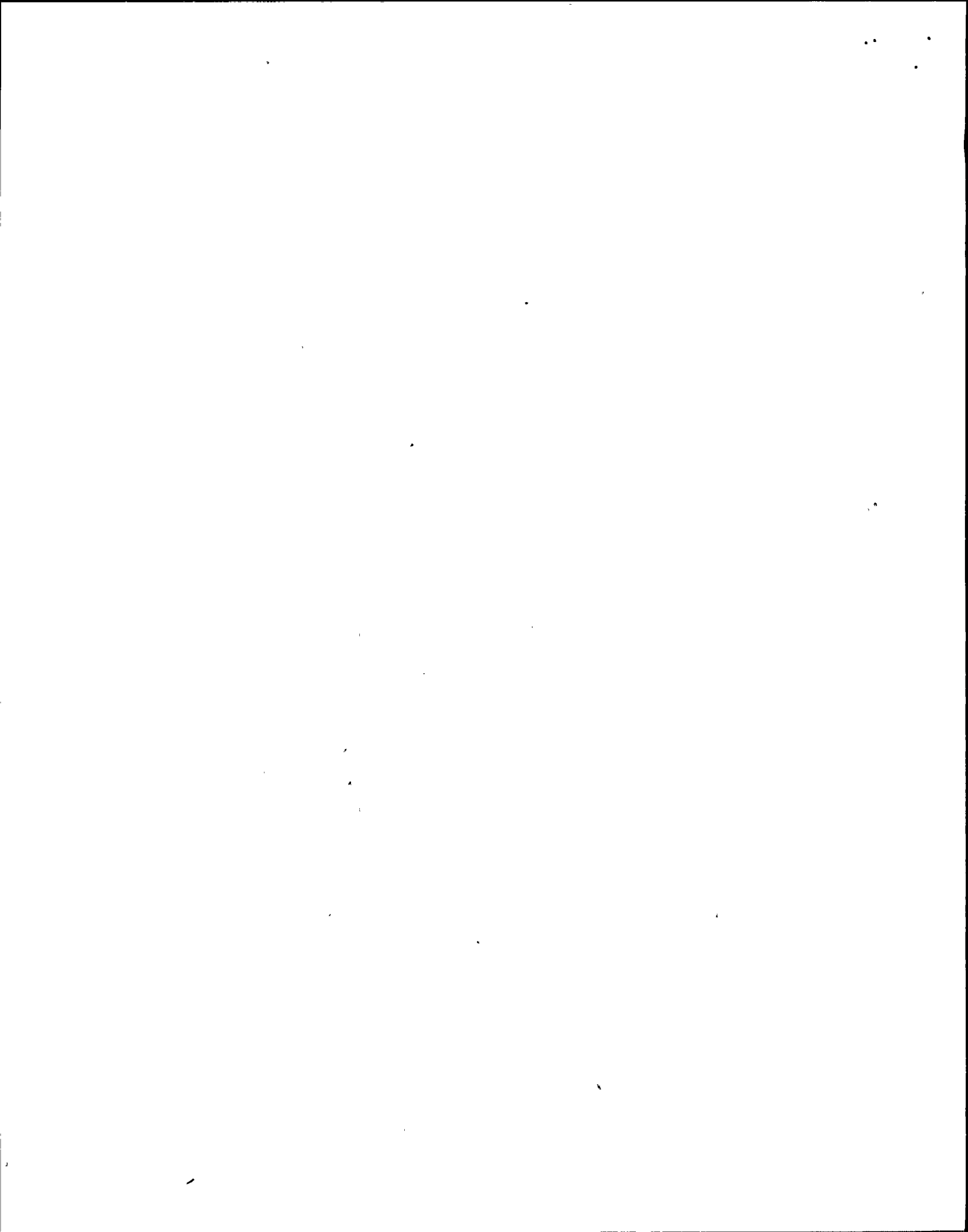
COMMENTS
STEP 2: PART NO. CDE KBXK1056PI OR SCI 020138.

WATCH-LIST CODES FOR THIS LER ARE:
20 EQUIPMENT FAILURE

REPORTABILITY CODES FOR THIS LER ARE:
13 10 CFR 50.73(a)(2)(iv): ESF actuations.

REFERENCE LERS:
1 361/86-029 2 361/90-016 3 362/89-001

ABSTRACT
POWER LEVEL -100%. AT 0938 ON MARCH 15, 1991, UNIT 3 AUTOMATICALLY TRIPPED FROM 100% POWER ON A REACTOR PROTECTION SYSTEM LOSS OF LOAD (LOL) SIGNAL. THE LOL SIGNAL WAS CAUSED BY A TURBINE TRIP, WHICH OCCURRED AS THE RESULT OF A MOMENTARY INTERRUPTION IN POWER FROM THE NON-1E UNINTERRUPTIBLE POWER SYSTEM (UPS), DE-ENERGIZING BUS 3Q069. EMERGENCY FEEDWATER ACTUATION SYSTEM (EFAS) 1 AND EFAS 2 ACTUATIONS PROPERLY OCCURRED. ONE NON-1E 4.16 KV (3A03) BUS DID NOT AUTOMATICALLY TRANSFER FROM ITS NORMAL POWER SOURCE TO ITS ALTERNATE POWER SOURCE RESULTING IN THE LOSS OF THE ALTERNATE POWER SUPPLY (3B012) TO THE NON-1E BUS 3Q069. ONE MAIN STEAM SAFETY VALVE LIFTED FOR A SHORT TIME AND PROPERLY RESEATED. AT 1000, WHEN 3A03 WAS MANUALLY REENERGIZED, POWER WAS RESTORED TO 3Q069. APPROPRIATE ACTIONS WERE TAKEN IN ACCORDANCE WITH PROCEDURES TO COMPENSATE FOR THE OPERATION OF CONTROL SYSTEMS WHICH WERE AFFECTED BY THE LOSS OF POWER TO THE NON-1E UPS. POST-TRIP PLANT RECOVERY OTHERWISE PROCEEDED NORMALLY. AN OUTPUT CAPACITOR IN THE CONSTANT VOLTAGE TRANSFORMER (CVT) SECTION OF THE NON-1E UPS INVERTER FAILED CAUSING THE MOMENTARY INTERRUPTION IN POWER FROM THE NON-1E UPS. ALL CAPACITORS IN THE UNITS 2 AND 3 NON-1E UPS WERE REPLACED WITH AN UPGRADED MODEL. THE UNIT 3 INSTRUMENT BUSES POWERED BY THE NON-1E UPS WERE MODIFIED SUCH THAT POWER WILL BE MAINTAINED TO CRITICAL COMPONENT SYSTEMS.



