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FORM     1.              LER SCSS DATA                         08-30-91.

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  029   1982      033         0     8211290767  179463      10/09/82
*********************************************************************

DOCKET:029  YANKEE ROWE                TYPE:PWR
                REGION:  1.            NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: YANKEE ATOMIC ELECTRIC CO.
                SYMBOL: YAE

ABSTRACT
 THE REFUELING NUCLEAR CHANNELS WERE INADVERTENTLY DE-ENERGIZED FOR
 APPROXIMATELY 10 MINUTES:  THIS IS CONTRARY TO TECH SPEC 3.9.2.  THE
 CHANNELS WERE IMMEDIATELY RESTORED UPON DISCOVERY OF THEIR LOSS.  THIS
 IS THE FIRST REPORTED OCCURRENCE OF THIS NATURE.  THE CAUSE WAS THE
 ACCIDENTAL BREAKER OPERATION AS THE RESULT OF BEING BUMPED BY THE
 WOODEN HANDLE OF A JOHNSON BAR USED TO SET NEW NEARBY EQUIPMENT.  THE
 BREAKER WAS CLOSED AND THE CABINET DOOR SECURELY CLOSED.  PERSONNEL
 WERE INSTRUCTED TO BE MORE ATTENTIVE.
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********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  206   1981      020         0     8109230562  168829      09/03/81
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DOCKET:206  SAN ONOFRE 1             TYPE:PWR
                REGION:  5           NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: SOUTHERN CALIFORNIA EDISON CO.
                SYMBOL: SCE

COMMENTS
 WATCH 975 - SINGLE COMPONENT FAILURE CAUSED MULTIPLE INSTRUMENT FAILURES.
 COMMON CAUSE FAILURE OF SAFETY INJECTION VALVES-FAILURE TO OPEN.

WATCH-LIST CODES FOR THIS LER ARE:
 975  POSSIBLE SIGNIFICANT EVENT

ABSTRACT
 SAFETY INJECTION VALVES HV 851 FAILED TO OPEN UPON A VALID SAFETY
 INJECTION SYSTEM (SIS) SIGNAL.  THE FAILURE OF THESE TWO VALVES
 RESULTED IN BOTH SIS TRAINS BEING INOPERABLE.  SI WAS NOT REQUIRED.
 ENGINEERING TESTS HAVE CONFIRMED THAT THESE VALVES WILL NOT OPEN WITH
 THE DESIGN DELTA P.  INSPECTION OF THE VALVE INTERNALS SHOWED ONLY
 NORMAL WEAR.  TESTS ARE BEING PERFORMED TO DETERMINE VALVE OPERABILITY
 UNDER VARYING CONDITIONS.  DESIGN CHANGES ARE BEING CONSIDERED.
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FORM     3                LER SCSS DATA                         08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  206   1981.     021          0     8109230575  168830      09/03/81
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DOCKET:206   SAN ONOFRE 1                  TYPE:PWR
                REGION:  5                 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: SOUTHERN CALIFORNIA EDISON CO.
                SYMBOL: SCE

REFERENCE LERS:
    1 206/81-020

ABSTRACT
 A FAILURE OF THE NUMBER 1 TWINCO VOLTAGE REGULATOR FILTER CHOKE CAUSED
 A DEGRADATION OF 115 VAC POWER RESULTING IN ERRATIC FEEDWATER CONTROL
 AND STEAM GENERATOR LEVEL CONTROL.  SUBSEQUENT RCS COOLDOWN AND
 DEPRESSURIZATION CAUSED INITIATION OF SAFETY INJECTION (REFER TO LER
 NO. 81-020).  VOLTAGE REGULATOR FILTER CHOKE FAILED TO GROUND.
 REGULATOR WAS TEMPORARILY JUMPERED FOR POWER CONTINUITY, AND HAS
 SUBSEQUENTLY BEEN REPAIRED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
  206   1989     020          0     8908310129  215105      07/23/89
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DOCKET:206   SAN ONOFRE 1             TYPE:PWR
                REGION:  5            NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: SOUTHERN CALIFORNIA EDISON CO.
                SYMBOL: SCE

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR

REPORTABILITY CODES FOR THIS LER ARE:
  10  10 CFR 50.73(a)(2)(i): Shutdowns or technical
      specification violations.

ABSTRACT
 POWER LEVEL - 075%. AT APPROX. 0500 ON 7/23/89, WITH UNIT 1 AT 75%
 POWER, DURING PERFORMANCE OF THE MONTHLY EMERGENCY SIREN FUSE BLOCK
 REMOVAL VERIFICATION, IN ACCORDANCE WITH TECH SPEC (TS) 4.1.1, THE
 FUSE BLOCKS FOR BOTH BREAKER 8-1145 AND BREAKER 8-1293A, WERE FOUND
 INSTALLED.  SINCE THE TS SURVEILLANCE REQUIRES THAT ONE FUSE BE
 REMOVED, THIS WAS A CONDITION PROHIBITED BY TS.  THE FUSE BLOCK TO
 BREAKER 8-1293A WAS IMMEDIATELY REMOVED.  THERE IS NO SAFETY
 SIGNIFICANCE TO THIS EVENT SINCE DURING THE TIME THE FUSE BLOCKS FOR
 BOTH BREAKERS 8-1145 AND 81293A WERE INSTALLED, BREAKER 8-1293A
 REMAINED OPEN. THE ROOT CAUSE OF THIS EVENT WAS DETERMINED TO BE THE
 FAILURE TO DOCUMENT THE MANIPULATION AND VERIFICATION OF SAFETY
 RELATED EQUIPMENT, AS REQUIRED PER PROCEDURES.  INVESTIGATION
 DETERMINED THAT THE FUSE BLOCK TO BREAKER 8-1293A HAD BEEN
 INAPPROPRIATELY LEFT INSTALLED FOLLOWING MAINTENANCE ON THE FUSE BLOCK
 FOR BREAKER 8-1145 ON 7/10/89.  PRIOR TO THE MAINTENANCE ON 7/10/89,
 PROPER DOCUMENTATION FOR THE REMOVAL OF THE FUSE BLOCK HAD NOT BEEN
 IMPLEMENTED.  THEREFORE, UPON COMPLETION OF THE MAINTENANCE, THE
 CONTROL OPERATOR (CO) ONLY PROVIDED GENERAL SYSTEM RESTORATION
 GUIDANCE TO THE PLANT EQUIPMENT OPERATOR (PEO).  THE CO DID NOT
 SPECIFY THE SEQUENCE OF STEPS FOR THE PEO TO PERFORM IN ORDER TO
 ENSURE PROPER SYSTEM RESTORATION.  THIS RESULTED IN THE PEO LEAVING
 THE FUSE BLOCK FOR BREAKER 8-8908310129.
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*********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  213   1986     025          0     8607180300  199893      06/19/86
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DOCKET:213  CONNECTICUT YANKEE       TYPE:PWR
                REGION:  1           NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: CONN. YANKEE ATOMIC POWER CO.
                SYMBOL: CYA

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

ABSTRACT
 POWER LEVEL - 000%. WITH THE PLANT IN MODE 2 AT 0% POWER A REACTOR
 TRIP OCCURRED WHILE REPAIRING A POWER RANGE CHANNEL IN THE NUCLEAR
 INSTRUMENTATION SYSTEM.  FUSE REPLACEMENT IN THE FAILED NIS CHANNEL
 DRAWER POWER SUPPLY GENERATED A VOLTAGE DIP ON THE VITAL BUS.  THE END
 RESULT OF THIS VOLTAGE DIP WAS THE REACTOR TRIP. A CONTRIBUTING
 FACTOR TO FAILURE OF THIS POWER SUPPLY MAY HAVE BEEN ELEVATED CONTROL
 ROOM TEMPERATURE DUE TO MAINTENANCE IN PROGRESS.  ADMINISTRATIVE
 CONTROL PROCEDURE WILL BE DEVELOPED FOR PLANT OPERATION AT ELEVATED
 CONTROL ROOM TEMPERATURE BY OCTOBER 1986.  IN THE INTERIM THE DUTY
 OFFICERS AND SHIFT PERSONNEL HAVE BEEN GIVEN INSTRUCTION BY
 MEMORANDUM.  A MAINTENANCE UPGRADE OF NIS EQUIPMENT IS TO BE COMPLETED
 BY NOVEMBER 1986, AND REPLACEMENT OF NIS IS PLANNED FOR THE 1988-89
 REFUELING OUTAGE.
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*********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  219   1982     002          0     8203050431. 172606     01/18/82
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DOCKET:219  OYSTER CREEK              TYPE:BWR
                REGION:  1            NSSS:GE
ARCHITECTURAL ENGINEER: BNRO
     FACILITY OPERATOR: GENERAL PUBLIC UTILITIES CORP.
                SYMBOL: GPU

COMMENTS
 STEP 3: COMP MEI - TIP INSERT/WITHDRAW MACHINE.

ABSTRACT
 INSTALLATION OF A MODIFICATION COULD HAVE LED TO A POSSIBLE FAILURE TO
 MAINTAIN PRIMARY CONTAINMENT INTEGRITY.  THIS CONDITION WAS DUE TO
 THE INSTALLATION OF UNDERVOLTAGE TRIP BREAKERS TO NO. 3 AND NO. 4 TIP
 MACHINE DRIVE MOTOR CIRCUITS.  THIS WOULD HAVE RENDERED THE AUTOMATIC
 RETRACT AND SUBSEQUENT TIP BALL VALVE CLOSURE FEATURES INOPERABLE.
 THE CAUSE IS AN INADEQUATE SAFETY REVIEW.  IT SHOULD BE NOTED THAT THE
 PLANT OPERATIONS REVIEW COMMITTEE IDENTIFIED THE DEFICIENCY, BUT
 STILL APPROVED THE MODIFICATION WITH THE PROVISO THAT THE UNDERVOLTAGE
 TRIP BREAKERS BE DELETED. SUBSEQUENTLY, THE DIRECTOR - STATION
 OPERATIONS, BASED UPON THE PORC RECOMMENDATIONS, APPROVED THE
 MODIFICATIONS.
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FORM     7                 LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
  220   1989     002          0     8904190199  213633      03/08/89
***********************************************************************

DOCKET:220  NINE MILE POINT 1        TYPE:BWR
                REGION:  1           NSSS:GE
ARCHITECTURAL ENGINEER: NMP
     FACILITY OPERATOR: NIAGRA MOHAWK POWER CORP.
                SYMBOL: NMP

COMMENTS
 STEPS 1-29: MARCH 8 EVENT. STEPS 30-41: MARCH 11 EVENT. STEP 2: ISYS HS -
 RESERVE TRANSFORMER HEATING. STEPS 3,4: PSYS HS - RESERSE TRANSFORMER
 HEATING. STEPS 5,6: COMP RLX - SUDDEN FAULT PRESSURE RELAY.

WATCH-LIST CODES FOR THIS LER ARE:
 941  REPORT ASSOCIATED WITH 10 CFR 50.72
  40  PROCEDURAL DEFICIENCY

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

REFERENCE LERS:
    1.220/86-008

ABSTRACT
 POWER LEVEL - 000%. ON MARCH 8, 1989, WITH THE MODE SWITCH IN
 "SHUTDOWN" AND NINE MILE POINT UNIT 1.IN AN EXTENDED REFUELING OUTAGE
 WITH THE CORE OFF-LOADED, THE REACTOR BUILDING EMERGENCY VENTILATION
 SYSTEM (RBEVS) WAS INITIATED.DUE TO A MOMENTARY LOSS OF POWER TO THE
 INSTRUMENT AND CONTROL (I&C) BUS 130.  THIS LOSS OF POWER TRIPPED THE
 REFUEL FLOOR HIGH RADIATION MONITOR, AND WITH THE KEYLOCK SWITCH FOR
 THE MONITOR IN THE "REFUEL" POSITION, THIS RESULTED IN RBEVS
 INITIATING AS DESIGNED.  ON MARCH 11, 1989 THE RBEVS WAS AGAIN
 INITIATED WHEN THE REFUEL FLOOR RADIATION MONITOR TRIPPED DUE TO A
 MOMENTARY LOSS OF POWER TO THE I&C BUS 130. THE ROOT CAUSE FOR THE
 MARCH 8 EVENT WAS EQUIPMENT FAILURE DUE TO PROCEDURAL DEFICIENCY.
 THIS LED TO A SPURIOUS ALARM FOR RESERVE TRANSFORMER 101N, AND
 ULTIMATELY A LOSS OF POWER DURING OPERATIONAL EFFORTS TO REMOVE THE
 TRANSFORMER FROM SERVICE.  ROOT CAUSE FOR THE MARCH 11 EVENT IS
 PERSONNEL ERROR DUE TO COGNITIVE ERROR AND PROCEDURAL DEFICIENCY.  IN
 RETURNING THE 101N RESERVE TRANSFORMER TO SERVICE, AFTER THE MARCH 8
 EVENT, THE CONTROL ROOM OPERATORS INADVERTENTLY INITIATED A LOSS OF
 POWER DURING THEIR CONTROL ROOM SWITCHING OPERATIONS.  IMMEDIATE
 CORRECTIVE ACTIONS TAKEN AS A RESULT OF THE MARCH 8 AND MARCH 11
 AUTO-INITIATION OF RBEVS CONSISTED OF RESETTING THE 86-16 LOCKOUT
 DEVICE AND RESTORING POWER TO POWERBOARD 16B.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  220   1989     013          0     8911090290  215812      09/29/89
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DOCKET:220  NINE MILE POINT 1         TYPE:BWR
                REGION:  1            NSSS:GE
ARCHITECTURAL ENGINEER: NMP
     FACILITY OPERATOR: NIAGRA MOHAWK POWER CORP.
                SYMBOL: NMP

WATCH-LIST CODES FOR THIS LER ARE:
  31  ACCIDENTAL ACTION
  35  HUMAN ERROR
 941  REPORT ASSOCIATED WITH 10 CFR 50.72

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

REFERENCE LERS:
    1 220/89-012

ABSTRACT
 POWER LEVEL - 000%. ON 9/29/89, NINE MILE POINT UNIT 1 (NMP1) WAS IN A
 REFUELING OUTAGE WITH THE MODE SWITCH IN "SHUTDOWN", AND THE CORE
 OFFLOADED.  AT 1315 HOURS NMP1 EXPERIENCED A FULL REACTOR SCRAM DUE TO
 A MOMENTARY DROP IN VOLTAGE ON REACTOR PROTECTION SYSTEM (RPS) BUS
 11.  THE VOLTAGE DROP IN RPS BUS 11 WAS DUE TO A LEAD WIRE BEING
 SHORTED TO GROUND DURING REPLACEMENT OF A POWER SUPPLY ON THE ROD
 POSITION INDICATION SYSTEM (RPIS).  IMMEDIATE CORRECTIVE ACTION WAS
 TAKEN BY OPERATIONS PERSONNEL BY RESETTING THE SCRAM AT 1317 HOURS.
 THE ROOT CAUSE FOR THIS EVENT WAS A FAILURE TO PROPERLY PLAN AND
 EVALUATE THE WORK PRIOR TO STARTING PHYSICAL WORK ACTIVITIES IN THE
 FIELD.  10CFR50.72(B)(2)(II) NOTIFICATION WAS MADE AT 1355 HOURS.
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FORM     9               LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  237   1985      034         0     8509180539  196523      08/16/85
********************************************************************

DOCKET:237  DRESDEN 2                TYPE:BWR
                REGION:  3           NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 WATCH LIST 932: IE INFORMATION NOTICE 85-77; WATCH LIST 975,990: LOSS OF
 OFFSITE POWER ACCOMPANIED BY SEVERAL OTHER FAILUTES; STEP 10: COMPONENT COM
 - TELEPHONES; STEP 17: COMPONENT MEI - RADIO REPEATER STATION; STEP 18:
 COMPONENT COM - RADIOS; STEP 33: EFFECT LX - FAILURE TO RESET; STEP 38:
 COMPONENT RLX - CONTROL RELAY; STEP 49: EFFECT LX - FAILURE TO RESET.

WATCH-LIST CODES FOR THIS LER ARE:
 975  POSSIBLE SIGNIFICANT EVENT
 990  COMPLEX EVENT
 900  POST EVENT DATA AVAILABILITY
 932  RESULT OF IE BULLETINS, ORDERS, ETC.(IEB 81-7)
 943  ALERT

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

ABSTRACT
 POWER LEVEL - 070%. DURING NORMAL UNIT OPERATION, ON 8-16-85 AT 0021,
 DRESDEN UNIT 2 SCRAMMED DUE TO LOW REACTOR WATER LEVEL.  THE SCRAM
 RESULTED FROM LOSS OF OFFSITE POWER DUE TO A FAULT ON THE SECONDARY
 SIDE OF UNIT 1 RESERVE AUX TRANSFORMER, TR12.  TRANSFORMER 12 PRIMARY
 SIDE WAS BEING POWERED FROM THE SAME 138 KV POWER SOURCE AS THE UNIT 2
 RESERVE AUX TRANSFORMER, TR22.  WHEN PROTECTIVE RELAYING SENSED THE
 FAULT, THE UNIT 2 OFFSITE POWER SOURCE WAS ISOLATED AND POWER TO TR22
 WAS LOST.  4 KV BUSES 22 AND 24 DID NOT AUTOMATICALLY TRANSFER POWER.
 ONE OF TWO RUNNING REACTOR FEEDPUMPS POWERED FROM BUS 22 TRIPPED ON
 BUS UNDERVOLTAGE AND THE STANDBY REACTOR FEEDPUMP ALSO POWERED FROM
 BUS 22 FAILED TO AUTOMATICALLY START BECAUSE OF THE BUS UNDERVOLTAGE.
 THE LOW WATER LEVEL SCRAM AND COMPLETE LOSS OF POWER TO THE UNIT
 RESULTED.  BOTH EMERGENCY DG'S AUTOMATICALLY STARTED AND THE UNIT WAS
 PLACED INTO A SAFE SHUTDOWN CONDITION. INVESTIGATION OF THE 4 KV
 BREAKER CONTROL CIRCUITRY HAS SHOWN THAT UNDER THE CONDITION THAT
 PREVAILED, RESERVE FEED BREAKERS FOR BUSSES 22 AND 24 WERE NOT
 DESIGNED TO AUTOMATICALLY TRANSFER POWER FEED TO THE UNIT AUX
 TRANSFORMER, TR21.  THE CIRCUITRY HAS BEEN MODIFIED AND FUNCTIONALLY
 TESTED TO ENSURE THAT THIS EVENT DOES NOT RECUR.  THE SAFETY
 SIGNIFICANCE OF THIS EVENT WAS MINIMIZED BY THE FACT THAT ALL SAFETY
 SYSTEMS FUNCTIONED AS DESIGNED AND THE UNIT WAS PLACED IN A SAFE
 SHUTDOWN CONDITION.
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FORM    10               LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC       EVENT DATE
  244   1985     014          0     8507110262  194975        06/06/85
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DOCKET:244  GINNA                     TYPE:PWR
                REGION:  1            NSSS:WE
ARCHITECTURAL ENGINEER: GLBT
     FACILITY OPERATOR: ROCHESTER GAS & ELECTRIC CORP.
                SYMBOL: RGE

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

ABSTRACT
 POWER LEVEL - 100%. ON JUNE 6, 1985 WHILE OPERATING AT 99.8% REACTOR
 POWER, AN AUTOMATIC REACTOR TRIP AND SUBSEQUENT TURBINE TRIP OCCURRED
 WHEN THE "OVERPOWER DELTA TEMPERATURE" REACTOR TRIP ACTUATED.  AT THE
 TIME OF THE TRIP, INSTRUMENTATION AND CONTROL PERSONNEL WERE REPAIRING
 THE EXCORE NUCLEAR POWER RANGE CHANNEL N-41 OPERATION SELECTOR
 SWITCH.  COINCIDENT WITH THE REPAIR, AN UNDERVOLTAGE CONDITION
 OCCURRED FOR ONE CYCLE ON INSTRUMENT BUS 1D. THE CAUSE OF THE EVENT
 WAS ATTRIBUTED TO THE GROUNDING OF THE DEFEATED CHANNEL'S OPERATION
 SELECTOR SWITCH POWER WIRE THROUGH USE OF A SOLDERING IRON.  THE
 GROUND CAUSED AN UNDERVOLTAGE SPIKE ON INSTRUMENT BUS 1D.  THE
 UNDERVOLTAGE CAUSED AN OVERPOWER DELTA TEMPERATURE BISTABLE TO
 DE-ENERGIZE ON THE REACTOR PROTECTION CHANNEL #4 DUE TO THE WIRING
 CONFIGURATION OF THE EXCORE NUCLEAR POWER CHANNELS.  THIS CONDITION
 INITIATED A TWO OUT OF FOUR LOGIC WHICH CAUSED AN AUTOMATIC REACTOR
 TRIP ON OVERPOWER DELTA TEMPERATURE.  ALL SYSTEMS OPERATED AS DESIGNED
 AND THE REACTOR WAS STABILIZED AT HOT SHUTDOWN CONDITIONS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER    NSIC      EVENT DATE
  247   1985     006          0      8506040027  194976       04/16/85
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DOCKET:247  INDIAN POINT 2             TYPE:PWR
                REGION:  1             NSSS:WE
ARCHITECTURAL ENGINEER: UECX
     FACILITY OPERATOR: CONSOLIDATED EDISON CO.
                SYMBOL: CEC

COMMENTS
 STEP 3: COMP MSC - FEEDWATER TURBINE OVERSPEED, MANUAL AND BEARING OIL
 FAILURE TRIP MECHANISM; STEP 4: COMP MSC - CONTROL OIL SYSTEM ORIFICE BLOCK
 AND CHECK VALVE ASSEMBLY. STEP 12: COMP RLX - FLOW SWITCH AUXILIARY RELAY.

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

REFERENCE LERS:
    1 247/85-005

ABSTRACT
 POWER LEVEL - 100%. ON APRIL 16, 1985 AT 12:20 A.M., WHILE THE PLANT
 WAS FULL POWER, THE LOSS OF ONE OF THE TWO MAIN BOILER FEEDWATER
 PUMPS, #22 INITIATED A SEQUENCE OF EVENTS LEADING TO A REACTOR TRIP.
 THE EVENT OCCURRED WHEN THE OPERATOR REDUCED LOAD.  THE LEVEL IN ALL
 FOUR (4) STEAM GENERATORS FELL AND THE REACTOR TRIP OCCURRED ON A
 LOW-LOW LEVEL SIGNAL FROM STEAM GENERATOR #24.  THE REACTOR PROTECTION
 SYSTEM FUNCTIONED IN ACCORDANCE WITH THE DESIGN.  THE CAUSE OF THE
 MAIN BOILER FEEDWATER PUMP TRIP WAS SUBSEQUENTLY DETERMINED TO BE A
 MALFUNCTION IN THE CONTROL OIL SYSTEM.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
 249    1989     001          1     8907250110  214841      03/25/89
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DOCKET:249  DRESDEN 3                 TYPE:BWR
                REGION:  3            NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 STEP 2: MODEL 362 GA 63-20C. STEP 24: TYPE HFA. STEP 27: COMP MSC-BREAKER
 LINKAGE. STEP 56: COMP MSC-MOTOR BRUSHES. STEP 61: COMP MEI-MULTIPLEXOR.
 STEP 62: PSYS PX-SECURITY. STEP 65: CAUSE HX-ANALYZER COOLED DOWN FOLLOWING
 SHORT TIME W/O POWER. STEPS 8,9: MODEL AMH-16-350-IH. STEP 28: MODEL
 AK-2-25-2. STEP 63: MODEL 35V12300. STEP 51: MODEL 12IAV69A1A. STEP 57:
 MODEL 5CD14D19A111620. STEP 68: DI X-10. STEPS 75,76: DI X-11. WATCH 990 -
 MULTIPLE EQUIPMENT FAILURES FOLLOWING INITIATING EVENT CONTRIBUTED TO
 EVENT.

WATCH-LIST CODES FOR THIS LER ARE:
  20  EQUIPMENT FAILURE
 941  REPORT ASSOCIATED WITH 10 CFR 50.72
 990  COMPLEX EVENT

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

REFERENCE LERS:
    1 237/84-012     2 237/85-034     3 249/87-010

ABSTRACT
 POWER LEVEL - 089%. AT APPROX. 0133 HOURS ON 3/25/89, A FAULT OCCURRED
 WITHIN 345 KV SWITCHYARD POWER CIRCUIT BREAKER (PCB) 8-15.  LOCAL
 BREAKER BACKUP LOGIC CIRCUITRY THEN AUTOMATICALLY ISOLATED PCB 8-15;
 THIS DE-ENERGIZED UNIT 3 RESERVE AUX.  TRANSFORMER (TR) 32, CAUSING A
 LOSS OF OFFSITE POWER (LOOP) TO UNIT 3.  THE AUTOMATIC TRANSFER OF 4
 KV BUS 32 FROM TR 32 TO UNIT 3 AUXILIARY TR 31 DID NOT OCCUR QUICKLY
 ENOUGH TO PREVENT UNDERVOLTAGE TRIPS OF THE 3B REACTOR FEED PUMP (RFP)
 AND THE 3B REACTOR RECIRCULATION PUMP.  WHEN THE STANDBY 3C RFP
 STARTED, REACTOR WATER LEVEL ROSE TO THE MAIN TURBINE AND RFP TRIP
 SETPOINT AND A REACTOR SCRAM ON TURBINE STOP VALVE CLOSURE RESULTED.
 THE MAIN STEAM ISOLATION VALVES (MSIVS) WERE MANUALLY CLOSED TO
 CONSERVE REACTOR INVENTORY AND THE ISOLATION CONDENSER WAS USED FOR
 REACTOR PRESSURE CONTROL.  MILDLY CONTAMINATED CONDENSATE WAS
 INITIALLY USED TO SUPPLY THE ISOLATION CONDENSER SHELL SIDE BECAUSE
 THE CLEAN DEMINERALIZED WATER SUPPLY VALVE WAS UNAVAILABLE.  THIS
 RESULTED IN LOW LEVEL CONTAMINATION TO THE AREA SURROUNDING THE
 ISOLATION CONDENSER VENT.  COLD SHUTDOWN CONDITIONS WERE ACHIEVED BY
 2230 HOURS ON 3/25/89. CORRECTIVE ACTIONS INCLUDED INSPECTION, TESTING
 AND REPAIR OF VARIOUS BREAKERS AND LOGIC CIRCUITS AND SURVEYS/CLEANUP
 OF THE AREAS AFFECTED BY THE ISOLATION CONDENSER VENT.  SIMILAR
 EVENT:  237/85-034.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
  250   1984     021          0     8408200273  191043      07/14/84
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DOCKET:250  TURKEY POINT 3            TYPE:PWR
                REGION:  2            NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: FLORIDA POWER & LIGHT CO.
                SYMBOL: FPL

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

REFERENCE LERS:
    1 251/84-014

ABSTRACT
 POWER LEVEL - 000%. ON JUL 14, 1984, UNIT 3 EXPERIENCED A REACTOR TRIP
 FROM A SUBCRITICAL CONDITION.  THE REACTOR TRIP SIGNAL WAS CAUSED BY
 A POWER INTERRUPTION OF THE SOURCE RANGE NUCLEAR INSTRUMENTATION
 CONTROL POWER WHILE MAINTENANCE PERSONNEL WERE TROUBLESHOOTING THE
 CIRCUITRY.  ALL EQUIPMENT FUNCTIONED AS DESIGNED ON INITIATION OF THE
 ENGINEERED SAFETY FEATURE ACTUATION SIGNAL (ESFAS).  IMMEDIATE ACTIONS
 INCLUDED:  1) VERIFICATION THAT AN ACTUAL REACTOR POWER EXCURSION HAD
 NOT OCCURRED VIA THE OTHER SOURCE RANGE CHANNEL N-31 AND,
 INTERMEDIATE RANGE CHANNELS N-35 AND N-36.  2) VERIFICATION THAT A
 POWER INTERRUPTION OF THE N-32 CIRCUITRY HAD OCCURRED BY MAINTENANCE
 PERSONNEL TROUBLESHOOTING THE EQUIPMENT.  3) PERFORMED OFF-NORMAL
 OPERATING PROCEDURE 208.1 FOR REACTOR TRIP.  4) IN ACCORDANCE WITH 10
 CFR 50.72(B)(2)(II), NOTIFICATION OF A SIGNIFICANT EVENT WAS MADE TO
 THE NRCOC AND THE RESIDENT INSPECTOR.  IMMEDIATE CORRECTIVE ACTION WAS
 TO COUNSEL MAINTENANCE PERSONNEL ON THE NEED TO EXERCISE CAUTION WHEN
 TROUBLESHOOTING THE NUCLEAR INSTRUMENTATION WITH THE REACTOR
 PROTECTION EQUIPMENT IN SERVICE.  SIMILAR OCCURRENCES: 251-84-14.
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FORM    14                 LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
  250   1984      026         0     8411190312  192024      10/09/84
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DOCKET:250  TURKEY POINT 3          TYPE:PWR
                REGION:  2          NSSS:WE
ARCHITECTURAL ENGINEER: BECH.
     FACILITY OPERATOR: FLORIDA POWER & LIGHT CO.
                SYMBOL: FPL

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

REFERENCE LERS:
    1 251/84-011     2 251/84-022

ABSTRACT
 POWER LEVEL - 100%.  AT 2:37 AM, ON 10-9-84, WHILE UNIT 3 WAS AT 100%
 POWER, A TURBINE RUNBACK TO 70% REACTOR POWER OCCURRED.  DURING AN
 INVESTIGATION FOR A GROUND ON AN INVERTER OF UNIT 4, A TEMPORARY LOSS
 OF POWER OCCURRED ON THE 120V AC INSTRUMENT BUS SUPPLYING POWER TO THE
 UNIT 3 VITAL PANEL 3P07.  THIS CAUSED NUCLEAR INSTRUMENTATION SYSTEM
 CHANNEL N-42 TO GENERATE AN "NIS ROD DROP" SIGNAL CAUSING A TURBINE
 RUNBACK TO 70% POWER.  30 SECONDS AFTER THE RUNBACK SIGNAL, THE POWER
 TO 3P07 RETURNED AND THE N-42 POWER RANGE CHANNEL RETURNED TO NORMAL
 INDICATION LEVELS.  AN INADVERTENT TRANSFER OF POWER FOR PANEL 3P07
 FROM THE NORMAL 3A INVERTER TO THE SPARE AS INVERTER, WHICH IS SHARED
 WITH UNIT 4, IS BELIEVED TO BE THE CAUSE OF THE LOSS OF POWER.  JUST
 PRIOR TO THIS UNIT 3 EVENT, THE AS INVERTER HAD BEEN MADE INOPERABLE
 BY A BLOWN FUSE AS THE RESULT OF AN UNRELATED EVENT ON UNIT 4 (LER
 251-84-022).  A THOROUGH INVESTIGATION INVOLVING EQUIPMENT TESTS,
 FAILED TO REVEAL ANY EQUIPMENT RELATED CAUSE FOR THIS TEMPORARY LOSS
 OF POWER.  CORRECTIVE ACTIONS WERE TO STABILIZE UNIT 3 AT 70% REACTOR
 POWER.  AFTER A 12 HR INVESTIGATION FAILED TO REVEAL ANY EQUIPMENT
 FAILURES, PREPARATIONS WERE BEGUN ON 10-9-84 TO RETURN UNIT 3 TO FULL
 POWER.  CORRECTIVE ACTIONS INCLUDED TRAINING ON INVERTER SWITCHING FOR
 THE PERSONNEL ON-SHIFT DURING THE EVENT.  THE EVENT WILL BE DISCUSSED
 IN OPERATOR REQUALIFICATION CLASSES VIA THE OPERATING EXPERIENCE
 FEEDBACK PROGRAM.
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FORM    15                 LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
 250    1985     023         0      8509090269  196668     08/01/85
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DOCKET:250  TURKEY POINT 3            TYPE:PWR
                REGION:  2            NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: FLORIDA POWER & LIGHT CO.
                SYMBOL: FPL

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

REFERENCE LERS:
    1 250/84-003     2 250/84-014     3 250/84-026     4 250/85-018
    5 251/84-011     6 251/84-021     7 251/84-012     8 251/85-013
    9 251/85-017    10 251/85-019
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ABSTRACT

POWER LEVEL - 030%. ON 8-1-85, UNIT 3 EXPERIENCED A REACTOR TRIP FOLLOWED BY A SAFETY INJECTION SYSTEM ACTUATION. THE BS INVERTER THAT WAS IN SERVICE SUPPLYING POWER TO THE 120 VOLT VITAL INSTRUMENT PANEL 3P08, TRIPPED. THE LOSS OF 3P08 CAUSED THE 'A' SG LEVEL CONTROL CHANNEL III TO FAIL LOW. THIS GAVE A DEMAND SIGNAL TO THE 'A' SG MAIN FEEDWATER CONTROL VALVE TO GO FULLY OPEN. THIS RESULTED IN THE 'A' SG LEVEL INCREASING UNTIL IT REACHED THE HI-HI LEVEL SETPOINT (80%) WHICH TRIPPED THE TURBINE AND BOTH SG FEEDWATER PUMPS. THE REACTOR TRIPPED AS A RESULT OF THE TURBINE TRIP. THE LOSS OF POWER TO STEAM FLOW PROTECTION CHANNEL III IN PANEL 3P08 COMPLETED HALF THE LOGIC FOR SI AND WHEN T-AVG FOR LOOP A DECREASED TO BELOW THE SETPOINT OF 543 DEGREES F, THE LOGIC FOR SI WAS COMPLETED. THIS RESULTED IN CONTAINMENT PHASE 'A' ISOLATION AND CLOSURE OF THE MSIV'S. THE SI PUMPS STARTED, HOWEVER, NO SI FLOW WAS DELIVERED TO THE RCS. POWER TO 3P08 WAS RESTORED USING A CONSTANT VOLTAGE TRANSFORMER (CVT) IN ACCORDANCE WITH PLANT PROCEDURES. THE UNIT WAS STABILIZED IN A HOT STANDBY CONDITION, AND SAFEGUARDS EQUIPMENT WERE PROCEDURALLY RETURNED TO THEIR NORMAL OPERATING STATUS. THE REASON FOR THE BS INVERTER TRIP WAS DUE TO THE FAILURE OF THE OSCILLATOR AND LOGIC POWER SUPPLY MODULE. THE VOLTAGE REGULATOR AND SYNCHRONIZER, DWELL ANGLE CONTROL AND OSCILLATOR AND LOGIC POWER SUPPLY MODULES WERE REPLACED. FUSE F6 WAS FOUND BLOWN AND REPLACED.

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
250	1985	025	0	8510080333	198157	08/30/85

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DOCKET:250 TURKEY POINT 3 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: FLORIDA POWER & LIGHT CO.
SYMBOL: FPL

COMMENTS

STEP 2: EFF XX-REQUIRE PROTECTION. STEPS 13 AND 15: COMP XS- ISOLATION SWITCH.

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%. ON 8-27 AND 8-30-85 FPL MADE ADVANCED NOTIFICATION TO THE NRC-NRR AND IE REGION II ON THE PRELIMINARY RESULTS OF A REVIEW OF THE COMPLETED TURKEY POINT 3 APPENDIX 'R' SAFE SHUTDOWN ANALYSIS, WHICH WAS ORIGINALLY COMPLETED IN 1983. A REVIEW WAS INITIATED IN SEPT 1984 TO ENHANCE THE DOCUMENTATION PACKAGES DEVELOPED FOR THE ORIGINAL APPENDIX 'R' FIRE PROTECTION ANALYSIS, AND ON 9-20-85, FPL COMPLETED THE REVIEW OF THE ORIGINAL APPENDIX 'R' SAFE SHUTDOWN ANALYSIS. THE RESULTS OF THIS REVIEW IDENTIFIED ADDITIONAL CIRCUITS THAT MAY REQUIRE PROTECTION, REROUTING, OR CIRCUIT MODIFICATIONS. ADDITIONAL NRC GUIDANCE, PREPARATION FOR THE FPL ST. LUCIE APPENDIX 'R' AUDIT, APPENDIX 'R' DESIGN EVOLUTION, AND ADDED ENGINEERING PERSONNEL EXPERIENCE, INDICATED THE NEED TO UPGRADE THE ORIGINAL DOCUMENTATION PACKAGES FOR THE SAFE SHUTDOWN ANALYSIS. ALTHOUGH THE REVIEW WAS INITIATED TO ENHANCE THE DOCUMENTATION OF THE ORIGINAL APPENDIX 'R' ANALYSES, IT RESULTED IN THE IDENTIFICATION OF ADDITIONAL CIRCUITS WHICH MAY NEED TO BE PROTECTED. THE FOLLOWING CORRECTIVE ACTIONS HAVE BEEN COMPLETED OR WILL BE INITIATED: 1) THE AFFECTED CIRCUITS WERE LOCATED WITHIN FIRE ZONES THAT WERE INCLUDED IN ROVING FIRE WATCH PATROLS, INITIATED AS A COMPENSATORY MEASURE IN SUPPORT OF APPENDIX 'R' SCHEDULAR EXEMPTIONS. 2) THE PRELIMINARY ENGINEERING EVALUATION INDICATES THAT SECTIONS OF CONDUIT RANGING FROM 2' TO 120' AND PULL BOXES REQUIRE PROTECTION.