FORM 5 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
369 1984 024 0 8412010048 192511 08/21/84

DOCKET:369 MCGUIRE 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: DUKE
FACILITY OPERATOR: DUKE POWER CO.
SYMBOL: DPC

COMMENTS

STEP 16: CAUSE IX - VOLTAGE SPIKE. STEP 6: COMP RLX - CONTROL OUTPUT RELAY.

WATCH-LIST CODES FOR THIS LER ARE:

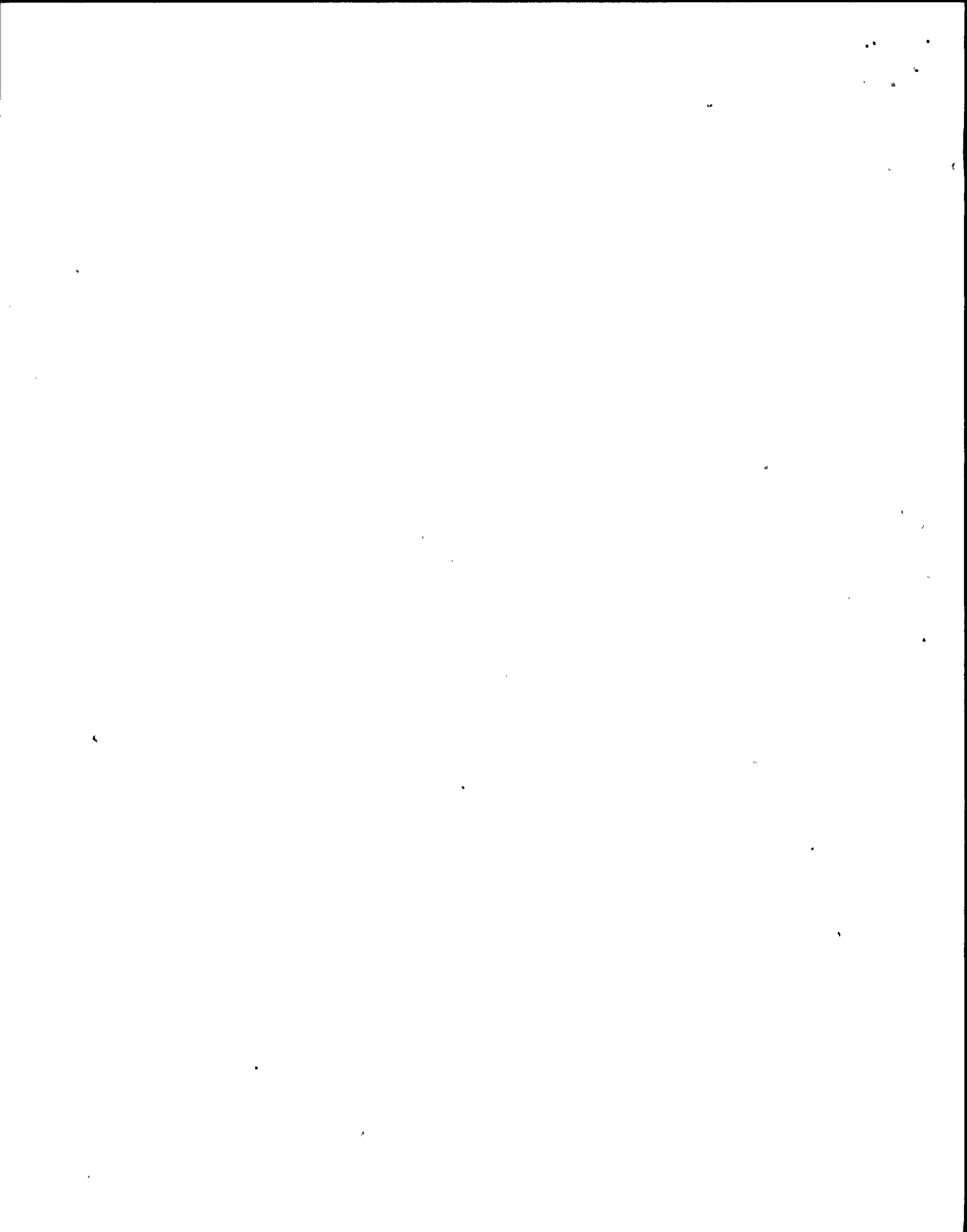
975 POSSIBLE SIGNIFICANT EVENT

REPORTABILITY CODES FOR THIS LER ARE:

14 10 CFR 50.73(a)(2)(v): Event that could have prevented fulfillment of a safety function.