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FORM    17                LER SCSS DATA                         08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
 250    1989     005          0     8903210386  213268     02/15/89
********************************************************************

DOCKET:250  TURKEY POINT 3           TYPE:PWR
               REGION:  2            NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: FLORIDA POWER & LIGHT CO.
                SYMBOL: FPL

WATCH-LIST CODES FOR THIS LER ARE:
  37  MANUFACTURING ERROR OR INADEQUACY

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

REFERENCE LERS:
    1.250/87-001

ABSTRACT
 POWER LEVEL - 000%. ON 2/15/89, AT 0210, WITH UNIT 3 CRITICAL AT 0%
 POWER (APPROXIMATELY 1E -7 AMPS IN THE INTERMEDIATE RANGE), UPON
 ATTEMPTING TO START THE 3B STEAM GENERATOR FEEDWATER PUMP (SGFP),
 AUXILIARY FEEDWATER (AFW) FLOW WAS AUTOMATICALLY INITIATED. AT THIS
 TIME, THE 3A SGFP WAS NOT RUNNING, AND THE 3A STANDBY SGFP WAS
 SUPPLYING WATER TO THE UNIT 3 STEAM GENERATORS.  THE AFW AUTO-START
 LOGIC IS ENABLED WHEN 1) BOTH SGFP BREAKERS ARE OPEN, AND 2) AT LEAST
 ONE OF THESE SGFP BREAKERS IS IN A TRIPPED CONDITION.  THE CAUSE OF
 THIS EVENT WAS A WIRING ERROR ON A STARTING CIRCUIT RELAY IN THE 3B
 BREAKER CUBICLE.  THE WIRING ERROR HAS BEEN CORRECTED, AND THE 3B SGFP
 CONTROL CIRCUIT HAS BEEN VERIFIED TO FUNCTION PROPERLY.  THE 4B SGFP
 BREAKER WAS SUPPLIED BY THE SAME MANUFACTURER AND WAS FOUND TO HAVE
 THE SAME WIRING ERROR; THE ERROR WILL BE CORRECTED BY MARCH 19, 1989.
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FORM    18               LER SCSS DATA                         08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  251   1984     011          0     8407130079  190542      06/10/84
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DOCKET:251  TURKEY POINT 4            TYPE:PWR
                REGION:  2            NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: FLORIDA POWER & LIGHT CO.
                SYMBOL: FPL

COMMENTS
 STEP 1: EFFECT IX - ELECTRICAL TRANSIENT.

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

REFERENCE LERS:
    1 250/84-009     2 250/84-013     3 250/84-015

ABSTRACT
 POWER LEVEL - 100%. ON JUNE 10, 1984, AT 12:18 A.M., A TURBINE RUNBACK
 TO APPROXIMATELY 510 MEGAWATTS OCCURRED. THE ROOT CAUSE WAS
 DETERMINED TO STEM FROM AN ELECTRICAL TRANSIENT IN THE "NORMAL" (4A)
 STATIC INVERTER (4Y01) THAT WAS IN SERVICE SUPPLYING POWER TO A VITAL
 120 VOLT (A.C.) INSTRUMENT POWER BUS (PANEL 4P07). THIS RESULTED IN A
 MOMENTARY LOSS OF POWER TO VITAL PANEL 4P07 AND ITS FEEDS TO THE
 NUCLEAR INSTRUMENTATION SYSTEM (NIS) CHANNEL N-42 POWER RANGE NUCLEAR
 INSTRUMENTATION.  A MOMENTARY LOSS OF NIS CHANNEL N-42 DETECTOR
 VOLTAGE RESULTED AND INITIATED AN "NIS ROD DROP" SIGNAL WHICH
 GENERATED THE TURBINE RUNBACK.  IMMEDIATE CORRECTIVE ACTIONS INCLUDED
 STABILIZING THE UNIT, SWAPPING THE VITAL PANEL ONTO THE "STANDBY" (AS)
 STATIC INVERTER (3Y04) AND COMPLETION OF SATISFACTORY LOGIC CIRCUIT
 TESTING AND LOAD TESTING OF THE 4A INVERTER WITH A RESISTIVE LOAD OF
 53 AMPS PERFORMED WITH LINE DISTURBANCE MONITORING EQUIPMENT WHICH DID
 NOT RECORD ANY ABNORMAL FLUCTUATIONS. THE 4A INVERTER WAS RETURNED TO
 SERVICE AND LICENSED OPERATORS WERE REQUESTED TO MAINTAIN AN
 AWARENESS OF THE INVERTERS STATUS.  SIMILAR OCCURRENCES: LER
 250-84-009, LER 250-84-013, AND LER 250-84-015.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  251   1984     022          0     8411190596  192026     10/09/84
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DOCKET:251   TURKEY POINT 4            TYPE:PWR
           REGION:  2                  NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: FLORIDA POWER & LIGHT CO.
                SYMBOL: FPL

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

REFERENCE LERS:
    1 251/84-011     2 251/84-021     3 250/84-009     4 250/84-013
    5 250/84-026
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ABSTRACT

POWER LEVEL - 000%. ON 10-9-84, WHILE UNIT 4 WAS HEATING UP FROM COLD SHUTDOWN TO HOT SHUTDOWN, A REACTOR TRIP OCCURRED. THE ROOT CAUSE OF THE REACTOR TRIP WAS A BLOWN FUSE IN THE NORMAL 4A STATIC INVERTER (4Y01) THAT WAS SUPPLYING 120V AC INSTRUMENT POWER TO VITAL PANEL 4P07, WHICH CAUSED THE NUCLEAR INSTRUMENTATION BISTABLES FOR CHANNELS N-32 (SOURCE RANGE) AND N-36 TO DEENERGIZE, GENERATING REACTOR TRIP SIGNALS. IN ADDITION, THE LOSS OF POWER TO PANEL 4P07 INITIATED THE CLOSURE OF THE LETDOWN LINE PRESSURE CONTROL VALVE (PCV-4-145), WHICH WAS OPERATING IN THE AUTOMATIC MODE. THE LOSS OF POWER TO THE OVERPRESSURE MITIGATING SYSTEM ON PANEL 4P07 OPENED THE PRESSURIZER POWER OPERATED RELIEF VALVE (PORV-V-4-455C) WHEN THE TEMPERATURE INPUTS FAILED LOW RESULTING IN THE RCS PRESSURE DROPPING TO 50 PSIG. CORRECTIVE ACTIONS WERE TO PLACE VALVE PCV-4-145 IN THE MANUAL MODE TO REESTABLISH LETDOWN PRESSURE CONTROL, CLOSE THE PORV, COOL DOWN AND STABILIZE THE RCS AND REENERGIZE THE VITAL PANEL 4P07 USING THE SPARE AS INVERTER. INVESTIGATIONS BY MAINTENANCE PERSONNEL REVEALED A WIRING ERROR IN THE DC INPUT FILTER SECTION OF THE 4A INVERTER WHICH ALLOWED THE CIRCUIT TO BE MORE SUSCEPTIBLE TO DC BUS PROBLEMS. THE INVERTER WAS REWIRED AND SATISFACTORILY TESTED IN ACCORDANCE WITH THE MANUFACTURER'S PROCEDURES. CORRECTIVE ACTIONS WILL BE TO REPLACE THE INVERTERS TO ENSURE A MORE RELIABLE POWER SUPPLY.

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  251   1985     019          0     8500000000  197718      07/17/85
*********************************************************************

DOCKET:251  TURKEY POINT 4           TYPE:PWR
                REGION:  2           NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: FLORIDA POWER & LIGHT CO.
                SYMBOL: FPL

COMMENTS
 STEP 18: EFFECT AX - LOSS OF MANUAL CONTROL; STEP 7: EFFECT KX - ABNORMAL
 RUNBACK WITH TURBINE POWER CONTINUOUSLY DECREASED AT 200 PERCENT PER
 MINUTE.

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

REFERENCE LERS:
    1 250/84-003     2 250/84-014     3 250/84-026     4 250/85-018
    5 251/84-011     6 251/84-021     7 251/84-022     8 251/85-012
    9 251/85-013    10 251/85-017

ABSTRACT
 POWER LEVEL - 100%. ON 7-17-85 A REACTOR TRIP OCCURRED FOLLOWED BY
 SAFEGUARDS EQUIPMENT ACTUATION DUE TO THE LOSS OF VITAL INSTRUMENT
 POWER FROM THE 4D INVERTER.  THE LOSS OF POWER TO THE 4P09 PANEL
 DE-ENERGIZED A TURBINE RUNBACK RELAY WHICH INITIATED A TURBINE
 RUNBACK.  THIS COMBINED WITH A FAILURE OF A RUNBACK TIMER RELAY
 RESULTED IN A CONTINUOUS 200% PER MIN TURBINE RUNBACK.  THE RAPID
 TURBINE RUNBACK COMBINED WITH LETDOWN FLOW ISOLATION RESULTED IN THE
 PRIMARY SYSTEM PRESSURE RISING TO THE PRESSURIZER HI-PRESSURE
 SETPOINT, WHICH INITIATED A REACTOR TRIP AND A SUBSEQUENT TURBINE
 TRIP.  THE LOSS OF POWER TO 1 STEAM FLOW PROTECTION CHANNEL IN PANEL
 4P09 FOR EACH SG COMPLETED HALF THE LOGIC FOR SAFEGUARDS INITIATION.
 T-AVG WAS MOMENTARILY REDUCED BELOW THE SAFEGUARDS INITIATION SETPOINT
 OF 543 F AS A RESULT OF OPEN CONDENSER STEAM DUMPS.  THIS COINCIDENCE
 COMPLETED THE ESF'S LOGIC ACTUATING SAFETY INJECTION AND CONTAINMENT
 PHASE 'A' ISOLATION.  ALTHOUGH THE SAFETY INJECTION PUMPS STARTED, NO
 RESULTANT SAFETY INJECTION FLOW WAS DELIVERED TO THE RCS.  THE UNIT
 WAS SUBSEQUENTLY STABILIZED IN HOT SHUTDOWN CONDITIONS.  THE CAUSE OF
 THE TURBINE RUNBACK, FOLLOWED BY THE REACTOR AND TURBINE TRIPS, AND
 SAFEGUARDS EQUIPMENT ACTUATION WAS DUE TO THE FAILURE OF A CURRENT
 LIMITING CARD IN THE 4D INVERTER.  CORRECTIVE ACTIONS WERE TAKEN.
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FORM    21.               LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  259   1985      032         1     8509040362  198437       06/20/85
*********************************************************************

DOCKET:259  BROWNS FERRY 1            TYPE:BWR
                REGION:  2            NSSS:GE
ARCHITECTURAL ENGINEER: TVAX
     FACILITY OPERATOR: TENNESSEE VALLEY AUTHORITY
                SYMBOL: TVA

WATCH-LIST CODES FOR THIS LER ARE:
 913  UPDATE NEEDED

REPORTABILITY CODES FOR THIS LER ARE:
  11  10 CFR 50.73(a)(2)(ii): Unanalyzed conditions.

ABSTRACT
 POWER LEVEL - 000%. BASED ON ANALYTICAL CALCULATIONS BY TVA'S OFFICE
 OF ENGINEERING, THE POSSIBILITY EXISTS FOR THE 250 VDC MAIN BATTERY
 TERMINAL VOLTAGE TO DROP BELOW THE FINAL SAFETY ANALYSIS REPORT (FSAR)
 SECTION 8.6.2 SPECIFIED FINAL VALUE OF 210 VDC FOR A SHORT TRANSIENT
 CONDITION FOLLOWING POSTULATED ACCIDENTS.  THE CALCULATED TRANSIENT
 VALUE IS 207 VDC. THIS SHORT TRANSIENT COULD CAUSE AN INADVERTENT TRIP
 OF THE STATION INVERTERS WHICH POWER THE WIDE RANGE TORUS TEMPERATURE
 MONITORS AND THE TOPAZ INVERTERS WHICH POWER THE HIGH PRESSURE
 COOLANT INJECTION CONTROLLER CIRCUITRY.  CORRECTIVE ACTION, PENDING
 FURTHER EVALUATION, IS TO LOWER THE UNDERVOLTAGE TRIP SETTING ON THE
 INVERTERS.
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FORM    22               LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  263   1984      028         0     8410290031  191625      09/14/84
********************************************************************

DOCKET:263  MONTICELLO               TYPE:BWR
                REGION:  3           NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: NORTHERN STATES POWER CO.
                SYMBOL: NSP

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

ABSTRACT
 POWER LEVEL - 000%. THE OVERLOAD/OVERTEMPERATURE RELAY FOR THE 'B'
 REACTOR PROTECTION SYSTEM MOTOR GENERATOR SET OPEN-CIRCUITED.  THIS
 RESULTED IN SHUTDOWN OF THE MOTOR, LOSS OF POWER TO BUS 'B' LOADS, AND
 INITIATION OF SECONDARY CONTAINMENT AND GROUP 2 ISOLATIONS.  POWER
 WAS RESTORED TO BUS 'B' FROM THE ALTERNATE SOURCE UNTIL THE RELAY WAS
 REPLACED.  AFTER REPLACEMENT OF THE RELAY, THE MG SET WAS RETURNED TO
 SERVICE. SUBSEQUENTLY, THE COMPARABLE RELAY IN 'A' RPS-MG SET WAS
 REPLACED.
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FORM    23                LER SCSS DATA                     08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC     EVENT DATE
  263   1987     006          0     8703250226  203504     02/16/87
********************************************************************

DOCKET:263  MONTICELLO               TYPE:BWR
               REGION:  3            NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: NORTHERN STATES POWER CO.
               SYMBOL: NSP

COMMENTS
 STEP 2: COMP XFMR - INVERTER OUTPUT FEEDBACK CONTROL TRANSFORMER; PART NO.
 991-182-90. STEP 16: PART NO. 130LA20A. STEP 17: PART NO. 03572130-002.

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.

ABSTRACT
 POWER LEVEL - 100%. ELECTRICAL DISTURBANCE ON THE DIVISION I
 UNINTERRUPTIBLE POWER SUPPLY/ UPS/ INITIALLY CAUSED LOCKUP OF
 FEEDWATER REGULATING VALVES/ AND TRANSFER OF THE DIVISION I UPS TO ITS
 ALTERNATE SOURCE.  TWO MINUTES LATER A SECOND ELECTRICAL DISTURBANCE
 RESULTED IN TRIP OF THE DIVISION I REACTOR PROTECTION SYSTEM LEVEL
 INSTRUMENTATION INITIATING A REACTOR SCRAM/ PRIMARY CONTAINMENT
 ISOLATIONS/ AUTOMATIC INITIATION OF THE STANDBY GAS TREATMENT SYSTEM
 AND TRIP OF BOTH REACTOR RECIRCULATION PUMPS. FOLLOWING REACTOR SCRAM/
 REACTOR BUILDING VENT CHANNEL A WIDE RANGE GAS MONITOR/ WRGM/ FAILED.
 REACTOR PRESSURE WAS AUTOMATICALLY CONTROLLED BY THE LOW-LOW SET
 ACTUATION OF ONE SAFETY RELIEF VALVE. PLANT CONDITIONS WERE STABILIZED
 USING NORMAL SCRAM RECOVERY PROCEDURES. A FAILED FEEDBACK CONTROL
 TRANSFORMER AND BLOWN FUSE WERE DISCOVERED ON THE DIVISION I UPS
 INVERTER AND ARE THOUGHT TO BE THE ROOT CAUSE OF THE EVENT.  A FAILED
 METAL OXIDE VARISTOR/ PROCESSOR UNIT AND BLOWN FUSE WERE FOUND IN THE
 CHANNEL A WRGM FOLLOWING THE EVENT.  THE FAILED COMPONENTS WERE
 REPLACED AND FUNCTIONAL TESTING OF ALL AFFECTED WAS SATISFACTORILY
 PERFORMED.  THE POWER SOURCES FOR THE REACTOR WATER LEVEL
 INSTRUMENTATION WILL BE CHANGED TO PREVENT A REACTOR SCRAM AND PRIMARY
 CONTAINMENT ISOLATIONS DUE TO A LOSS OF ONE UPS DIVISION.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  263   1987     013         0      8707140436  205202     06/07/87
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DOCKET:263  MONTICELLO                 TYPE:BWR
                REGION:  3             NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: NORTHERN STATES POWER CO.
                SYMBOL: NSP

COMMENTS
 WATCH 975: POTENTIAL COMMON CAUSE FAILURE MODE. STEP 96: MODEL 5K404AK981A.
 STEP 97: SERIAL # 7929AR.

WATCH-LIST CODES FOR THIS LER ARE:
  34  DESIGN ERROR OR INADEQUACY
 975  POSSIBLE SIGNIFICANT EVENT
 942  UNUSUAL 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.
  15  10 CFR 50.73(a)(2)(vii): Single failure criteria.

ABSTRACT
 POWER LEVEL - 100%. THREE EVENTS OCCURRED RELATED TO BREAKER/FUSE
 MISCOORDINATION.  THE FIRST TWO INVOLVED TRIP OF AN ESSENTIAL DIVISION
 II MCC.  OPERATORS ACTED TO COMPLY WITH TECH SPEC LCO STATEMENTS
 BASED ON THE INOPERABLE 480V LOADS.  NUE'S WERE DECLARED AND NORMAL
 SHUTDOWNS INITIATED. EQUIPMENT WAS MEGGARED AND NO FAULT FOUND.  LOADS
 WERE RESTORED AND THE NUE'S TERMINATED.  THIRD EVENT WAS DECLARED
 WHEN BREAKER/FUSE MISCOORDINATION WAS FOUND AND DETERMINED TO PROVIDE
 POTENTIAL FOR EVENTS THAT MIGHT CAUSE REDUNDANT 480V MCC SOURCES TO BE
 TRIPPED.  AN NUE WAS DECLARED AND NORMAL SHUTDOWN INITIATED.  CAUSE
 OF THE MISCOORDINATION CONDITION WAS PERSONNEL ERROR AND PROCEDURAL
 INADEQUACY THAT ALLOWED BREAKER TRIP DEVICE INSTALLATION WITH
 INADEQUATE REVIEW.  CAUSE OF THE BREAKER TRIPS WAS INTERMITTENT GROUND
 FAULTS IN WIRING FOR A DRYWELL COOLER FAN. TRIP DEVICE GROUND FAULT
 DETECTION FEATURE WAS JUMPERED, LEAVING OVERCURRENT PROTECTION
 FEATURES INSTALLED.  THE NUE WAS TERMINATED. APPROPRIATE PERSONNEL
 HAVE BEEN NOTIFIED OF THE EVENTS AND HOW TO PREVENT FUTURE INADEQUACY.
 REVIEWS OF PLANT CHANGES WERE PERFORMED WITH NO SIMILAR PROBLEM
 FOUND.  FURTHER REVIEW OF ELECTRICAL COORDINATION AND ADMINISTRATIVE
 PROCESSES ARE BEING PERFORMED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER    NSIC     EVENT DATE
  265   1985     011          0     8506170398  194936     05/07/85
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DOCKET:265   QUAD CITIES 2             TYPE:BWR
                REGION:  3             NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 STEP 3: EFFECT IX - DAMAGED.

REPORTABILITY CODES FOR THIS LER ARE:
  13  10 CFR 50.73(a)(2)(iv): ESF actuations.
  15  10 CFR 50.73(a)(2)(vii): Single failure criteria.

REFERENCE LERS:
    1 265/77-037

ABSTRACT
 POWER LEVEL - 090%. ON MAY 7, 1985, UNIT 1 WAS IN THE RUN MODE AT
 APPROXIMATELY 90 PERCENT OF RATED CORE THERMAL POWER.  UNIT 2 WAS IN
 COLD SHUTDOWN.  AT 1517 HOURS, CONTRACTOR PERSONNEL WORKING ON ROOF
 REPAIRS WERE ATTEMPTING TO CONNECT A POWER CORD FOR A DRILL TO AN AC
 OUTLET LOCATED NEAR THE GROUND BELOW.  WHILE LOWERING THE CORD FROM
 THE ROOF, A SUDDEN 'A' PHASE TO GROUND FAULT OCCURRED.  THIS FAULT
 OPENED OIL CIRCUIT BREAKERS (OCB) 8-9 AND 9-10, WHICH CAUSED A LOSS OF
 NORMAL AUXILIARY POWER TO UNIT 2. DIESEL GENERATOR 1/2 AUTO-STARTED
 AND CLOSED-IN TO BUS 23-1 ON A BUS 23-1 UNDERVOLTAGE SIGNAL.  UNIT 2
 REMAINED STABLE.  THE ELECTRICAL TRANSIENT IN THE 345 KV SWITCHYARD
 CAUSED A TRANSIENT ON THE UNIT 1 ELECTRICAL SYSTEM.  THE TRANSIENT
 CAUSED A LOSS OF 'A' REACTOR PROTECTION SYSTEM BUS AND A LOCK-UP OF A
 FEEDWATER REGULATING VALVE. THE LOCKED-UP FEEDWATER REGULATING VALVE
 RESULTED IN A HIGH REACTOR WATER LEVEL CONDITION WHICH RESULTED IN A
 TURBINE TRIP AND REACTOR SCRAM.  THIS OCCURRED SIX MINUTES AFTER THE
 ELECTRICAL TRANSIENT, AT 1523 HOURS. SUBSEQUENTLY, A NORMAL SCRAM
 RECOVERY WAS PERFORMED AND ALL ELECTRICAL SYSTEMS WERE RETURNED TO
 NORMAL.  ALL SYSTEMS AND EQUIPMENT FUNCTIONED AS DESIGNED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  269   1985      007         0     8506120047  195503      04/25/85
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DOCKET:269  OCONEE 1                   TYPE:PWR
                REGION:  2             NSSS:BW
ARCHITECTURAL ENGINEER: DKBE
     FACILITY OPERATOR: DUKE POWER CO.
                SYMBOL: DPC

COMMENTS
 STEP 7: MODEL 120/9.3 F1; STEP 5: COMP MSC - TRANSISTOR; STEP 6: COMPONENT
 XS - STATIC TRANSFER SWITCH.

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

ABSTRACT
 POWER LEVEL - 094%. ON 4-25-85 AT 0533 HRS, OCONEE 1 TRIPPED FROM FULL
 POWER WHEN BOTH MAIN FEEDWATER PUMPS TRIPPED ON HIGH DISCHARGE
 PRESSURE.  THE TRIP OCCURRED DUE TO A CHAIN OF EVENTS WHICH BEGAN WITH
 CONSECUTIVE FAILURES OF A STATIC INVERTER AND A RELATED STATIC
 TRANSFER SWITCH.  MOST OF THE UNIT 1 CONTROL ROOM STATALARM
 PANELBOARDS AND CHART RECORDERS WERE DISABLED BY THE FAILURES, AND
 THIS RESULTED IN AN 'ALERT' CONDITION BEING DECLARED FOR THE FACILITY
 AT 0512 HRS.  THE POWER SYSTEM FAILURES ALSO CAUSED A LOSS OF POWER TO
 THE MAIN FEEDWATER PUMP TURBINE CONTROLS. WHEN POWER WAS RESTORED,
 FEEDWATER FLOW OSCILLATIONS DEVELOPED, DUE TO INTEGRATED CONTROL
 SYSTEM ACTION, AND THE FEEDWATER PUMPS TRIPPED SHORTLY THEREAFTER
 CAUSING THE ANTICIPATORY REACTOR TRIP.  THE CORRECTIVE ACTIONS ENSURED
 THAT THE UNIT WAS STABILIZED AT HOT SHUTDOWN CONDITIONS.  THE PROBLEM
 WAS INVESTIGATED, AND THE FAILED COMPONENTS WERE IDENTIFIED AND
 REPAIRED.  THE REACTOR WAS CRITICAL AGAIN AT 0851 HRS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  271   1984     020         0      8410170244  191682      09/08/84
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DOCKET:271  VERMONT YANKEE             TYPE:BWR
                REGION:  1             NSSS:GE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: VERMONT YANKEE NUCLEAR POWER CORP.
                SYMBOL: VYC

COMMENTS
 STEP 2: MODEL CR120J22001

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 - 087%. ON 9/8/84 DURING NORMAL STEADY STATE OPERATION, A
 RCIC VALVE OVERLOAD ALARM WAS RECEIVED AND INDICATION WAS LOST FOR THE
 RCIC INBOARD STEAM SUPPLY VALVE, RCIC-15.  THE OUTBOARD STEAM SUPPLY
 VALVE, RCIC-16, WAS SHUT AS REQUIRED BY TECH SPEC 3.7.D.2 AND
 ALTERNATE TESTING WAS COMMENCED AS REQUIRED BY TECH SPEC SECTION
 4.5.G.2.  FAILURE WAS FOUND TO BE DUE TO SHORTING OF AN ANNUNCIATOR
 RELAY WHICH CAUSED THE CENTRAL POWER FUSE TO BLOW.  THE RELAY WAS
 REPLACED AND VALVE OPERABILITY WAS SATISFACTORILY DEMONSTRATED.
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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
271	1990	009	0	9007030031	218701	06/01/90

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DOCKET:271 VERMONT YANKEE TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: EBAS
FACILITY OPERATOR: VERMONT YANKEE NUCLEAR POWER CORP.
SYMBOL: VYC

COMMENTS
STEP 4: CAUSE IX - INTERMITTENT FAULT. STEP 6: EFF IX - TRANSFER TO ALTERNATE POWER SOURCE.

WATCH-LIST CODES FOR THIS LER ARE:
35 HUMAN ERROR
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%. ON 06/01/90, AT 1353 HOURS, WITH THE REACTOR AT 100% POWER, A CONTRACT ELECTRICIAN WORKING ON A NORMAL/EMERGENCY LIGHTING PANEL ALLOWED A GROUND WIRE TO COME IN CONTACT WITH A LIVE BUS. THE RESULTING SHORT CIRCUIT CAUSED THE VITAL AC MOTOR GENERATOR SET (EIIS=EF) TO LOSE THE FIELD EXCITATION AND SUBSEQUENTLY A LOSS OF GENERATOR OUTPUT. ON THE LOSS OF GENERATOR OUTPUT, THE VITAL AC BUS TRANSFERRED TO ITS ALTERNATE SOURCE. THIS CAUSED A PRESSURE TRANSIENT IN THE REACTOR COOLANT SYSTEM DUE TO THE TRANSFER FROM THE ELECTRIC PRESSURE REGULATOR TO THE MECHANICAL PRESSURE REGULATOR, RESULTING IN A REACTOR SCRAM. ON 06/03/90, AT 0103 HOURS, THE REACTOR MODE SWITCH WAS RETURNED TO THE RUN POSITION AND THE IN GENERATOR PHASED TO THE GRID. THE ROOT CAUSE OF THIS EVENT WAS PERSONNEL ERROR DUE TO A LACK OF MENTAL ATTENTION. CORRECTIVE ACTIONS WILL INCLUDE ELECTRICAL CONTRACTOR RETRAINING AND INCREASED EMPHASIS SAFETY AND ATTENTION TO DETAIL. AN EVALUATION WILL BE PERFORMED ON THE VITAL AC MG SET TO DETERMINE IF COLLAPSE OF THE GENERATOR FIELD AS A RESULT OF THE FAULT WAS THE APPROPRIATE EQUIPMENT RESPONSE. A PLANT OPERATIONAL REVIEW SUB-COMMITTEE WILL EVALUATE THE NEED FOR A FORMAL GUIDELINE GOVERNING WORK IN ENERGIZED ELECTRICAL EQUIPMENT. NO OTHER INCIDENTS INVOLVING A FAULT ON THE VITAL AC CAUSING A REACTOR SCRAM HAVE OCCURRED IN THE LAST FIVE YEARS.

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  275   1985      016         0     8506280144  194938      05/20/85
********************************************************************

DOCKET:275  DIABLO CANYON 1          TYPE:PWR
                REGION:  5           NSSS:WE
ARCHITECTURAL ENGINEER: PGEC
     FACILITY OPERATOR: PACIFIC GAS & ELECTRIC CO.
                SYMBOL: PGE

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

ABSTRACT
 POWER LEVEL - 000%. AT 1540 PDT, MAY 20, 1985, WITH UNIT 1 IN MODE 3
 (HOT STANDBY), AN AUTOMATIC REACTOR TRIP OCCURRED.  ALL AUTOMATIC
 EQUIPMENT FUNCTIONED AS DESIGNED.  THE REACTOR TRIP BREAKERS WERE
 RESET AND UNIT STARTUP CONTINUED.  WHILE INSTRUMENT BUS IV-1-2
 (EE)(BU) WAS BEING TRANSFERRED FROM BACK-UP TO NORMAL POWER, A VOLTAGE
 TRANSIENT CAUSED BISTABLES FOR SOURCE RANGE CHANNEL 32 (JC)(RI) TO
 DEENERGIZE AND CAUSED A HIGH SOURCE RANGE REACTOR TRIP.  THE SWITCH IS
 DESIGNED TO PRODUCE A MOMENTARY DEENERGIZATION OF THE ASSOCIATED
 INSTRUMENT AC BUS WHENEVER THE INVERTER POWER SOURCE IS CHANGED.  THIS
 DESIGN IS NECESSARY TO PREVENT PARALLELING NON-SYNCHRONIZED POWER
 SOURCES.  TO PREVENT RECURRENCE, THE APPLICABLE OPERATIONAL PROCEDURE
 HAS BEEN REVISED TO PROHIBIT TRANSFERRING INSTRUMENT AC BUS POWER TO
 BACK-UP SOURCES WITH THE PLANT AT POWER ABOVE P-8 OR WITH THE REACTOR
 TRIP BREAKERS (JC)(BKR) CLOSED AND THE REACTOR POWER LEVEL LESS THAN
 THE P-10 INTERLOCK.  IN ADDITION THE EVENT HAS BEEN REVIEWED WITH ALL
 APPLICABLE PERSONNEL.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  280   1980      029          0    8007070229  159240      06/03/80
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DOCKET:280  SURRY 1                    TYPE:PWR
                REGION:  2             NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
                SYMBOL: VEP

ABSTRACT
 POWER LEVEL - 100%. CAUSE - FIRE IN VITAL BUS. VITAL BUS IV SOLA
 FAILED, INITIATING AN AUTOMATIC TURBINE RUNBACK. THE REACTOR TRIPPED
 ON STEAM GENERATOR LO LEVEL WITH FEED WATER MISMATCH. A SAFETY
 INJECTION WAS INITIATED ON HI STEAM LINE FLOW WITH LO TAVE. A SECOND
 SAFETY INJECTION WAS INITIATED DUE TO AN UNSUCCESSFUL CROSS CONNECT
 ATTEMPT TO REENERGIZE VITAL BUS IV IN WHICH VITAL BUS II WAS LOST. A
 FILTERING CAPACITOR IN THE SOLA-TRANSFORMER FAILED AND CAUGHT FIRE
 DAMAGING THE SOLA AND CAUSING LOSS OF POWER TO VITAL BUS IV. THE VITAL
 BUS WAS RE-ENERGIZED AND THE TRANSFORMER REPLACED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  280   1984     025         0      8501100434  192485      12/03/84
*******************************************************************

DOCKET:280   SURRY 1                    TYPE:PWR
                 REGION:  2             NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
                SYMBOL: VEP

COMMENTS
 STEP 3: EFFECT IX - VOLTAGE TRANSIENT.

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

ABSTRACT
 POWER LEVEL - 000%. AT 0859 ON 12-3-84, DURING A REFUELING OUTAGE,
 UNIT 1 WAS AT COLD SHUTDOWN WHEN A SOURCE RANGE AND INTERMEDIATE RANGE
 REACTOR TRIP SIGNAL WAS EXPERIENCED.  PLANT PARAMETERS DID NOT
 INDICATE A VALID HIGH FLUX TRIP.  THE REACTOR TRIP SIGNAL DID NOT
 RESULT IN THE ACTUATION OF ANY COMPONENT BECAUSE THE REACTOR TRIP
 BREAKERS WERE ALREADY OPEN.  THE REACTOR TRIP SIGNAL WAS GENERATED AS
 A RESULT OF A VOLTAGE TRANSIENT THAT WAS INDUCED UPON VITAL BUS 2
 DURING THE REPLACEMENT OF A KEY SWITCH ON A BORIC ACID FLOW
 TRANSMITTER.  THE KEY SWITCH WAS BEING REPLACED WITH THE CIRCUIT
 ENERGIZED.  DURING THE REPLACEMENT OF THE SWITCH, AN ENERGIZED LEAD
 MOMENTARILY SHORTED TO GROUND CREATING A VOLTAGE TRANSIENT ON THE
 VITAL BUS.  THE VOLTAGE SPIKE DID NOT RESULT IN THE LOSS OF POWER TO
 ANY SAFETY RELATED COMPONENT.  ADDITIONAL ADMINISTRATIVE CONTROLS FOR
 WORK ON ENERGIZED COMPONENTS WILL BE INITIATED WHICH INCLUDE (1)
 DETERMINING THE STATUS OF INSTRUMENT AND CONTROLS POWERED FROM
 REDUNDANT VITAL BUSES AND (2) THE EVALUATION OF THE CONSEQUENCES OF
 WORKING ON ENERGIZED CIRCUITS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  285   1986      001         0     8608130523  200618      07/02/86
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DOCKET:285  FT. CALHOUN 1              TYPE:PWR
                 REGION:  4            NSSS:CE
ARCHITECTURAL ENGINEER: GIBB
     FACILITY OPERATOR: OMAHA PUBLIC POWER DISTRICT
                 SYMBOL: OPP

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

ABSTRACT
 POWER LEVEL - 100%. ON JULY 2, 1986, AT 0534, WHILE THE PLANT WAS
 OPERATING AT 100% POWER, THE REACTOR AND TURBINE GENERATOR WERE
 AUTOMATICALLY TRIPPED ON LOW STEAM GENERATOR LEVEL AFTER THE FAILURE
 OF A SAFETY RELATED INSTRUMENT INVERTER.  THE TRIP WAS INITIATED BY A
 CLOSURE OF THE TURBINE CONTROL VALVES WHICH WAS CAUSED BY THE LOSS OF
 120 VAC INSTRUMENT POWER TO THE ELECTROHYDRAULIC CONTROL UNIT.  OTHER
 CONSEQUENCES OF THE LOSS OF POWER INCLUDED INOPERABILITY OF THE STEAM
 DUMP AND BYPASS VALVES AND FAILURE OF THE FEEDWATER VALVE RAMPDOWN
 CIRCUITRY.  THESE FAILURES COMBINED TO CAUSE AN ABNORMAL POST-TRIP
 PRESSURE TRANSIENT IN THE REACTOR COOLANT SYSTEM.  ALTERNATE POWER WAS
 QUICKLY RESTORED TO THE FAILED INSTRUMENT BUS AND, WITHIN A FEW
 MINUTES, THE PLANT WAS PLACED IN A NORMAL HOT SHUTDOWN CONDITION.
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*********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  286   1984      014          0     8411190141  192034      10/13/84
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DOCKET:286  INDIAN POINT 3           TYPE:PWR
                REGION:  1           NSSS:WE
ARCHITECTURAL ENGINEER: UECX
     FACILITY OPERATOR: POWER AUTHORITY OF THE STATE OF NY
                SYMBOL: PNY

COMMENTS
 STEP 2: EFFECT IX - CURRENT SURGES. STEP 1: COMP RLX - PERMISSIVE RELAY.