ABSTRACT

POWER LEVEL - 100%. AT 2400 ON 8-20-84, THE MCGUIRE SWITCHYARD COMPUTER WAS REPORTED INOPERABLE. ON 8-21-84, COMPUTER AND INVERTER MAINTENANCE PERSONNEL PERFORMED CORRECTIVE MAINTENANCE ON THE SWITCHYARD COMPUTER AND STATIC INVERTER. AT 2114, THE SWITCHYARD COMPUTER WAS RE-STARTED, CHECKED FOR OPERABILITY, AND RETURNED TO SERVICE. AT 2148, WHEN THE SWITCHYARD OPERATOR RE-ENABLED THE COMPUTER CONTROL OUTPUTS, 30 POWER CIRCUIT BREAKERS (PCBS) AND ASSOCIATED DISCONNECTS OPENED, RESULTING IN MCGUIRE UNIT 1 REACTOR TRIP AND TURBINE TRIP, LOSS OF UNIT 1 OFFSITE AC POWER, AND STARTUP OF UNIT 1 DGS A AND B. UNIT 1 WAS IN MODE 1 AT 100% POWER AT THE TIME. THIS INCIDENT IS CLASSIFIED AS A COMPONENT MALFUNCTION/FAILURE BECAUSE THE CONTROL CIRCUITS WERE CHANGED TO AN UNDESIRABLE STATE WITHOUT A COMMAND FROM THE COMPUTER, DURING COMPUTER AND INVERTER MAINTENANCE. DESIGN DEFICIENCY ALSO CONTRIBUTED BECAUSE THE COMPUTER PROGRAM DID NOT INCLUDE A FUNCTION TO RESET THE COMPUTER OUTPUT CONTROL CIRCUITS TO A PREDETERMINED STATE WHEN THE COMPUTER IS RESTARTED. THE BEHAVIOR AND CONTROL OF THE TRANSIENT WHICH RESULTED FROM THE REACTOR AND TURBINE TRIP WERE AS COULD BE EXPECTED.



FORM 6 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
373 1989 009 1 8907110299 214561 03/02/89

DOCKET:373 LA SALLE 1 TYPE:BWR
REGION: 3 NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
FACILITY OPERATOR: COMMONWEALTH EDISON CO.
SYMBOL: CWE

COMMENTS

STEPS 2,3: MODEL NO. 9L11MHA264.

WATCH-LIST CODES FOR THIS LER ARE:

942 UNUSUAL EVENT
20 EQUIPMENT FAILURE

REPORTABILITY CODES FOR THIS LER ARE:

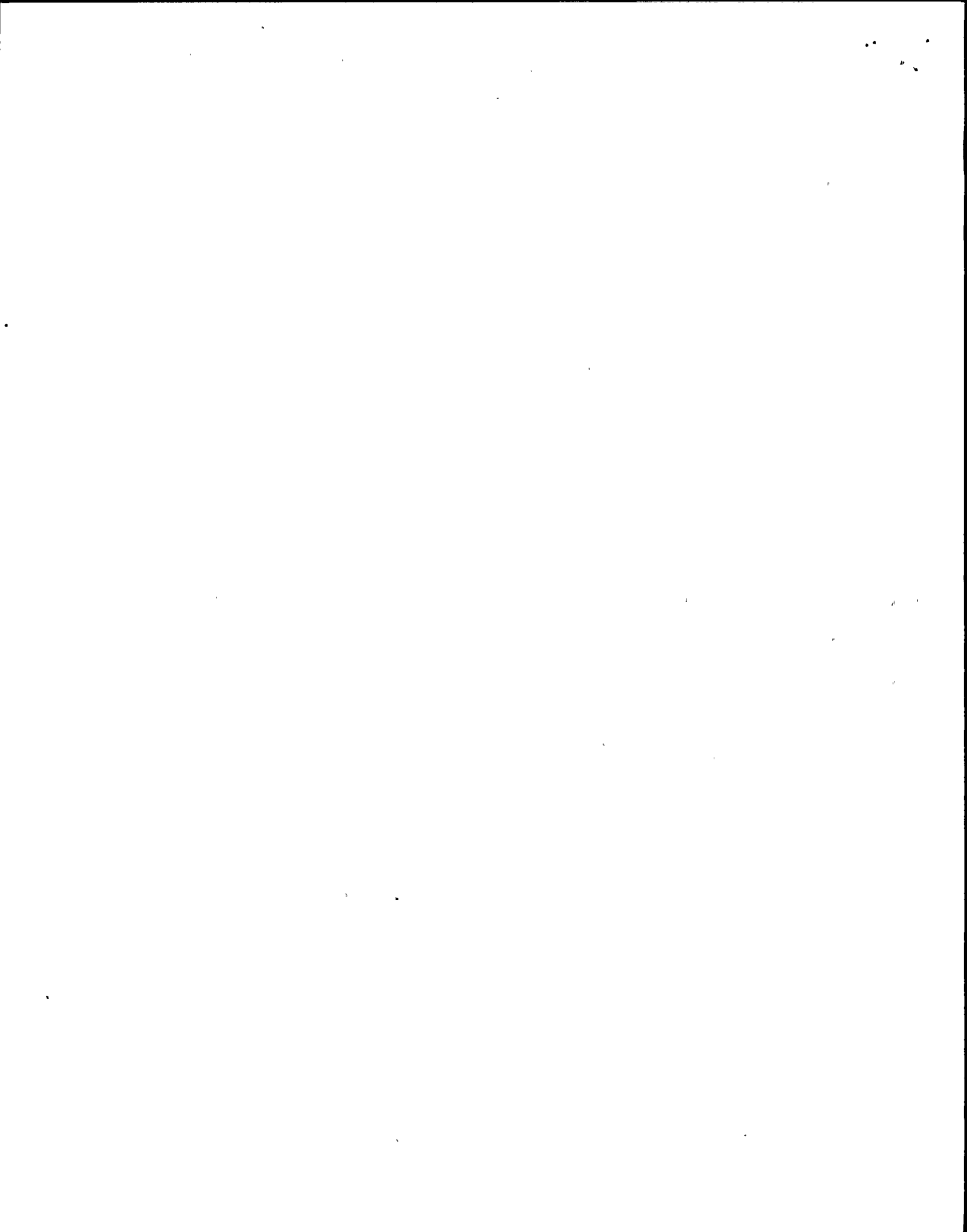
13 10 CFR 50.73(a)(2)(iv): ESF actuations.