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

REFERENCE LERS:
    1 286/84-002

ABSTRACT
 POWER LEVEL - 000%. ON OCTOBER 13, 1984, WITH THE REACTOR SUBCRITICAL
 AT HOT ZERO POWER (HZP), A TRIP SIGNAL WAS INITIATED AT 0136 HOURS, AS
 THE RESULT OF A BLOWN CONTROL POWER FUSE ON CHANNEL 35 INTERMEDIATE
 RANGE. THE PLANT HAD RECENTLY BEEN BROUGHT TO HZP
 MAINTENANCE/INSPECTION OUTAGE.  THE TRIP SIGNAL RESULTED IN THE
 AUTOMATIC INSERTION OF THE SHUTDOWN AND CONTROL ROD BANKS, WHICH WERE
 BEING GRADUALLY INSERTED AS PART OF THE SHUTDOWN/COOLDOWN PROCEDURES.
 THE FUSE (BUSSMAN, 5 AMP, SLOW BLOW) ON INTERMEDIATE RANGE 35 WAS
 REPLACED BY 0143 HOURS.
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DOCKET  YEAR  LER NUMBER. REVISION  DCS NUMBER   NSIC     EVENT DATE
  286   1985     012         0      8601090599  198164     11/30/85
********************************************************************

DOCKET:286  INDIAN POINT 3       /    TYPE:PWR
                REGION:  1            NSSS:WE
ARCHITECTURAL ENGINEER: UECX
     FACILITY OPERATOR: POWER AUTHORITY OF THE STATE OF NY
                SYMBOL: PNY

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

REFERENCE LERS:
    1 286/85-011

ABSTRACT
 POWER LEVEL - 000%. IMMEDIATELY AFTER A UNIT TRIP ON 11-30-85,
 (REPORTED IN LER 286/85-011) SOURCE RANGE NUCLEAR INSTRUMENTATION
 CHANNEL 31 FAILED TO RE-ENERGIZE WHEN THE REACTOR NEUTRON FLUX HAD
 DROPPED BELOW THE P-6 PERMISSIVE SETPOINT.  REDUNDANT SR CHANNEL 32
 RE-ENERGIZED AS REQUIRED.  I&C TECHNICIANS WERE INSTRUCTED TO
 INVESTIGATE AND CORRECT THE MALFUNCTION OF CHANNEL 31.  WHILE IN THE
 PROCESS OF INVESTIGATING THE PROBLEM, THE TECHNICIANS REMOVED THE
 CONTROL POWER FUSES FROM SR CHANNEL 31, DE-ENERGIZING REACTOR TRIP
 RELAY 31D-X, THEREBY CAUSING A REACTOR TRIP. AT THE TIME OF THE TRIP,
 THE REACTOR WAS SUBCRITICAL WITH SHUTDOWN ROD BANKS WITHDRAWN.  THE
 FAILURE TO RE-ENERGIZE WAS TRACED TO A LOOSE CONNECTION IN SR CHANNEL
 31 WHICH WAS REPAIRED.
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FORM    35                LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER. REVISION  DCS NUMBER   NSIC     EVENT DATE
  286   1987      002         0     8703180279  203467      02/11/87
*******************************************************************

DOCKET:286  INDIAN POINT 3            TYPE:PWR
                REGION:  1            NSSS:WE
ARCHITECTURAL ENGINEER: UECX
     FACILITY OPERATOR: POWER AUTHORITY OF THE STATE OF NY
                SYMBOL: PNY

COMMENTS
 STEP 20: CAUSE RC - LOSS OF CIRC. WATER PUMP SEAL WATER. STEP 30: COMP MSC
 - RETAINING PIN, ASSOCIATED WITH SPINDLE LIFT NUT. STEP 36: EFF IX -
 VOLTAGE FLUCTUATION. STEP 2: ASCO NO. X8308-100. STEPS 3,35: NO. 125 CT.

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. 286/85-001

ABSTRACT
 POWER LEVEL - 100%. ON FEBRUARY 11, 1987, NO. 34 STATIC INVERTER
 TRIPPED DUE TO AN OVERCURRENT CONDITION CAUSED BY A SHORT-CIRCUITED
 SOLENOID VALVE.  THIS RESULTED IN A RUNBACK OF BOTH MAIN BOILER
 FEEDWATER PUMP SPEED CONTROLLERS (THESE CONTROLLERS ARE POWERED FROM
 NO. 34 STATIC INVERTER) AND A SUBSEQUENT REACTOR TRIP ON STEAM FLOW/
 FEEDWATER FLOW MISMATCH WITH COINCIDENT LOW STEAM GENERATOR (SG)
 LEVEL.  A HIGH STEAM FLOW SAFETY INJECTION (SI) ACTUATION AND OTHER
 SYSTEM ABNORMALITIES OCCURRED DUE TO THE LOSS OF THE STATIC INVERTER.
 THE FAILED SOLENOID VALVE WAS REPLACED AND ALL OTHER AFFECTED SYSTEMS
 WERE VERIFIED TO BE FUNCTIONING NORMALLY BEFORE START-UP.  TO PREVENT
 RECURRENCE, THE DESIGN OF NO. 34 STATIC INVERTER WAS IMPROVED TO
 ALLOW ISOLATION OF SINGLE BRANCH CIRCUITS IF A SHORT CIRCUIT DEVELOPS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  287   1986     002         0      8610240393  201534     09/17/86
********************************************************************

DOCKET:287  OCONEE 3                   TYPE:PWR
                REGION:  2             NSSS:BW
ARCHITECTURAL ENGINEER: DKBE
     FACILITY OPERATOR: DUKE POWER CO.
                SYMBOL: DPC

COMMENTS
 STEP 9: TYPE 2837A16G03. STEP 20: MODEL 1152. OTHER REPORTABILITY-
 50.72(B)(2)(II).

WATCH-LIST CODES FOR THIS LER ARE:
 941  REPORT ASSOCIATED WITH 10 CFR 50.72

REPORTABILITY CODES FOR THIS LER ARE:
  13  10 CFR 50.73(a)(2)(iv): ESF actuations.
  21  OTHER: Voluntary report, special report, Part 21 report,
      etc.

ABSTRACT
 POWER LEVEL - 100%. ON SEPTEMBER 17, 1986 AT 1336 HOURS, UNIT 3 WAS
 MANUALLY TRIPPED FROM 100% FULL POWER AFTER A PIPE RUPTURE IN THE
 TURBINE BUILDING.  FOUR SECONDS FOLLOWING THE REACTOR TRIP, BOTH MAIN
 FEEDWATER PUMPS (MFDWP) TRIPPED AND EMERGENCY FEEDWATER (EFDW) WAS
 AUTOMATICALLY INITIATED.  THE OPERATOR WAS REQUIRED TO MANUALLY
 CONTROL THE "A" TRAIN OF EFDW BECAUSE OF A FAILURE IN THE AUTOMATIC
 LEVEL CONTROL CIRCUITRY.  APPROXIMATELY 13 MINUTES AFTER THE TRIP, A
 MOMENTARY LOSS OF 3KI ESSENTIAL AC POWER WAS EXPERIENCED.  THIS
 RESULTED IN SEVERAL INSTRUMENT SPIKES INCLUDING A SIGNAL WHICH CAUSED
 THE POWER OPERATED RELIEF VALVE (PORV) TO LIFT FOR LESS THAN TWO
 SECONDS.  THE IMMEDIATE CORRECTIVE ACTION WAS TO ESTABLISH THE UNIT AT
 HOT SHUTDOWN CONDITIONS.  THE SUPPLEMENTAL CORRECTIVE ACTIONS
 INVESTIGATED THE TRIP AND MALFUNCTIONS WHICH OCCURRED DURING THE
 EVENT.  NO TECHNICAL SPECIFICATION LIMITS WERE EXCEEDED, AND THERE WAS
 NO RELEASE OF RADIOACTIVITY.  THEREFORE, THE HEALTH AND SAFETY OF THE
 PUBLIC WERE NOT AFFECTED.
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FORM    37               LER SCSS DATA                         08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  295   1984      001         0     8402070172  188964      01/05/84
********************************************************************

DOCKET:295  ZION 1                   TYPE:PWR
                REGION:  3           NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

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

ABSTRACT
 POWER LEVEL - 000%. A ZION UNIT 1 REACTOR TRIP OCCURRED ON JAN. 5,
 1984 WHILE THE UNIT WAS IN COLD SHUTDOWN AS PART OF A REFUELING
 OUTAGE.  THE INITIATING SIGNALS CAME FROM THE NUCLEAR INSTRUMENT
 SYSTEM (NIS) CHANNEL II INTERMEDIATE AND SOURCE RANGE BISTABLES.  THE
 NIS TRIP SIGNALS OCCURRED DUE TO A MOMENTARY LOSS OF THE 120 VOLT
 POWER SUPPLY TO THE NIS CHANNEL II.  THE VOLTAGE LOSS OCCURRED WHEN A
 CAPACITOR IN THE INSTRUMENT INVERTER 112, WHICH SUPPLIES VOLTAGE TO
 INSTRUMENT BUS 112, FAILED.  NIS CHANNEL II IS FED FROM INSTRUMENT BUS
 112.  THE VOLTAGE LOSS CAUSED THE NIS CHANNEL II BISTABLES TO TRIP.
 THE NIS CHANNEL II INTERMEDIATE AND SOURCE TRIP SIGNALS ARE BLOCKED
 DURING NORMAL POWER OPERATION.  LOSS OF ONE INSTRUMENT BUS'S VOLTAGE
 WILL NOT CAUSE A TRIP DURING NORMAL OPERATION. THE TRIP OCCURRED ONLY
 BECAUSE THE UNIT WAS IN SHUTDOWN WITH THE REACTOR TRIP BREAKERS
 UNTRIPPED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  295   1985      021         1     8606020004  199430      06/03/85
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DOCKET:295   ZION 1                    TYPE:PWR
                REGION:  3             NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 STEP 3: COMP RLX-LOGIC RELAY; STEP 4: COMP RLX-AUTO START RELAY.

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

ABSTRACT
 POWER LEVEL - 000%. WHILE UNIT 1 WAS IN COLD SHUTDOWN AND THE REACTOR
 TRIP BREAKERS WERE CLOSED FOR SAFEGUARDS TESTING (PERIODIC TEST 10C),
 INSTRUMENT BUS 112 WAS SWITCHED FROM ITS ALTERNATE (DIRTY) POWER
 SUPPLY TO ITS NORMAL SUPPLY (INVERTER) AT 0947 HOURS AND THE MOMENTARY
 LOSS OF POWER CAUSED THE REACTOR TRIP BREAKERS TO OPEN.  COMPONENT
 COOLING PUMP OE ALSO AUTOSTARTED ON A LOW HEADER PRESSURE SIGNAL WHICH
 WAS FALSE.  THE BREAKERS TRIPPED ON NIS INTERMEDIATE RANGE HI FLUX
 BECAUSE THE AC SUPPLY WAS MOMENTARILY INTERRUPTED AND THE TRIP COULD
 NOT BE BLOCKED IN COLD SHUTDOWN.  THE ZION ELECTRICAL DISTRIBUTION
 PROCEDURE, ZED 2, HAS SUFFICIENT CAUTION STATEMENTS WARNING OF A
 REACTOR TRIP WITH A LOSS OF THE BUS IF THE SOURCE AND INTERMEDIATE
 RANGE NIS TRIPS WERE NOT BLOCKED, BUT WAS NOT REFERENCED PRIOR TO
 SWITCHING.  THERE WERE NO ADVERSE EFFECTS ON THE PLANT.  A WARNING
 SIGN HAS BEEN PLACED AT THE TRANSFER SWITCH TO CAUTION THE OPERATOR TO
 REFER TO THE PROCEDURE PRIOR TO SWITCHING AND A SIMILAR CAUTION
 STATEMENT WILL BE ADDED TO STANDARD OPERATING PROCEDURE SOI-63.  THE
 TRAINING DEPARTMENT WILL REVIEW AND REVISE, AS NECESSARY, TRAINING
 PROGRAMS FOR OPERATORS AND SHIFT CONTROL ROOM ENGINEERS.  NO FURTHER
 ACTION IS REQUIRED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC     EVENT DATE
  295   1989      017          0    8911080058  215788     10/04/89
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DOCKET:295  ZION 1                    TYPE:PWR
                REGION:  3            NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

WATCH-LIST CODES FOR THIS LER ARE:
  60  SPURIOUS/ UNKNOWN CAUSE

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

ABSTRACT
 POWER LEVEL - 000%. UNIT 1 WAS DEFUELED.  SAFEGUARDS WAS DEENERGIZED.
 AT APPROXIMATELY 1330 ON 10/4/89, NUMEROUS ALARMS ASSOCIATED WITH
 STEAM GENERATOR (S/G) LEVEL AND FLOW INDICATION WERE RECEIVED.
 SIMULTANEOUSLY, THE UNIT 1 PROCESS COMPUTER WENT DOWN, AND AT
 APPROXIMATELY THE SAME TIME THE FOLLOWING INSTRUMENTS WERE OBSERVED AS
 BEING 'FAILED ON-SCALE' (FAILED ON-SCALE MEANS THEY SHOULD HAVE
 INDICATED ZERO, BUT WERE INSTEAD READING AN INTERMEDIATE POSITION):
 1LI-537, 1LI-529, 1LI-549, 1LI-519, 1LI-502B, 1LI-548, 1FI-540,
 1FI-520.  ABOUT THREE MINUTES LATER, IT WAS NOTED THAT 1FCV-PR24A HAD
 CLOSED.  1FCV-PR24A IS ONE OF TWO SERIES CONTAINMENT ISOLATION VALVES
 THAT ARE ALSO SUCTION VALVES FOR THE CONTAINMENT SYSTEM PARTICULATE
 IODINE NOBLE GAS (SPING) MONITOR.  THE SPING CLOSES THE CONTAINMENT
 PURGE ISOLATION VALVES UPON DETECTING A HIGH RADIATION CONDITION.  NO
 SPECIFIC CAUSE FOR THE CLOSURE OF 1FCV-PR24A COULD BE FOUND.  THE
 SAFETY SIGNIFICANCE IS MINIMAL BECAUSE THE UNIT WAS DEFUELED, AND
 CONTAINMENT PURGE WAS NOT IN PROGRESS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  302   1987      021         0     8800000000  209907      10/14/87
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DOCKET:302  CRYSTAL RIVER 3           TYPE:PWR
                REGION:  2            NSSS:BW
ARCHITECTURAL ENGINEER: GLBT
     FACILITY OPERATOR: FLORIDA POWER CORPORATION
                SYMBOL: FPC

COMMENTS
 WATCH LIST 946 - SECURITY SAFEGUARDS EVENT DUE TO LOSS OF PLANT SECURITY
 SYSTEM. DETAILS OF SECURITY EVENT DISCUSSED IN SECURITY LER 01-S87-000.
 WATCH 975 - SUSTAINED LOSS OF 2 VITAL INSTRUMENT BUSSES PLUS LOSS OF EVENTS
 RECORDER SYSTEM, CONTROL BOARD ANNUNCIATOR, PLANT SECURITY SYSTEM, AND
 EMERGENCY NOTIFICATION SYSTEM. DETAILS OF LOSS OF POWER TO ANNUNCIATOR
 BOARD AND EVENT RECORDER NOT GIVEN. STEPS 19,23: MODEL 12HEA61C234X2. STEP
 22: CAUSE LX - REPEATED RESET OF LOCKOUT FEATURE. STEP 8: CAUSE AX -
 TESTING.

WATCH-LIST CODES FOR THIS LER ARE:
 946  PHYSICAL SECURITY/SAFEGUARDS
 975  POSSIBLE SIGNIFICANT EVENT
 942  UNUSUAL EVENT
  35  HUMAN ERROR

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

ABSTRACT
 POWER LEVEL - 000%. ON OCTOBER 14, 1987, CRYSTAL RIVER UNIT THREE
 EXPERIENCED A SUSTAINED LOSS OF ELECTRICAL POWER TO VITAL BUSES 'A'
 AND 'C'.  THE PLANT WAS IN THE REFUELING MODE (MODE 6) AND THE
 ENGINEERED SAFEGUARDS (ES) ELECTRICAL BUSES WERE ALIGNED AS SHOWN IN
 FIGURES I AND II.  THE EVENT WAS INITIATED WHEN THE 4160V ES BUS 3A
 WAS IMPROPERLY DE-ENERGIZED IN PREPARATION FOR MAINTENANCE AND
 MODIFICATION ACTIVITIES.  BECAUSE OF A PROTECTIVE INTERLOCK BETWEEN
 THE 4160V BUS AND THE 480V CROSS-TIE BREAKER, POWER WAS ALSO LOST TO
 THE 480V ES BUS 3A AND THE ASSOCIATED VITAL BUSES.  LOSS OF THE VITAL
 BUSES ACTUATED THE ENGINEERED SAFEGUARDS WHICH COMPLICATED THE
 RESTORATION OF POWER BY ACTUATING ADDITIONAL PROTECTIVE INTERLOCKS
 WITHIN THE ES ELECTRICAL DISTRIBUTION SYSTEM. RESTORATION WAS ALSO
 IMPACTED WHEN A PROTECTIVE RELAY COIL BURNED OUT. POWER WAS RESTORED
 BY RE-ESTABLISHING THE 480V ES BUS 3A CROSS-TIE WITH THE 480V ES BUS
 3B.  THE EVENT WAS CAUSED BY PERSONNEL NOT DE-ENERGIZING THE 4160V ES
 BUS 3A IN ACCORDANCE WITH THE PROCEDURE.  THE PERSONNEL INVOLVED HAVE
 BEEN COUNSELED ON THE SIGNIFICANCE OF THE EVENT AND THE IMPORTANCE OF
 FOLLOWING WRITTEN PROCEDURES.  THE BURNED OUT RELAY COIL WAS REPLACED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  302   1988      002         2     8911060206  215719       01/07/88
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DOCKET:302  CRYSTAL RIVER 3           TYPE:PWR
                REGION:  2            NSSS:BW
ARCHITECTURAL ENGINEER: GLBT
     FACILITY OPERATOR: FLORIDA POWER CORPORATION
                SYMBOL: FPC

COMMENTS
 STEP 10: EFF AN - CLOSED TOO FAR (NOT OPENED ENOUGH). STEP 11: CAUSE NB -
 CONDENSATION IN TURBINE OR STEAM LINE.

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR

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

REFERENCE LERS:
    1 302/85-012      2 302/86-021      3 302/88-001

ABSTRACT
 POWER LEVEL - 000%. ON 1/7/88, CRYSTAL RIVER UNIT 3 WAS IN THE HOT
 STANDBY MODE (MODE 3). AN EMERGENCY FEEDWATER ACTUATION OCCURRED ON A
 LOSS OF BOTH MAIN FEEDWATER PUMPS.  THE OPERATING FW PUMP TRIPPED WHEN
 CONTROL POWER WAS LOST TO ITS GOVERNOR..  THE MOTOR DRIVEN EF PUMP
 STARTED AS DESIGNED, BUT THE STEAM DRIVEN EF PUMP STARTED AND THEN
 TRIPPED ON AN OVERSPEED CONDITION.  THE CAUSE OF THE LOSS OF POWER TO
 THE FW PUMP GOVERNOR WAS AN ERROR BY AN I&C TECHNICIAN WORKING ON A
 RADIATION MONITOR WHICH IS POWERED FROM THE SAME BREAKER AS THE FW
 PUMP GOVERNOR.  THE MFW PUMP SHOULD NOT HAVE TRIPPED WHEN CONTROL
 POWER WAS LOST.  THE CAUSE OF THE TRIP OF THE STEAM DRIVEN EF PUMP WAS
 THE IMPROPER POSITIONING OF THE BYPASS VALVE AROUND THE STEAM SUPPLY
 VALVES TO THE PUMP.  THE IDLE FW PUMP WAS STARTED, AND ONCE IT WAS
 VERIFIED THAT THE MAIN FEEDWATER SYSTEM WAS CONTROLLING LEVEL
 PROPERLY, THE EF ACTUATION WAS RESET.  THE TECHNICIAN INVOLVED HAS
 BEEN COUNSELLED IN ACCORDANCE WITH APPROVED PLANT POLICIES.  A
 MECHANICAL LOCKING DEVICE HAS BEEN INSTALLED ON THE STEAM SUPPLY
 BYPASS VALVE, AND A PROCEDURE CHANGE HAS BEEN MADE TO IMPROVE THE
 MONITORING OF THIS VALVE'S POSITION.
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FORM    42                 LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  304   1981      008         2     8108210316  168316       05/07/81
*********************************************************************

DOCKET:304  ZION 2                     TYPE:PWR
                REGION:  3             NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

ABSTRACT
 UNIT TWO TRIPPED AND SAFETY INJECTION ACTUATED DUE TO THE LOSS OF
 INVERTER 213. LOSS OF 213 CAUSED ONE FEEDWATER PUMP TO TRIP DUE TO
 LOSS OF SPEED CONTROL.  AN INVERTER TASK FORCE INVESTIGATED THE
 SHORTED SOLA TRANSFORMER AND DETERMINED HIGH INVERTER INVERTER
 CIRCULATING CURRENT AS THE CAUSE FOR THE TRANSFORMER FAILURE.  A
 TECHNICAL STAFF SURVEILLANCE (TSS) WAS DEVELOPED TO MONITOR AND MAKE
 THE NECESSARY TUNING ADJUSTMENTS TO LIMIT CIRCULATING CURRENT.
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FORM    43                LER SCSS DATA                     08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  304   1984     016          0     8408130456  191055     07/09/84
*******************************************************************

DOCKET:304  ZION 2                    TYPE:PWR
                REGION:  3            NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 STEP 1: EFFECT DX - DAMAGED. STEP 2: COMP XFMR - SLAVE TRANSFORMER. STEP 3:
 COMP XFMR - INVERTER MASTER OUTPUT TRANSFORMER.

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

ABSTRACT
 POWER LEVEL - 000%. A REACTOR TRIP FROM HOT STANDBY, MODE 2, OCCURRED
 DUE TO AN INSTRUMENT INVERTER FAILURE AND CONSEQUENTIAL LOSS OF A
 NUCLEAR INSTRUMENTATION SYSTEM INTERMEDIATE RANGE MONITOR CHANNEL.
 THE INVERTER FAILURE WAS CAUSED BY A SHORT CIRCUIT IN AN OUTPUT
 REGULATING TRANSFORMER.  THE TRANSFORMER INSULATION FAILED DUE TO
 PREVIOUS OVERHEATING CAUSED BY LONG-TERM CIRCULATING CURRENT PROBLEMS.
 THESE PROBLEMS HAVE BEEN ADDRESSED AS A RESULT OF PREVIOUS
 NON-REPORTABLE OCCURRENCES.  ALL DAMAGED TRANSFORMERS IN THIS
 APPLICATION ARE BEING REPLACED AS REPLACEMENT PARTS BECOME AVAILABLE.
 PREVENTATIVE MAINTENANCE AND SURVEILLANCES TO PREVENT RECURRENCE OF
 THE OVERHEATING PROBLEMS ARE BEING PERFORMED. THE UNIT TRIP WOULD NOT
 HAVE OCCURRED IF THE UNIT HAD BEEN AT POWER WHEN THE TRIPS INVOLVED
 ARE BLOCKED.
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FORM    44                LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  304   1987     005         0     8708250267  205832      07/23/87
*********************************************************************

DOCKET:304   ZION 2                   TYPE:PWR
                REGION:  3            NSSS:WE
ARCHITECTURAL.ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 STEP 1: CAUSE AX - CALIBRATION OF THE POWER RANGE NUCLEAR INSTRUMENT
 CHANNEL.

WATCH-LIST CODES FOR THIS LER ARE:
  40  PROCEDURAL DEFICIENCY

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

REFERENCE LERS:
    1.304/87-004

ABSTRACT
 POWER LEVEL - 000%. ON JULY 23, 1987 AT 21:39 HOURS, UNIT 2 WAS IN
 COLD SHUTDOWN AND OPERATING WAS PERFORMING PROCEDURE PT-10 (SAFEGUARDS
 ACTUATION).  THE REACTOR TRIP BREAKERS WERE CLOSED PER PROCEDURE.
 THE BISTABLE FOR POWER RANGE NUCLEAR INSTRUMENTATION (NIS) CHANNEL 43
 WAS TRIPPED FOR MAINTENANCE.  IN STEP 9H OF PT-10, THE OPERATOR
 MANUALLY TRIPPED THE 4KV BREAKER FEEDING SAFEGUARDS BUS 248,
 DE-ENERGIZING NIS CHANNEL 42.  THIS 2/4 COMBINATION OF NIS CHANNELS
 TRIPPED THE REACTOR TRIP BREAKERS.  THE ROOT CAUSE OF THIS EVENT WAS
 PROCEDURAL INADEQUACY CONSISTING OF:  1) NO INITIAL CONDITIONS GIVEN
 FOR EACH INDEPENDENT TEST SECTION AND 2) A CAUTION STATEMENT FOR EACH
 BUS DROP SECTION REFERRING OPERATORS TO AN "APPENDIX A" WHICH DOESN'T
 PROVIDE ANY SPECIFIC BUS-RELATED INFORMATION. THE SAFETY SIGNIFICANCE
 OF THIS EVENT WAS MINIMAL BECAUSE UNIT 2 WAS IN COLD SHUTDOWN WITH ALL
 RODS INSERTED IN THE CORE.  IF THIS EVENT HAD OCCURRED AT POWER
 OPERATIONS, THE RESULT WOULD HAVE BEEN AN INADVERTENT REACTOR TRIP
 AND/OR A SAFETY INJECTION.  AS CORRECTIVE ACTION, PT-10 WILL BE
 REVISED TO INCLUDE SEPARATE INITIAL CONDITIONS FOR EACH SECTION OF THE
 TEST, IMPROVE EACH BUS DROP SECTION SO THAT THE OPERATOR  IS REFERRED
 TO THE ZION ELECTRICAL DISTRIBUTION CONTROLLED DOCUMENT, DELTE
 APPENDIX A, AND CLOSE THE REACTOR TRIP BREAKERS ONLY WHEN REQUIRED.
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FORM    45                LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  305   1985      023         0     8601160068  197722      12/12/85
**********************************************************************

DOCKET:305  KEWAUNEE                  TYPE:PWR
                REGION:  3            NSSS:WE
ARCHITECTURAL ENGINEER: FLPR
     FACILITY OPERATOR: WISCONSIN PUBLIC SERVICE CORP.
                SYMBOL: WPS

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

ABSTRACT
 POWER LEVEL - 100%. AT 0135 CST ON 12-12-85 A LOSS OF POWER TO
 INSTRUMENT BUS I RESULTED IN A PARTIAL LOSS OF INSTRUMENTATION AND
 VARIOUS ALARMS.  THE 1B MAIN FEEDWATER CONTROL VALVE ALSO CLOSED DUE
 TO LOSS OF POSITIONER POWER.  A REACTOR/TURBINE TRIP THEN OCCURRED DUE
 TO A LO SG LEVEL SIGNAL COINCIDENT WITH A STEAM FLOW/FEEDWATER FLOW
 MISMATCH SIGNAL ON 1B SG. THE OPERATORS PERFORMED THE RECOVERY ACTIONS
 SPECIFIED IN EMERGENCY PROCEDURE E-0, 'REACTOR TRIP OR SAFETY
 INJECTION' AND A POSTTRIP REVIEW WAS COMPLETED.  THE AFW SYSTEM
 STARTED AS A RESULT OF A LO-LO SG LEVEL SIGNAL, ASSURING AN ADEQUATE
 HEAT SINK FOR DECAY HEAT REMOVAL. INVESTIGATION OF THE INVERTER FOR
 INSTRUMENT BUS I REVEALED THE CONSTANT VOLTAGE TRANSFORMER HAD FAILED.
 THE INSTRUMENT BUS WAS SWITCHED TO AN ALTERNATE POWER SUPPLY AND THE
 INVERTER WAS DEENERGIZED.  A PLANT STARTUP WAS COMMENCED AT 0524 ON
 12-12-85.  AT 0711 ON 12-12 THE CONSTANT VOLTAGE TRANSFORMER WAS
 REPLACED AND THE INSTRUMENT BUS WAS RETURNED TO ITS NORMAL POWER
 SUPPLY.
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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
305	1986	005	0	8605210371	199401	04/17/86

DOCKET:305 KEWAUNEE TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: FLPR
FACILITY OPERATOR: WISCONSIN PUBLIC SERVICE CORP.
SYMBOL: WPS

COMMENTS

STEP 1: CAUSE AX - ALIGNMENT FOR ROD POSITION CALIBRATION; STEP 2: EFF IX - VOLTAGE FLUCTUATIONS; STEP 3: EFF LX - CHATTERING

REPORTABILITY CODES FOR THIS LER ARE:

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

REFERENCE LERS:

1 305/84-004 2 305/84-012 3 305/84-016 4 305/84-021
5 305/85-012

ABSTRACT

POWER LEVEL - 000%. AT 0855 ON APRIL 17, 1986, WITH THE PLANT IN HOT SHUTDOWN PREPARING FOR STARTUP FOLLOWING THE ANNUAL REFUELING OUTAGE, A REACTOR TRIP OCCURRED DURING THE PERFORMANCE OF A WORK REQUEST ON INTERMEDIATE RANGE NUCLEAR INSTRUMENTATION CHANNEL N35. THE TRIP OCCURRED AS A RESULT OF A BREAKDOWN IN COMMUNICATION BETWEEN PLANT PERSONNEL. AN INSTRUMENT AND CONTROLS MAN MISINTERPRETED INSTRUCTIONS GIVEN BY THE SHIFT SUPERVISOR CONCERNING THE TROUBLESHOOTING HE WAS TO PERFORM ON N35 TO ELIMINATE CHATTERING OF THE P-6 BISTABLE. AS A RESULT, THE MAN REMOVED THE CONTROL POWER FUSES FOR THE CHANNEL PREMATURELY. THE LOSS OF CONTROL POWER COMPLETED THE ONE OUT OF TWO ACTUATION LOGIC FOR THE INTERMEDIATE RANGE HI FLUX REACTOR TRIP. THE OPERATORS PERFORMED THE IMMEDIATE ACTIONS PRESCRIBED IN THE REACTOR TRIP RESPONSE PROCEDURE. TO MITIGATE THE POSSIBILITY OF A SIMILAR OCCURRENCE, THE SHIFT SUPERVISOR NOTIFIED THE INSTRUMENT AND CONTROL SUPERVISOR OF THE SITUATION STRESSING THE IMPORTANCE OF MAINTAINING PROPER COMMUNICATION BETWEEN INSTRUMENT AND CONTROL GROUP AND CONTROL ROOM PERSONNEL WHILE SAFETY RELATED WORK IS BEING PERFORMED. THE REACTOR WAS IN THE SHUTDOWN CONDITION PRIOR TO THE EVENT AND THE REACTOR PROTECTION SYSTEM PERFORMED AS DESIGNED; HENCE, THERE WAS NO IMPACT ON PUBLIC HEALTH AND SAFETY.

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FORM    47                LER SCSS DATA                           08-30-91

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DOCKET  YEAR  LER.NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  309   1983     028          2     8312300094  188550      08/02/83
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DOCKET:309  MAINE YANKEE             TYPE:PWR
               REGION:  1            NSSS:CE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: MAINE YANKEE ATOMIC POWER CO.
               SYMBOL: MYA

ABSTRACT
 DURING A POST IMPLEMENTATION NRC REVIEW OF A BACKFIT TO THE MAIN
 FEEDWATER TRIP SYSTEM, MAINE YANKEE DETERMINED THAT IN SEVERAL
 SPECIFIC INSTANCES THE DESIGN DID NOT MEET SINGLE FAILURE CRITERIA.
 THE SPECIFIC INSTANCES ARE:  A. A FAILURE OF BATTERY BUS NO. 1 WOULD
 PREVENT THE FEEDWATER TRIP SYSTEM FROM TRIPPING MAIN FEEDWATER FLOW TO
 STEAM GENERATOR NO. 2.  B. A FAILURE OF BATTERY BUS NO. 3 WOULD
 PREVENT THE FEEDWATER TRIP SYSTEM FROM TRIPPING MAIN FEEDWATER FLOW TO
 STEAM GENERATOR NO. 3.  C. A FAILURE OF BATTERY BUS NO. 1 OR 3 WOULD
 PREVENT THE FEEDWATER TRIP SYSTEM FROM TRIPPING THE ELECTRIC DRIVEN
 AUXILIARY FEED PUMPS IF THEY WERE RUNNING.  THE BACKFIT TO THE
 FEEDWATER TRIP SYSTEM WAS ORIGINALLY INSTALLED TO INCREASE THE
 RELIABILITY OF THE SYSTEM.  THE BACKFIT WAS TO ELIMINATE THE POTENTIAL
 FOR CONTINUED FEEDING OF A STEAM LINE BREAK DUE TO A SINGLE FAILURE
 OF THE FEEDWATER REGULATING VALVE.  THE DEFICIENCY IN THE FEEDWATER
 TRIP SYSTEM LOGIC RESULTED FROM ERRORS MADE DURING THE SYSTEM DESIGN.
 THE DESIGN CHANGE DESCRIBED IN MAINE YANKEE LETTER DATED NOV. 2, 1983
 WAS IMPLEMENTED TO REMOVE THE SINGLE FAILURE VULNERABILITIES
 IDENTIFIED IN THE MAIN FEEDWATER TRIP SYSTEM.  A COMPLETE REVIEW OF
 THE MAIN FEEDWATER TRIP SYSTEM WAS CONDUCTED TO ENSURE THAT NO OTHER
 SIMILAR DEFICIENCIES EXIST.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  309   1984      007         0     8405220329  190365      04/13/84
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DOCKET:309  MAINE YANKEE               TYPE:PWR
                REGION:  1             NSSS:CE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: MAINE YANKEE ATOMIC POWER CO.
                SYMBOL: MYA

COMMENTS
 STEP 8: CAUSE CODE AX-DRAINED TO FILL THE REFUELING CAVITY. STEP 16: CAUSE
 CODE IX - VOLTAGE TRANSIENTS

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

REFERENCE LERS:
    1 309/84-006

ABSTRACT
 POWER LEVEL - 000%. ON APR 13, WHILE IN A REFUELING SHUTDOWN
 CONDITION, 3 INADVERTENT ACTUATIONS OF SAFEGUARDS SYSTEMS OCCURRED.
 THE FIRST EVENT OCCURRED WHEN OPERATORS WERE REMOVING AN INVERTER FROM
 SERVICE AFTER 2 OF THE AC VITAL BUSES HAD BEEN INCORRECTLY CROSS-TIED
 TO THE INVERTER.  WHEN THE INVERTER DE-ENERGIZED, SAFETY INJECTION
 AUTOMATICALLY UNBLOCKED CAUSING THE ACTUATION OF SAFETY INJECTION,
 RECIRCULATION AND THE FIRST PHASE OF CONTAINMENT ISOLATION.  THE
 SECOND EVENT OCCURRED AFTER THE INVERTERS WERE PROPERLY CROSS-TIED AND
 THE FINAL EVENT OCCURRED WHILE RETURNING TO NORMAL ALIGNMENT.  THE
 LATTER 2 EVENTS WERE MOST LIKELY CAUSED BY VOLTAGE SPIKES ASSOCIATED
 WITH TRANSFERRING BUSES, HOWEVER, THE ACTUAL CAUSES ARE NOT KNOWN.
 THE PLANT WAS IN A REFUELING SHUTDOWN CONDITION.
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FORM    49                LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  309   1986     005          0     8609150212  200940       08/10/86
**********************************************************************

DOCKET:309  MAINE YANKEE               TYPE:PWR
                REGION:  1             NSSS:CE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: MAINE YANKEE ATOMIC POWER CO.
                SYMBOL: MYA

COMMENTS
 STEP 2: COMP RLX-AUTOMATIC POWER TRANSFER SWITCH DEVICE; MODEL KRP11AG.
 STEP 3: MODEL V0658. STEP 10: MODEL 1NN-665. STEP 14: MODEL 5-020-0074-8.