REFERENCE LERS:

1 373/87-003 2 373/87-014 3 374/84-020

ABSTRACT

POWER LEVEL - 086%. ON 3/2/89, AT 2302 HRS A PHASE TO GROUND FAULT OCCURRED AT "C" PHASE LIGHTNING ARRESTOR ON THE PRIMARY SIDE OF THE UNIT 2 SYSTEM AUX. TRANSFORMER. FAULT WAS AUTOMATICALLY ISOLATED BY THE TRIPPING OF SWITCHYARD OIL CIRCUIT BREAKERS (OCB) 4-6 AND 6-1 AND UNIT 2 FEEDER BREAKERS. ALL LOADS BEING FED FROM THE SAT TRANSFERRED TO UNIT 2 UNIT AUX. TRANSFORMER EXCEPT FOR BUS 243 WHICH WAS SUPPLIED BY 2B DIESEL GENERATOR WHICH SATISFACTORILY AUTO-STARTED ON UNDERVOLTAGE. UNIT 2 REMAINED ON-LINE AFTER THE INCIDENT. AS A RESULT OF TRANSIENT ON THE 345 KV SYSTEM, UNIT 1 GENERATOR PROTECTIVE RELAYING SENSED A HIGH GENERATOR DIFFERENTIAL CURRENT ON PHASE A AND ISOLATED UNIT 1 GENERATOR. UNIT 1 TURBINE TRIPPED ON LOAD REJECTION RESULTING IN A REACTOR SCRAM FROM TURBINE CONTROL VALVE FAST CLOSURE. UNIT 1 PROCEEDED INTO NORMAL POST-SCRAM CONDITIONS WITH THE EXCEPTION OF TEMPORARY LOSS OF THE SERVICE AIR COMPRESSOR AND PLANT PROCESS COMPUTER. PROBLEMS WERE ALSO ENCOUNTERED WITH THE RESETING OF THE SCRAM LOGIC. CAUSE OF THIS EVENT WAS THE PHASE TO GROUND FAULT THAT OCCURRED FROM THE LIGHTNING ARRESTOR TOP CAP TO A SPARGER HEAD ON THE TRANSFORMER DELUGE SYSTEM. THIS WAS EVIDENT FROM ARC BURNING IDENTIFIED AT TOP OF LIGHTNING ARRESTOR AND AT SPARGER HEAD. FAULT WAS CAUSED BY DEBRIS THAT HAD BLOWN ONTO THE LIGHTNING ARRESTOR LEAD.



FORM 7 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
395 1988 001 0 8803070227 208519 02/04/88

DOCKET:395 SUMMER 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: GLBT
FACILITY OPERATOR: SOUTH CAROLINA ELECTRIC & GAS CO.
SYMBOL: SCC

COMMENTS

STEP 5: COMP MEI - PERIMETER CAMERAS. STEP 10: COMP MEI - PORTAL ACCESS
CONTROLLER UNITS. STEP 11: COMP MSC - ELECTRIC DOOR STRIKES. STEP 12: PSYS
SW - UNKNOWN VITAL AREAS. STEP 9: PART NUMBERS 200140 AND 200569 \$PM/E E/D

WATCH-LIST CODES FOR THIS LER ARE:

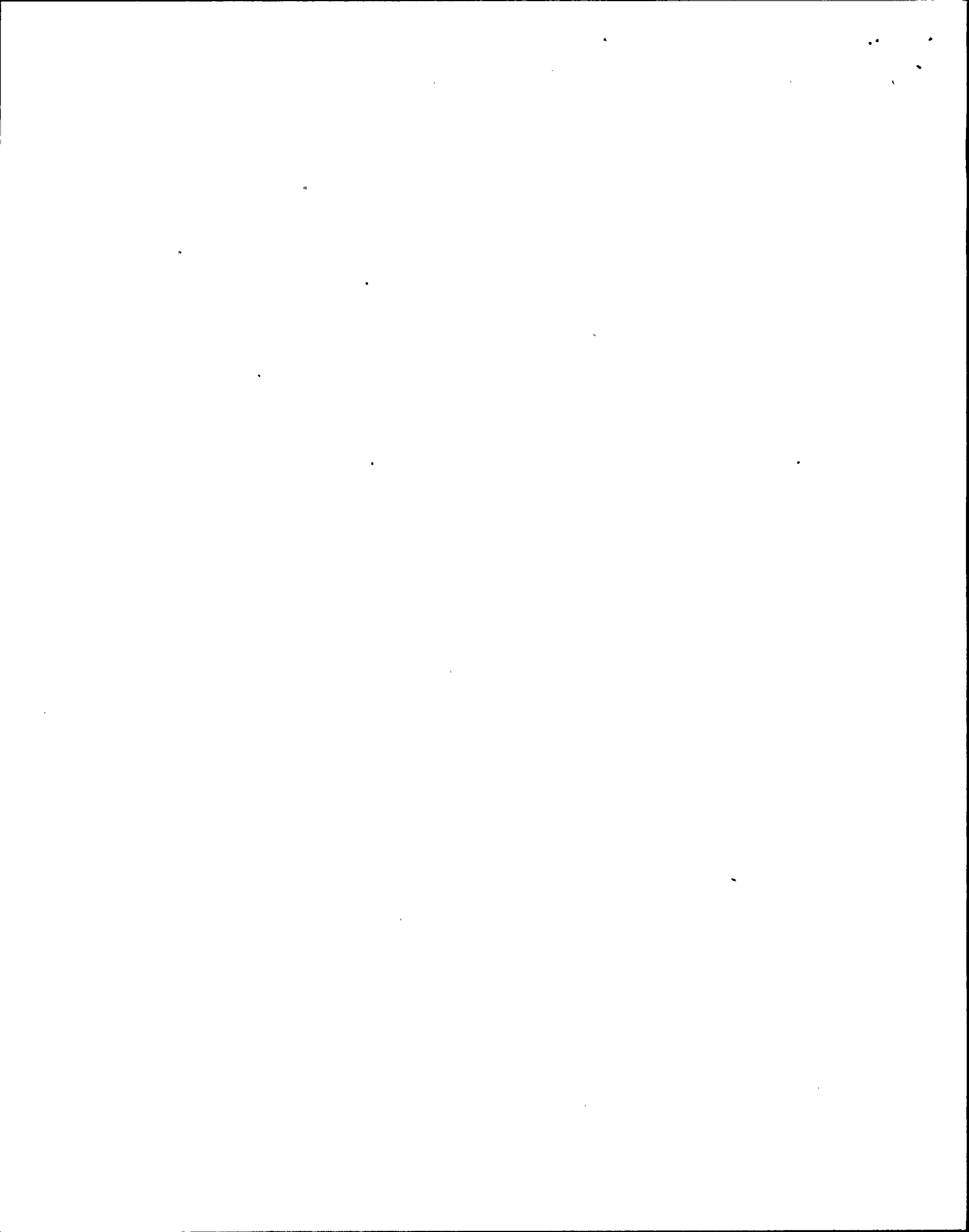
34 DESIGN ERROR OR INADEQUACY
946 PHYSICAL SECURITY/SAFEGUARDS

REPORTABILITY CODES FOR THIS LER ARE:

20 10 CFR 73.71(c): Physical security system threatened.

ABSTRACT

POWER LEVEL - 100%. AT APPROXIMATELY 0830 HOURS, FEBRUARY 4, 1988, TWO
PLANT ELECTRICIANS CRIMPED AN ELECTRICAL LEAD WHILE REPLACING AN
ELECTRICAL DISTRIBUTION PANEL COVER. THE CIRCUIT SHORTED TO GROUND
AND TRIPPED A CIRCUIT BREAKER WHICH RESULTED IN A LOSS OF THREE
PERIMETER CAMERAS. SIMULTANEOUSLY, THE CURRENT TO GROUND SITUATION
CAUSED THE ASSOCIATED INVERTER TO TEMPORARILY OVERLOAD CREATING A
MOMENTARY, BUT SIGNIFICANT REDUCTION IN VOLTAGE THAT RESULTED IN SIX
ELECTRIC DOOR STRIKES FAILING IN THE UNLOCKED (ENERGIZED) POSITION.
AT APPROXIMATELY 0840 HOURS, SECURITY PROCEDURES WERE IMPLEMENTED TO
COMPENSATE FOR THE LOSS OF THE CAMERAS AND TOTAL LOSS OF THE SECURITY
COMPUTER SYSTEM. AT APPROXIMATELY 0907 HOURS, ELEVEN ADDITIONAL
SECURITY FORCE PERSONNEL REPORTED FOR DUTY FROM THE TRAINING
AUGMENTATION TO COMPENSATE FOR THE LOSS OF ALARM CAPABILITY AND
LOCKING MECHANISMS AT THE VITAL AREAS AFFECTED BY THE OUTAGE.
OPERATIONAL TESTS WERE CONDUCTED ON ALL VITAL DOORS AND PERIMETER
INTRUSION DETECTION SEGMENTS AFFECTED. ALL TESTS WERE SATISFACTORILY
COMPLETED AT 1243 HOURS, FEBRUARY 4, 1988. COMPENSATORY POSTS AT EACH
VITAL AREA REMAINED IN EFFECT UNTIL EACH DOOR WAS OPERATIONALLY
TESTED.



FORM 8 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
423 1987 027 0 8707090095 205195 06/05/87

DOCKET:423 MILLSTONE 3 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: NORTHEAST NUCLEAR ENERGY CO.
SYMBOL: NNE

WATCH-LIST CODES FOR THIS LER ARE:

- 31 ACCIDENTAL ACTION
- 941 REPORT ASSOCIATED WITH 10 CFR 50.72

REPORTABILITY CODES FOR THIS LER ARE:

- 13 10 CFR 50.73(a)(2)(iv): ESF actuations.

ABSTRACT

POWER LEVEL - 100%. AT 1323 ON JUNE 5, 1987, WITH THE PLANT AT 100% POWER, THE NORMAL SUPPLY BREAKER TO TRAIN "A" VITAL BUS 34C WAS TRIPPED OPEN. THE MAIN STEAM ISOLATION VALVES IMMEDIATELY CLOSED ON LOSS OF 120VAC TO THEIR SOLENOID TEST CONTROL CIRCUITRY. A REACTOR TRIP FOLLOWED ON LOW-LOW STEAM GENERATOR LEVELS, WHICH SIGNALLED A TURBINE TRIP. A TRAIN "A" LOSS OF POWER SIGNAL WAS GENERATED, THE EMERGENCY DIESEL GENERATOR STARTED AND SUCCESSFULLY ENERGIZED VITAL LOADS. THE MAIN STEAM ATMOSPHERIC RELIEF VALVES AND STEAM GENERATOR CODE SAFETIES OPENED AS DESIGNED. A TRAIN "A" CONTROL BUILDING ISOLATION, AND TRAIN "A" AND "B" FEEDWATER ISOLATION RESULTED FROM THE EVENT. THE PLANT WAS IN HOT STANDBY (MODE 3) BY 1600 HOURS, JUNE 5, 1987. THE CAUSE OF BUS 34C TRIP WAS A RESULT OF PERSONNEL ERROR, DUE TO AN OPERATOR DROPPING A RACKING MOTOR ONTO THE 4.16KV SWITCHGEAR.

FORM 9 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
424 1990 023 0 9101220420 220828 12/18/90

DOCKET:424 VOGTLE 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: BESS
FACILITY OPERATOR: GEORGIA POWER CO.
SYMBOL: GPC

COMMENTS

STEP 2: CLASS AA/FA, 3 PHASE, DRY TYPE TRANSFORMER. STEP 18: MODEL NO. 5HK350-3000.

WATCH-LIST CODES FOR THIS LER ARE:

20 EQUIPMENT FAILURE

REPORTABILITY CODES FOR THIS LER ARE:

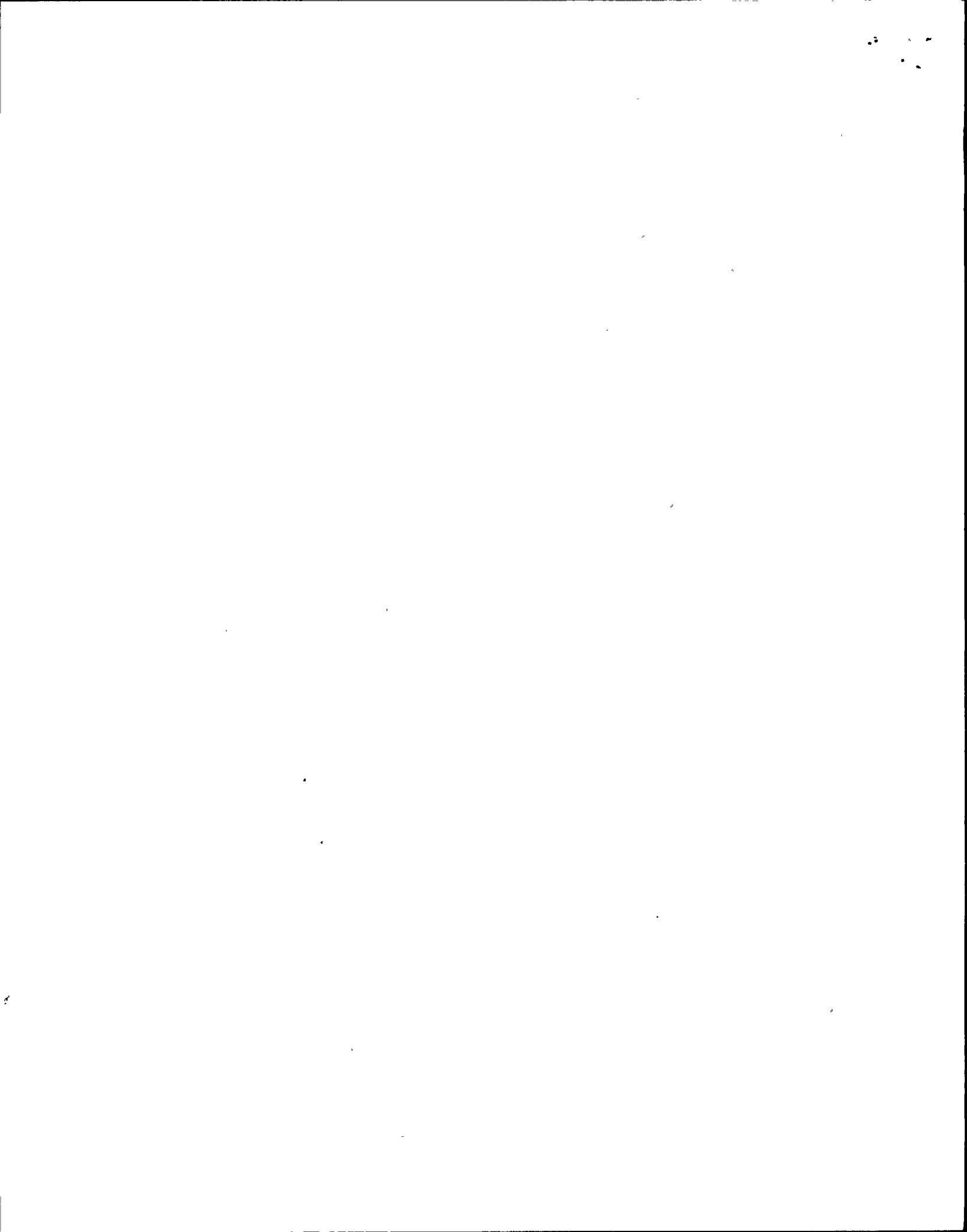
13 10 CFR 50.73(a)(2)(iv): ESF actuations.