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

REFERENCE LERS:
    1 309/84-016     2 309/86-003

ABSTRACT
 POWER LEVEL - 099%. ON AUGUST 10, 1986, AT 0403, THE PLANT TRIPPED
 FROM 99% POWER DUE TO LOW STEAM GENERATOR LEVEL.  AN AUTOMATIC POWER
 TRANSFER SWITCH DEVICE FOR THE NUMBER ONE FEEDWATER REGULATING SYSTEM
 (FRS) HAD FAILED AT SOME PREVIOUS TIME AND TRANSFERRED NUMBER ONE FRS
 POWER TO THE ALTERNATE POWER SUPPLY.  WHEN THE ALTERNATE POWER SUPPLY
 WAS LOST DUE TO A FAILED STATIC INVERTER, THE NUMBER ONE MAIN
 FEEDWATER REGULATING VALVE CLOSED. THE PARTIAL LOSS OF FEEDWATER
 RESULTED IN A LOW STEAM GENERATOR LEVEL REACTOR PROTECTIVE SYSTEM TRIP
 OF THE REACTOR.  THE INVERTER WAS REPAIRED, THE TRANSFER SWITCH WAS
 REPLACED, AND THE TRANSFER SWITCHES FOR NUMBERS TWO AND THREE FRS WERE
 VERIFIED OPERABLE BEFORE THE PLANT WAS RESTARTED.  AFTER THE PLANT
 TRIP, AN UNRELATED CARDOX FIRE PROTECTION SYSTEM ALARM OCCURRED.
 INVESTIGATION REVEALED A GROUND IN THE MASTER SUPPLY VALVE SOLENOID
 HAD TRIPPED THE CARDOX SYSTEM POWER SUPPLY BREAKER, MAKING THE SYSTEM
 INOPERABLE.
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FORM    50                LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  311   1982      141         1     8312300129  188529      11/21/82
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DOCKET:311  SALEM 2                   TYPE:PWR
               REGION:  1             NSSS:WE
ARCHITECTURAL ENGINEER: PSEG
     FACILITY OPERATOR: PUBLIC SERVICE ELECTRIC & GAS CO.
               SYMBOL: PEG

REFERENCE LERS:
    1 311/82-131     2 272/83-039     3 272/83-043     4 272/83-045
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ABSTRACT

ON TWO SEPARATE OCCASIONS/ ON NOV. 21 AND DEC. 4/ 1982/ DURING ROUTINE OPERATION/ THE CONTROL ROOM OPERATOR DISCOVERED THAT THE P-250 COMPUTER WAS INOPERABLE DUE TO A PARITY ERROR. SINCE IT UTILIZES THE COMPUTER FOR INPUTS AND CALCULATIONS/ THE REACTOR COOLANT SYSTEM (RCS) SUBCOOLING MONITOR WAS DECLARED INOPERABLE AND ACTION STATEMENT 3.3.3.7A WAS ENTERED. WIDE RANGE RCS TEMPERATURE AND PRESSURE INDICATIONS AND STEAM TABLES WERE AVAILABLE THROUGHOUT THE OCCURRENCE. THE EVENT CONSTITUTED OPERATION IN A DEGRADED MODE PER TECH SPEC 6.9.1.9B. THE MALFUNCTIONS OF THE COMPUTER WERE APPARENTLY RELATED WITH PERIODIC INCREASES IN AMBIENT TEMPERATURE DUE TO INSUFFICIENT VENTILATION. IN EACH CASE/ THE COMPUTER WAS REPROGRAMMED AND THE ACTION STATEMENT TERMINATED. THE POWER SUPPLY BREAKER WAS REPLACED AND THE AIR CONDITIONING UNITS WERE REPAIRED. DCRS ARE BEING FORMULATED TO INSTALL SAFETY PARAMETER DISPLAY SYSTEMS.

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  311   1986     007         0      8610010321  201171      08/26/86
*********************************************************************

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

COMMENTS
 OTHER REPORTABILITY - TECH SPECS 3.5.2 (ACTION B).

WATCH-LIST CODES FOR THIS LER ARE:
 941  REPORT ASSOCIATED WITH.10 CFR 50.72
 913  UPDATE NEEDED

REPORTABILITY CODES FOR THIS LER ARE:
  13  10 CFR 50.73(a)(2)(iv): ESF actuations.
  21. OTHER: Voluntary report, special report, Part 21 report,
      etc.

REFERENCE LERS:
    1 311/85-022     2 311/86-008

ABSTRACT.
 POWER LEVEL - 100%. ON AUGUST 26, 1986, A REACTOR TRIP AND SAFETY
 INJECTION WERE INITIATED BY THE SPURIOUS ACTUATION OF BISTABLES AND
 CONTACTS RESULTING FROM A VOLTAGE SPIKE ON THE 2C VITAL INSTRUMENT
 BUS.  FOLLOWING THE REACTOR TRIP AND SAFETY INJECTION, A "LOSS OF
 OFFSITE POWER" SIGNAL WAS RECEIVED.  THE REACTOR TRIP/SAFETY INJECTION
 WAS CAUSED BY A TECHNICIAN INADVERTENTLY SHORTING THE "2C" VITAL
 INSTRUMENT BUS DURING TROUBLESHOOTING.  THE "LOSS OF OFFSITE POWER"
 SIGNAL WAS APPARENTLY THE RESULT OF A SUSTAINED UNDERVOLTAGE CONDITION
 ON THE STATION POWER TRANSFORMERS (SPT'S).  THE UNDERVOLTAGE
 CONDITION WAS APPARENTLY CAUSED BY THE TRANSFER OF THE GROUP BUSSES
 FROM THE AUXILIARY POWER TRANSFORMER TO THE SPT'S AND AGGRAVATED BY
 MULTIPLE TRANSFERS BETWEEN THE STATION POWER TRANSFORMERS.
 INVESTIGATIONS ARE CONTINUING AS TO THE CAUSE OF THE MULTIPLE
 TRANSFERS BETWEEN THE SPT'S.  BOTH UNITS (1 & 2) ARE BEING OPERATED AT
 REDUCED POWER SINCE THE LOAD ON THE ELECTRICAL DISTRIBUTION SYSTEM
 FOR SALEM GENERATING STATION MAY HAVE CONTRIBUTED TO THE SUSTAINED
 UNDERVOLTAGE CONDITION.  A TRANSIENT ANALYSIS OF THE ELECTRICAL
 DISTRIBUTION SYSTEM FOR SALEM GENERATING STATION IS BEING CONDUCTED.
 THE REACTOR TRIP AND SAFETY INJECTION ARE REPORTABLE IN ACCORDANCE
 WITH 10CFR 50.73(A)(2)(IV) AND TECHNICAL SPECIFICATION 3.5.2 (ACTION
 B), RESPECTIVELY.
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FORM    52               LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  311   1988      014         0     8807290082  209958       06/22/88
*********************************************************************

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

COMMENTS
 STEP 5: EFF KX - CYCLED OPEN/CLOSED. STEP 21: CAUSE AX - CLOSED DUE TO
 LEAKAGE. $DE/DE/1.

WATCH-LIST CODES FOR THIS LER ARE:
  34  DESIGN ERROR OR INADEQUACY
 941  REPORT ASSOCIATED WITH 10 CFR 50.72

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

REFERENCE LERS:
    1 311/85-022     2 311/86-007

ABSTRACT
 POWER LEVEL - 100%. ON 6/22/88, DURING ROUTINE POWER OPERATION, A
 REACTOR TRIP AND SAFETY INJECTION (SI) OCCURRED. THE REACTOR TRIP
 OCCURRED WHEN THE SOLID STATE PROTECTION SYSTEM (SSPS) (JC) SENSED NO.
 23 REACTOR COOLANT PUMP (RCP) BREAKER OPEN.  A REACTOR TRIP WILL
 OCCUR WHEN ONE OF THE FOUR RCP BREAKERS OPENS WITH POWER ABOVE P-8
 (36%).  THE SI WAS THE RESULT OF A COMBINATION OF THE INDICATION OF
 NOS. 22 AND 23 STEAMLINE LOW PRESSURE (LESS THAN 500 PSIG) AND NOS. 21
 AND 22 HIGH STEAMLINE FLOW.  THE UNIT WAS STABILIZED IN MODE 3 (HOT
 STANDBY).  THE APPARENT ROOT CAUSE OF THIS EVENT HAS BEEN ATTRIBUTED
 TO THE FAILURE OF THE "C" VITAL INSTRUMENT BUS INVERTER.  VALVE 2PR2
 AND THE NOS. 23 AND 25 CFCUS (WHICH FAILED TO FUNCTION AS DESIGNED
 DURING THE EVENT) WERE TESTED TO ENSURE OPERABILITY.  NO PROBLEMS WERE
 IDENTIFIED.  THE "C" VITAL INSTRUMENT BUS INVERTER WAS REPAIRED.  THE
 UNIT WAS RETURNED TO SERVICE ON JUNE 25, 1988.  A DESIGN CHANGE HAS
 BEEN INITIATED (2EC-2245) TO DELETE THE REACTOR TRIP LOGIC WHICH
 OCCURS WHEN "ONE OUT OF FOUR RCP BREAKERS OPEN" IS MET.  THIS DESIGN
 CHANGE WILL BE IMPLEMENTED DURING THE UPCOMING FOURTH REFUELING OUTAGE
 PENDING APPROVAL BY THE NRC OF A SUBMITTED LICENSE CHANGE REQUEST.  A
 SIMILAR DESIGN CHANGE FOR SALEM UNIT 1 WILL BE IMPLEMENTED DURING ITS
 NEXT REFUELING OUTAGE.  A DESIGN CHANGE IS BEING PREPARED TO REPLACE
 THE INVERTERS WITH STATE OF THE ART EQUIPMENT.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  311   1989      005         0     8904180088  213562      03/12/89
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DOCKET:311  SALEM 2                  TYPE:PWR
                REGION:  1           NSSS:WE
ARCHITECTURAL ENGINEER: PSEG
     FACILITY OPERATOR: PUBLIC SERVICE ELECTRIC & GAS CO.
                SYMBOL: PEG

COMMENTS
 SPECIAL REPORT PERSUANT TO TECH SPECS 3.5.2 (ACTION B).

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR
 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%. ON 3/12/89, BOTH STEAM GENERATOR FEED PUMPS
 (SGFPS) REDUCED THEIR TURBINE SPEED TO IDLE.  THE REACTOR SUBSEQUENTLY
 TRIPPED ON NO. 23 STEAM GENERATOR (S/G) FEED FLOW/STEAM FLOW MISMATCH
 WITH LOW S/G LEVEL.  AFTER THE REACTOR TRIPPED, A SAFETY INJECTION
 (SI) OCCURRED ON HIGH STEAMLINE FLOW COINCIDENT WITH LOW STEAMLINE
 PRESSURE.  THE ROOT CAUSE OF THIS EVENT HAS BEEN ATTRIBUTED TO AN
 EQUIPMENT FAILURE:  A CONTROL POWER FUSE, IN THE "D" VITAL INSTRUMENT
 INVERTER LOW VOLTAGE POWER SOURCE, CAME OUT OF ITS FUSE HOLDER
 RESULTING IN INVERTER FAILURE AND DEENERGIZATION OF "D" VITAL
 INSTRUMENT BUS.  INVESTIGATIONS CONCLUDED THE FUSE MORE THAN LIKELY
 HAD COME OUT OF THE FUSE HOLDER DUE TO IMPROPER INSTALLATION AT SOME
 POINT IN THE PAST.  THE FUSE ASSEMBLY DID NOT SHOW ANY SIGN OF DAMAGE
 OR IMPAIRMENT WHICH WOULD CAUSE THE FUSE TO DISLODGE. SUBSEQUENTLY,
 THE INVERTER FUSE WAS REINSTALLED AND SUCCESSFULLY CHECKED FOR
 CONTINUITY AND TIGHTNESS.  THE STATIC INVERTER WAS STARTED, TESTED
 SATISFACTORILY AND RETURNED TO SERVICE.  ENGINEERING IS INVESTIGATING
 THE FEASIBILITY OF SEPARATING THE PRESSURE CHANNELS TO OTHER VITAL
 INVERTERS THEREBY ELIMINATING THE POSSIBILITY OF THE OCCURRENCE OF A
 SIMILARLY CAUSED SI.  NEW VITAL INVERTERS ARE SCHEDULED TO BE
 INSTALLED DURING THE NEXT UNIT 2 REFUELING OUTAGE.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
  312   1987      026         1     8708050042  205606      03/10/87
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DOCKET:312  RANCHO SECO                TYPE:PWR
                 REGION:  5            NSSS:BW
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: SACRAMENTO MUNICIPAL UTIL. DISTRICT
                SYMBOL: SMU

COMMENTS
 STEP 32: COMP XI- SATURATION INDICATOR.

WATCH-LIST CODES FOR THIS LER ARE:
  33  CONSTRUCTION ERROR OR INADEQUACY
  40  PROCEDURAL DEFICIENCY

REPORTABILITY CODES FOR THIS LER ARE:
  11  10 CFR 50.73(a)(2)(ii): Unanalyzed conditions.
  14  10 CFR 50.73(a)(2)(v): Event that could have prevented
      fulfillment of a safety function.
  15  10 CFR 50.73(a)(2)(vii): Single failure criteria.

REFERENCE LERS:
    1 312/85-015     2 312/86-010     3 312/87-013

ABSTRACT
 POWER LEVEL - 000%. DURING THE PRESENT COLD SHUTDOWN CONDITIONS, IT
 WAS DETERMINED THAT SIX CLASS 1 INSTRUMENTATION CABLES (NOT ASSOCIATED
 WITH RPS/SFAS) ARE ROUTED IN POWER CONTROL RACEWAYS, TWENTY POWER
 CABLES ARE ROUTED IN CLASS 1 INSTRUMENTATION RACEWAYS, AND SIXTEEN
 CONTROL CABLES ARE ROUTED IN CLASS 1 INSTRUMENTATION RACEWAYS.  THIS
 INTERMIXING IS CONTRARY TO THE REQUIREMENTS OF USAR SECTION
 8.2.2.11.H.5 (10 CFR 50.73(A)(2)(II), 50.73(A)(2)(V) AND
 50.73(A)(2)(VII)).  IN ADDITION, CONTRARY TO THE REQUIREMENTS OF USAR
 SECTION 8.2.2.11.H.2, NINETEEN RPS/SFAS INSTRUMENTATION CABLES WERE
 ROUTED IN INSTRUMENTATION CABLE TRAYS INSTEAD OF CONDUIT.  THE
 ASSESSMENT OF THE SAFETY CONSEQUENCES OF THE INTERMIXED CABLES IS
 CONTINUING.  PRIOR TO ENTERING THE DECAY HEAT SYSTEM OUTAGE, THE
 INTERMIXED CABLES INVOLVED FOR THE DECAY HEAT SYSTEM OUTAGE HAD BEEN
 ANALYZED AND DETERMINED TO BE ACCEPTABLE EXCEPT FOR CABLE 122C336B,
 FOR WHICH CORRECTIVE ACTION WAS TAKEN.  ALL INTERMIXED CABLES FOR THE
 DECAY HEAT SYSTEM OPERATING CONFIGURATION HAVE BEEN ANALYZED AND
 DETERMINED ACCEPTABLE.  THE INSTRUMENTATION CABLES ROUTED IN
 INSTRUMENTATION CABLE TRAYS INSTEAD OF DEDICATED CONDUIT HAVE BEEN
 ANALYZED AND ARE ACCEPTABLE BASED ON THE BABCOCK AND WILCOX DESIGN
 INTERFACE CRITERIA DOCUMENT.
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FORM    55                LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  312   1989      004         0     8905010104  213732      03/28/89
********************************************************************

DOCKET:312  RANCHO SECO              TYPE:PWR
                REGION:  5           NSSS:BW
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: SACRAMENTO MUNICIPAL UTIL. DISTRICT
                SYMBOL: SMU

COMMENTS
 STEP 3: MODEL 500-GE-125-60-115; EFF IX - LARGE VOLTAGE SWING DURING
 AUTORESTART. STEP 4: MODELS BFTA AND BFTB. STEPS 5,6,11: MODEL EHM-32AN.
 STEP 21: COMP MEI - VALVE COVERS. STEP 22: EFF HK - LOW VACUUM.

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR
  34  DESIGN ERROR OR INADEQUACY

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

REFERENCE LERS:
    1 312/78-001     2 312/79-001     3 312/84-007     4 312/85-023
    5 312/85-025     6 312/88-018

ABSTRACT
 POWER LEVEL - 093%. ON MARCH 28, 1989, AT 1516 HOURS, WHILE OPERATING
 AT 93% POWER, THE PLANT'S MAIN FEEDWATER PUMPS (MFPS) EXPERIENCED
 SPEED CONTROL PROBLEMS.  THIS RESULTED IN A RAPID LOSS OF FEEDWATER
 FLOW TO THE STEAM GENERATORS.  THE CORRESPONDING INCREASE IN REACTOR
 COOLANT SYSTEM (RCS) PRESSURE CAUSED THE PLANT TO AUTOMATICALLY SHUT
 DOWN. BECAUSE OF THE MFP CONTROLLER PROBLEMS, THE INTEGRATED CONTROL
 SYSTEM (ICS) RESPONSE TO THE PRE-TRIP UNDERFEED CAUSED THE POST-TRIP
 FEEDWATER REFEED TO THE RCS TO BE GREATER THAN EXPECTED.  THIS
 RESULTED IN A PRESSURIZER LEVEL DROP TO THE ELEVATION OF THE LEVEL
 INDICATOR TAP. THE PLANT DID NOT EXIT THE POST-TRIP WINDOW, AND NORMAL
 POST-TRIP LEVELS WERE ESTABLISHED 14 MINUTES AFTER THE TRIP.
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FORM    56                 LER SCSS DATA                     08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  317   1985      002         0     8503140392  194176       02/05/85
*********************************************************************

DOCKET:317  CALVERT CLIFFS 1          TYPE:PWR
                REGION:  1            NSSS:CE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: BALTIMORE GAS & ELECTRIC CO.
                SYMBOL: BGE

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

ABSTRACT
 POWER LEVEL - 100%. AT 1658 ON 2-5-85, CALVERT CLIFFS UNIT 1 REACTOR
 TRIPPED FROM 100% POWER ON A LOW SG WATER LEVEL CONDITION CAUSED BY A
 TEMPORARY REDUCTION AND SUBSEQUENT LOSS OF MAIN FEEDWATER FLOW.  THE
 UNIT 1 AUX BLDG OPERATOR INCORRECTLY DEENERGIZED A PORTION OF THE
 FEEDWATER REGULATING SYSTEM WHILE ATTEMPTING TO DEENERGIZE #11
 INSTRUMENT AIR COMPRESSOR.  THIS CAUSED THE STEAM GENERATOR FEED PUMPS
 TO SLOW DOWN EVEN THOUGH REACTOR POWER REMAINED AT 100%.  REALIZING
 HE HAD OPENED THE WRONG BREAKER, THE AUX BLDG OPERATOR RESHUT THE
 BREAKER TO THE DEENERGIZED PORTION OF THE FEEDWATER REGULATING SYSTEM.
 THIS SENT THE ACTUAL 100% FEEDWATER DEMAND SIGNAL TO THE SG FEED
 PUMPS SPEED CONTROL SYSTEM AND CAUSED THE SG FEED PUMPS TO RAPIDLY
 ACCELERATE.  THIS EXTREME TRANSIENT CAUSED THE SG FEED PUMPS TO TRIP
 ON LOW SUCTION PRESSURE.  UNIT 1 THEN TRIPPED ON LOW SG WATER LEVEL.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  318   1988      002         2     8804200389  208918      01/22/88
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DOCKET:318  CALVERT CLIFFS 2          TYPE:PWR
                REGION:  1            NSSS:CE
ARCHITECTURAL ENGINEER: BECH.
     FACILITY OPERATOR: BALTIMORE GAS & ELECTRIC CO.
                SYMBOL: BGE

COMMENTS
 STEP 15: EFF HX - PUMP FLOW ON HOLD ( AS IS ). STEP 20: EFF HL - CHANGE IN
 NET POSITIVE SUCTION HEAD. $MPA/PT

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR

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

REFERENCE LERS:
    1 318/86-007

ABSTRACT
 POWER LEVEL - 100%. DURING TROUBLESHOOTING OF THE THREE PHASE UNIT 2
 COMPUTER INVERTER, POWER WAS LOST TO THE NON-VITAL 208/120V A.C.
 INSTRUMENT BUS 22 (2Y10).  THE DE-ENERGIZATION OF 2Y10 RESULTED IN
 REDUCED FEEDWATER FLOW AND CAUSED THE REACTOR TO BE TRIPPED NEAR THE
 LOW STEAM GENERATOR LEVEL SETPOINT.  THE LOSS OF INSTRUMENT BUS 22
 (2Y10) WAS CAUSED BY PERSONNEL ERROR WHEN A PLANT ELECTRICIAN'S
 MISINTERPRETATION OF ELECTRICAL PRINTS AND UNCLEAR COMMUNICATIONS WITH
 THE INVERTER VENDOR LED TO THE PLACEMENT OF TEMPORARY JUMPERS IN THE
 INVERTER, CAUSING A DIRECT SHORT CIRCUIT THAT WAS REFLECTED BACK TO
 THE MAIN POWER FEED CIRCUIT BREAKER CAUSING IT TO TRIP THUS
 DE-ENERGIZING INSTRUMENT BUS 22 (2Y10). CORRECTIVE ACTIONS ARE:  1.  A
 STUDY OF THE PROPER SIZE FUSING AND FUSE TO CIRCUIT BREAKER
 COORDINATION IS IN PROGRESS.  2.  CLARIFY THE INVERTER MANUFACTURERS
 ELECTRICAL PRINTS TO SHOW THE ACTUAL PLACEMENT, IN THE CIRCUIT, OF THE
 POWER FACTOR CORRECTION CAPACITORS.  3. INVESTIGATE THE USE OF
 "SPECIAL" PROCEDURES IN TROUBLESHOOTING COMPLEX EQUIPMENT.  4.  ALL
 MAINTENANCE ELECTRICIANS WILL BE TRAINED ON THE DETAILS OF THIS EVENT
 AS PART OF OUR CONTINUING TRAINING PROGRAM.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC     EVENT DATE
  321   1985      010         1     8508230260  197783     01/16/85
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DOCKET:321   HATCH 1.                    TYPE:BWR
                REGION:  2               NSSS:GE
ARCHITECTURAL ENGINEER: BESS
     FACILITY OPERATOR: GEORGIA POWER CO.
                SYMBOL: GPC

COMMENTS
 STEP 12: COMP MSC - SPRING, TAPPET AND BALL ASSEMBLY; STEP 18: EFFECT HX -
 FLOW FLUCTUATIONS.