REFERENCE LERS:

1 424/90-016

ABSTRACT

POWER LEVEL - 100%. ON 12-18-90 AT 1936 CST, UNIT WAS OPERATING AT 100% POWER WHEN A 4160/480 VOLT NON-1E TRANSFORMER (1NB10X) EXPERIENCED AN INTERNAL FAULT. THIS FAILURE RESULTED IN A LOSS OF POWER FOR THE SPEED CONTROL CIRCUITRY FOR THE 1B MAIN FEEDWATER PUMP (MFP) TURBINE AND CERTAIN SUPPORT SYSTEMS FOR EMERGENCY DIESEL GENERATOR 1B. FEEDWATER PUMP SPEED, FEEDWATER FLOW, AND STEAM GENERATOR (SG) LEVELS DECREASED. THE REACTOR OPERATOR INITIATED A MANUAL REACTOR TRIP AT 1937 CST AFTER EFFORTS TO MAINTAIN SG LEVELS WERE UNSUCCESSFUL. ALL SAFETY RELATED FUNCTIONS OCCURRED PER DESIGN FOLLOWING THE REACTOR TRIP; HOWEVER, A NON-1E 4160 VOLT BUS FAILED TO AUTOMATICALLY TRANSFER TO THE RESERVE AUXILIARY TRANSFORMERS CAUSING A TEMPORARY LOSS OF VARIOUS NON-1E HOUSE LOADS. TRANSFER OF THE 4160 VOLT BUS WAS COMPLETED MANUALLY AND NORMAL PLANT CONDITIONS WERE ESTABLISHED FOR HOT STANDBY BY 1956 CST. THE ROOT CAUSE FOR THE TRANSFORMER FAILURE IS INDETERMINATE; HOWEVER, SEVERAL SIMILAR TRANSFORMER FAILURES HAVE OCCURRED AT VEGP (REFERENCE LER 50-424/1990-016). THE INVOLVED TRANSFORMERS ARE GE CLASS AA/FA, THREE PHASE, DRY TYPE TRANSFORMERS. THE FAILED TRANSFORMER HAS BEEN REPLACED AND FURTHER STUDY OF POSSIBLE FACTORS WHICH MAY HAVE LED TO THE FAILURE IS IN PROGRESS.



FORM 10 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
455 1987 019 1 8806230261 209583 10/02/87

DOCKET:455 BYRON 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
FACILITY OPERATOR: COMMONWEALTH EDISON CO.
SYMBOL: CWE

COMMENTS

STEP 6: EQUIPMENT OPERATOR OPENED STATION AUX TRANSFORMER DISCONNECT
INSTEAD OF THE MAIN TRANSFORMER DISCONNECT.

WATCH-LIST CODES FOR THIS LER ARE:

35 HUMAN ERROR
942 UNUSUAL EVENT
20 EQUIPMENT FAILURE

REPORTABILITY CODES FOR THIS LER ARE:

13 10 CFR 50.73(a)(2)(iv): ESF actuations.

ABSTRACT

POWER LEVEL - 013%. ON OCTOBER 2, 1987, AT 0446, UNIT 2 WAS RETURNING TO SERVICE. WHEN UNIT 2 WAS SYNCHRONIZED TO THE GRID, THE STEAM GENERATOR (SG) LEVELS INCREASED AND CAUSED A HI-2 S/G LEVEL TRIP. THE HI-2 SG LEVEL WAS REACHED ON SG 2C DUE TO EXCESSIVE "LEAK BY" OF THE 2FW530 VALVE. THE HIGH S/G LEVEL CAUSED A TURBINE TRIP AND A SUBSEQUENT REACTOR TRIP BECAUSE REACTOR POWER WAS ABOVE 10%. AN EQUIPMENT OPERATOR (EO) WAS INSTRUCTED TO REALIGN THE SWITCHYARD RING BUS AFTER THE TRIP. THE EO OPENED THE SYSTEM AUX TRANSFORMER DISCONNECTS INSTEAD OF THE MAIN POWER TRANSFORMER DISCONNECTS. THE SAFETY RELATED 4KV BUSES WERE DEENERGIZED CAUSING THE EMERGENCY DIESEL GENERATORS TO START, REENERGIZE THE BUSES, AND SEQUENCE THE SAFE SHUTDOWN LOADS. THE ROOT CAUSE OF THE LOSS OF OFFSITE POWER WAS DUE TO PERSONNEL ERROR. THE EO OPENED THE WRONG DISCONNECT. THE CORRECTIVE ACTIONS ARE AS FOLLOWS: DISCIPLINARY ACTION WAS TAKEN WITH THE EO; ADMINISTRATIVE PROCEDURES WERE REVISED TO ENSURE THAT NO SWITCHYARD OPERATIONS ARE PERFORMED WITHOUT A SECOND INDIVIDUAL PRESENT; PERMANENT, DESCRIPTIVE LABELS HAVE BEEN PLACED ON MPT & SAT SWITCHYARD DISCONNECTS; A WALK THROUGH OF THE SWITCHYARD WITH DIVISION SUPERINTENDENT OF POWER SUPPLY TO DEMONSTRATE PROPER OPERATIONS AND COMMUNICATIONS WAS CONDUCTED; THE SAT DISCONNECTS ARE LOCKED WITH UNIQUE LOCKS FOR EACH UNIT, ETC.

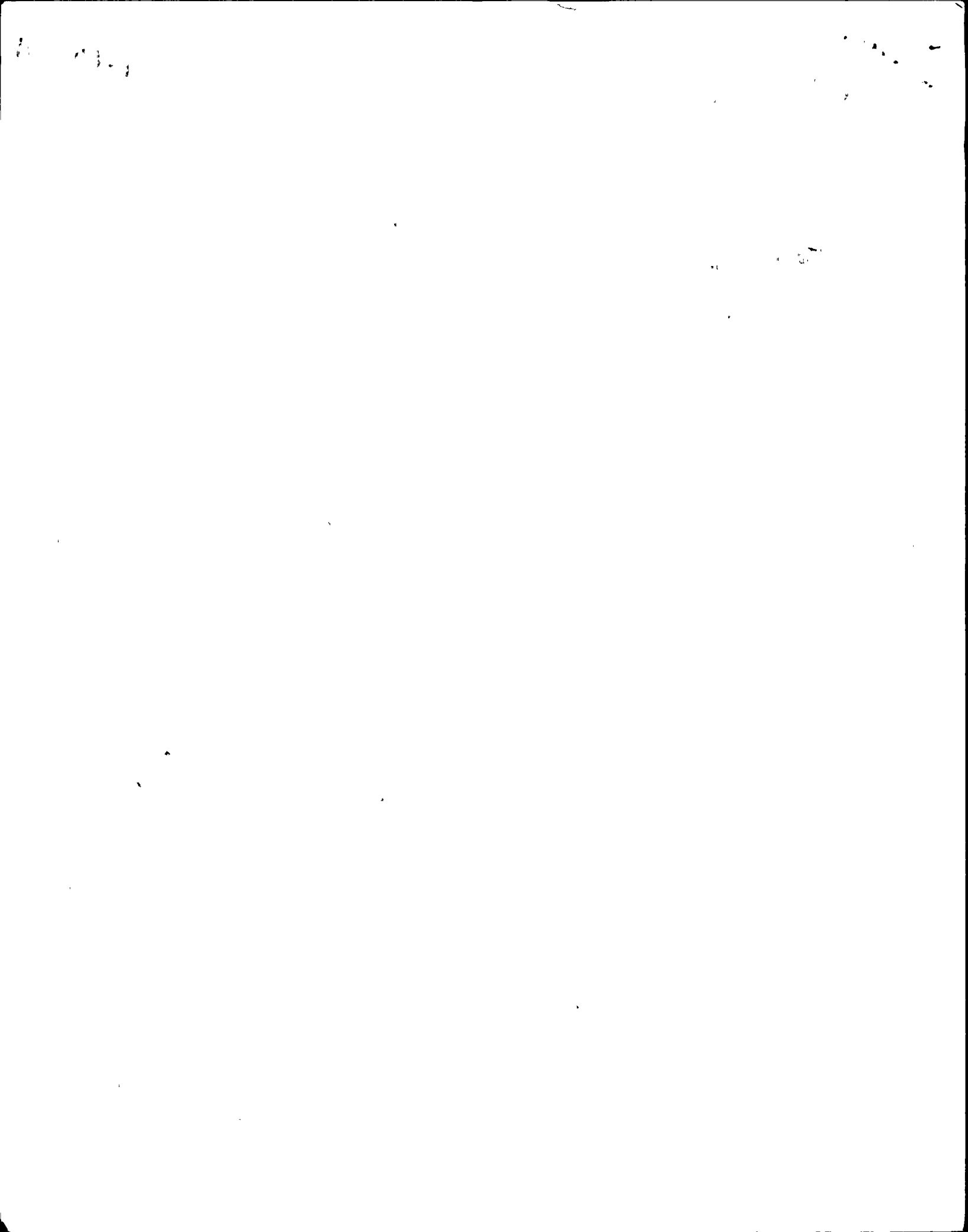
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\$2c

Enclosure 5
07-648-91

- | | | | |
|---------------|---------------|---------------|---------------|
| 1 302/87-021 | 2 302/87-025 | 3 304/86-001 | 4 311/83-022 |
| 5 311/88-014 | 6 316/89-014 | 7 331/85-031 | 8 334/85-018 |
| 9 335/81-053 | 10 362/89-001 | 11 364/81-004 | 12 382/85-042 |
| 13 410/86-015 | 14 458/90-026 | | |

1/14 is a valid int.



FORM 9 LER SCSS DATA 09-23-91

DOCKET YEAR LER NUMBER REVISION DCS NUMBER NSIC EVENT DATE
335 1981 053 0 8201060355 171810 11/25/81

DOCKET:335 ST. LUCIE 1 TYPE:PWR
REGION: 2 NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
SYMBOL: FPL

COMMENTS

WATCH 975 - LOSS OF CONTROL ROOM ALARM FUNCTION.

WATCH-LIST CODES FOR THIS LER ARE:

975 POSSIBLE SIGNIFICANT EVENT

REFERENCE LERS:

1 335/79-028

ABSTRACT

B2 STATION SERVICE TRANSFORMER FAILED, DEENERGIZING THE B2 480V LOAD CENTER. ABOUT 3 MINUTES LATER THE 2 TIE BREAKERS FEEDING THE AB DC BUS FROM THE B BUS TRIPPED, DEENERGIZING THE AB DC BUS. LOSS OF THIS CAUSED A LOSS OF AB CONTROL POWER AND 120V VITAL AC WHICH FEEDS ALL CONTROL ROOM ALARMS BUT NOT INSTRUMENTS. THE DC BUS, 120V AC AND ALARMS WERE RESTORED WITHIN 15 MINUTES. SEE LER 335-79-28 FOR RELATED EVENTS. THE B TO AB TIE BREAKERS WERE THOROUGHLY TESTED AND INSPECTED. A LOOSE POWER TERMINATION WAS DISCOVERED ON THE B SIDE BREAKER AND THE INSTANTANEOUS OVER CURRENT TRIP WAS SET ON 'LO' ON BOTH BREAKERS. THE TRIP WAS RESET TO HI PER DESIGN AND ALL CONNECTIONS WERE TORQUED. ALL SIMILAR BREAKERS WERE CHECKED.