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

REFERENCE LERS:
    1 321/85-003

ABSTRACT
 POWER LEVEL - 061%. ON 1-16-85 AT 0955 CST, WITH THE REACTOR MODE
 SWITCH IN THE RUN POSITION AND REACTOR POWER AT 1496 MWT UNIT 1
 RECEIVED A REACTOR SCRAM ON A REACTOR VESSEL LOW WATER LEVEL SIGNAL.
 THIS EVENT WAS THE RESULT OF A VITAL AC POWER SUPPLY TRIP, WHICH
 CAUSED BOTH 'A' AND 'B' REACTOR FEEDPUMPS TO RUN BACK.  CONSEQUENTLY,
 A LOW WATER LEVEL CONDITION RESULTED.  AT 1102 CST, WHILE PLANT
 PERSONNEL WERE LOWERING REACTOR PRESSURE, THE REACTOR VESSEL WATER
 LEVEL INCREASED TO THE HIGH LEVEL SETPOINT AND THE REACTOR FEEDPUMPS
 TRIPPED.  BEFORE PLANT PERSONNEL COULD RESET THE FEEDPUMPS, WITH
 REACTOR POWER AT 0 MWT, THE REACTOR LEVEL DROPPED TO THE LOW LEVEL
 SETPOINT.  THIS CAUSED AN ACTUATION OF THE RPS LOGIC (I.E., NOT A
 SCRAM BECAUSE ALL OF THE CONTROL RODS WERE STILL INSERTED AFTER THE
 0955 CST SCRAM), AND A GROUP 2 ISOLATION. PLANT PERSONNEL RESTORED THE
 REACTOR LEVEL TO NORMAL VIA THE 'A' REACTOR FEEDPUMP AND THE BOOSTER
 PUMPS AS THE VESSEL CONTINUED TO DEPRESSURIZE. NO ACTUAL OR POTENTIAL
 SAFETY CONSEQUENCES OR IMPLICATIONS RESULTED FROM THESE EVENTS.  THESE
 EVENTS HAD NO IMPACT ON ANY OTHER UNIT 1 SYSTEM OR UNIT 2.  THESE ARE
 NON-REPETITIVE EVENTS; HOWEVER, THE LAST REACTOR SCRAM IS REFERENCED
 IN LER 50-321/85-03.
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FORM    59                LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  321   1987      011         1     8906010264  213971      07/23/87
**********************************************************************

DOCKET:321  HATCH 1                  TYPE:BWR
                REGION:  2           NSSS:GE
ARCHITECTURAL ENGINEER: BESS
     FACILITY OPERATOR: GEORGIA POWER CO.
                SYMBOL: GPC

COMMENTS
 STEP 2: PSYS HS - VITAL AC ROOM. STEP 4: MODEL 120G2500-FE3. STEP 21: MODEL
 8270-849.

WATCH-LIST CODES FOR THIS LER ARE:
  34  DESIGN ERROR OR INADEQUACY

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

REFERENCE LERS:
    1 321/85-010     2 366/87-006

ABSTRACT
 POWER LEVEL - 100%. ON 7/23/87 AT APPROXIMATELY 2114 CDT, UNIT 1 WAS
 IN THE RUN MODE AT AN APPROXIMATE POWER LEVEL OF 2436 MWT
 (APPROXIMATELY 100 PERCENT OF RATED THERMAL POWER).  AT THAT TIME,
 VITAL AC (EIIS CODE EE) POWER WAS LOST. THIS RESULTED IN A DECREASE IN
 THE REACTOR FEEDWATER PUMPS FLOW AND A DECREASE IN REACTOR WATER
 LEVEL.  THE REACTOR WATER LEVEL DECREASED TO THE REACTOR PROTECTION
 SYSTEM (RPS EIIS CODE JC) ACTUATION SETPOINT AND A REACTOR SCRAM
 OCCURRED.  THE ROOT CAUSE OF THIS EVENT IS ATTRIBUTED TO EQUIPMENT
 FAILURE DUE TO INADEQUATE VENTILATION DESIGN TO ENSURE THE VITAL AC
 EQUIPMENT IS PROPERLY COOLED.  THE ELECTRONIC EQUIPMENT FAILURE IN THE
 INVERTERS IS ATTRIBUTED TO THE HIGH ROOM TEMPERATURES. CORRECTIVE
 ACTIONS FOR THIS EVENT INCLUDE:  1) REFURBISHING THE INVERTER, 2)
 ADDING TEMPORARY COOLING TO THE INVERTER ROOMS, 3) INSTALLING A NEW
 HVAC SYSTEM FOR COOLING INVERTER ROOMS, 4) DEVELOPING A PREVENTIVE
 MAINTENANCE PROCEDURE FOR THE UNIT 1 AND 2 INVERTERS, 5) PERFORMING AN
 ENGINEERING EVALUATION FOR INVERTER REPLACEMENT, 6) INSTALLING NEW
 VITAL AC INVERTERS FOR BOTH UNITS 1 AND 2, 7) REPLACING THE FAILED
 RCIC EGM MODULE, AND 8) PERFORMING A FOLLOW UP INSPECTION OF THE HPCI
 EGM MODULE.
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FORM    60                LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  322   1988     016         1      9005240099  218259     10/11/88
*********************************************************************

DOCKET:322   SHOREHAM                   TYPE:BWR
                REGION:  1              NSSS:GE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: LONG ISLAND LIGHTING CO.
                SYMBOL: LIL

WATCH-LIST CODES FOR THIS LER ARE:
 941  REPORT ASSOCIATED WITH 10 CFR 50.72
  20  EQUIPMENT FAILURE

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

REFERENCE LERS:
    1 322/85-040     2 322/85-046     3 322/86-030     4 322/86-031
    5 322/88-001

ABSTRACT
 POWER LEVEL - 000%. ON 10/11/88 AT 1134, LARGE FLUCTUATIONS IN SYSTEM
 VOLTAGE CAUSED THE UNPLANNED ACTUATION OF ONE ENGINEERED SAFETY
 FEATURE (ESF) AND VALVE MOVEMENT IN THREE OTHER ESF SYSTEMS.  THE
 PLANT WAS IN OPERATIONAL CONDITION 4 (COLD SHUTDOWN) WITH THE MODE
 SWITCH IN SHUTDOWN AND ALL CONTROL RODS INSERTED.  THE VOLTAGE
 FLUCTUATIONS WERE CAUSED BY MOMENTARY SHORTS TO GROUND WHERE THE 138
 KV LINES AND THE 69 KV LINES RUN TOGETHER THROUGH A SUBSTATION LOCATED
 5 MILES SOUTH OF THE SITE.  A LOOSE SHIELD WIRE MOMENTARILY CAUSED
 THE 138 KV LINES TO SHORT TO GROUND, THEN SKIPPED OVER TO THE 69 KV
 LINES TO MOMENTARILY CAUSE ANOTHER SHORT TO GROUND.  THIS EVENT ENDED
 WHEN A PASSING TRAIN CAUSED THE SHIELD WIRE TO DISENGAGE FROM THE
 TRANSMISSION LINES.  THE VOLTAGE FLUCTUATIONS CAUSED THE REACTOR
 BUILDING STANDBY VENTILATION SYSTEM (RBSVS) TO ACTUATE ALONG WITH SOME
 VALVE MOVEMENT IN THE CONTROL ROOM AIR CONDITIONING (CRAC) SYSTEM,
 THE REACTOR BUILDING CLOSED LOOP COOLING WATER (RBCLCW) SYSTEM AND THE
 REACTOR BUILDING SERVICE WATER (RBSW) SYSTEM.  OPERATORS TOOK THE
 NECESSARY ACTIONS TO RETURN THE ESF SYSTEMS TO THEIR NORMAL
 CONDITIONS.  TO ENSURE PERSONNEL WERE AWARE OF THE RAMIFICATIONS OF
 SUCH AN EVENT, THIS LER WAS READY BY ALL OPERATORS.
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FORM    61                LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  322   1990      008         0     9010170325  219729      09/15/90
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DOCKET:322  SHOREHAM                     TYPE:BWR
                REGION:  1               NSSS:GE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: LONG ISLAND LIGHTING CO.
                SYMBOL: LIL

COMMENTS
 STEP 12: EFF IX - SWITCHED TO ALTERNATE POWER SUPPLY. STEP 15: COMP MEI -
 REMOTE DATA ACQUISITION UNITS.

WATCH-LIST CODES FOR THIS LER ARE:
  11  ACTS OF NATURE
 941  REPORT ASSOCIATED WITH 10 CFR 50.72

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

REFERENCE LERS:
    1 322/85-040     2 322/85-046     3 322/86-030     4 322/88-016

ABSTRACT
 POWER LEVEL - 000%. ON 9/15/90, AT 0732, A LIGHTNING STRIKE DURING A
 SEVERE THUNDERSTORM CAUSED THE UNPLANNED ACTUATION OF ENGINEERED
 SAFETY FEATURE SYSTEMS REACTOR BUILDING STANDBY VENTILATION SYSTEM,
 AND CONTROL ROOM AIR CONDITIONING AND THE CLOSURE OF CONTAINMENT
 ISOLATION VALVES FOR THE REACTOR WATER CLEANUP SYSTEM, THE REACTOR
 BUILDING FLOOR DRAINS AND THE REACTOR BUILDING EQUIPMENT DRAINS.
 REACTOR PROTECTION SYSTEM BUS "B" WAS DEENERGIZED DUE TO TRIPPING OF
 AN ELECTRICAL PROTECTION ASSEMBLY BREAKER.  OTHER EQUIPMENT EFFECTS
 CAUSED BY THE LIGHTING STRIKE INCLUDE TRIPPING OF THE STATION AIR
 COMPRESSORS, LOSS OF THE PLANT PROCESS COMPUTER, A CONTROL ROOM
 VENTILATION MONITOR GOING INTO A FAILURE MODE AND BLOWN CIRCUIT CARDS
 IN SEVERAL REMOTE DATA ACQUISITION UNITS IN THE PLANT SECURITY SYSTEM.
 OPERATORS AND TECHNICIANS RESTARTED THE AFFECTED EQUIPMENT AND
 RESTORED SYSTEMS TO THEIR NORMAL LINEUPS.  PLANT MANAGEMENT PERSONNEL
 WERE NOTIFIED OF THE EVENT AND THE NRC WAS NOTIFIED AT 1006 PER
 10CFR50.72(B)(2)(II).  THIS LICENSEE EVENT REPORT IS BEING SUBMITTED
 PER 10CFR50.73(A)(2)(IV).
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC.    EVENT DATE
  325   1980      026         0     8003180395  155308      02/12/80
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DOCKET:325  BRUNSWICK 1               TYPE:BWR
                REGION:  2            NSSS:GE
ARCHITECTURAL ENGINEER: UECX
     FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
                SYMBOL: CPL

ABSTRACT
 POWER LEVEL - 099%. CAUSE - BLOWN FUSE IN 28 VDC POWER SUPPLY. DURING
 NORMAL FULL POWER OPERATION, THE CONTROL OPERATOR RECEIVED UPSCALE
 DOWNSCALE, INOPERABLE, AND ROD BLOCK ALARMS ON ROD BLOCK MONITOR "A".
 NO EVOLUTIONS OR TESTING WERE IN PROGRESS AT THE TIME. A BLOWN FUSE
 WAS FOUND IN THE 28 VDC POWER SUPPLY. THE FUSE WAS REPLACED AND THE 28
 VDC POWER SUPPLY WAS CLOSELY MONITORED FOR THREE DAYS, WITH PROPER
 OPERATION OBSERVED. NO PROBLEM COULD BE DISCOVERED. BLOWN FUSES ON
 THIS EQUIPMENT HAS NOT BEEN A PROBLEM IN THE PAST.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  325   1980      091         0     8101200629  163557      12/11/80
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DOCKET:325  BRUNSWICK 1               TYPE:BWR
                REGION:  2            NSSS:GE
ARCHITECTURAL ENGINEER: UECX
     FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
                SYMBOL: CPL

ABSTRACT
 POWER LEVEL - 097%. CAUSE - DEFECTIVE POWER SUPPLY AND ZENER DIODE.
 DURING TESTING, ROD BLOCK MONITOR B WAS OBSERVED INDICATING DOWNSCALE.
 THE MONITOR WAS THEN DECLARED INOPERABLE AS REQUIRED BY TECH. SPECS.
 THE MONITOR INDICATED DOWNSCALE DUE TO A FAILED POWER SUPPLY CAUSED BY
 A DEFECTIVE POWER SUPPLY REGULATOR AND ZENER DIODE IN THE POWER
 SUPPLY REGULATOR CIRCUIT. THE REGULATOR AND DIODE WERE REPLACED AND
 THE MONITOR RETURNED TO NORMAL OPERATION.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  325   1985     022          1     8507010620  197922      05/02/85
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DOCKET:325  BRUNSWICK 1              TYPE:BWR
                REGION:  2           NSSS:GE
ARCHITECTURAL ENGINEER: UECX
     FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
                SYMBOL: CPL

COMMENTS
 STEP 3: PART NO. 700DC-N200Z1.

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

ABSTRACT
 POWER LEVEL - 000%. DURING A UNIT 1 REFUEL/MAINTENANCE OUTAGE, ON
 5-02-85, AT 1407, A PRIMARY CONTAINMENT GROUP 6 ISOLATION OCCURRED,
 THE REACTOR BUILDING VENTILATION SYSTEM AUTOMATICALLY ISOLATED, AND
 TRAIN 1B OF THE REACTOR BUILDING STANDBY GAS TREATMENT (SBGT) SYSTEM
 AUTOMATICALLY STARTED.  A REACTOR BUILDING FIRE WATCH HAD OBSERVED
 SMOKE EMANATING FROM SBGT TRAIN 1A AND REPORTED THE DISCOVERY TO THE
 CONTROL ROOM.  OPERATIONS PERSONNEL ASSESSED THE PROBLEM AND
 DEENERGIZED THE POWER SUPPLY (CIRCUIT BREAKER NO. 25 IN POWER SUPPLY
 PANEL 1C) TO THE TROUBLE START CONTROL RELAY CIRCUITRY OF SBGT TRAIN
 1A, THEREBY RESULTING IN THE EVENT.  RELAY CR-4, WHICH IS IN THE
 CIRCUITRY TO THE UNIT SBGT TRAINS' HIGH TEMPERATURE CONTROL ROOM
 ANNUNCIATOR, HAD OVERHEATED AND CAUGHT FIRE.  THE FIRE WAS REPORTED
 OUT AT 1418. SBGT TRAIN 1B WAS SECURED AND RETURNED TO STANDBY, AND
 THE ISOLATION SIGNALS WERE RESET.  THE INVOLVED SMOKE DID NOT AFFECT
 OPERABILITY OF SBGT TRAIN 1B.  ON 5-07-85, CR-4 (ALLEN-BRADLEY PART
 NO. 700DC-N200Z1) TO SBGT 1A WAS REPLACED.  THE FAILURE OF CR-4 IS
 ATTRIBUTED TO RELAY COIL INSULATION BREAKDOWN RESULTING FROM
 INDETERMINATE CAUSES.  THE CR-4 RELAYS IN SBGT 1B AND UNIT 2 SBGTS 2A
 AND 2B WERE VISUALLY INSPECTED FOR SIGNS OF OVERHEATING OR PHYSICAL
 DEGRADATION WITH NO PROBLEMS FOUND.
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FORM    65              LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER. REVISION  DCS NUMBER   NSIC     EVENT DATE
  327   1980      159         0     8011040606  160938      10/15/80
*******************************************************************

DOCKET:327  SEQUOYAH 1               TYPE:PWR
               REGION:  2            NSSS:WE
ARCHITECTURAL ENGINEER: TVAX
     FACILITY OPERATOR: TENNESSEE VALLEY AUTHORITY
               SYMBOL: TVA

COMMENTS
 STEP 2: ISYS SW - UNSPECIFIED AREAS.

ABSTRACT
 POWER LEVEL - 000%. CAUSE - AFWS PUMP LOCK INDEPENDENT CONTROL POWER.
 NOTIFICATION WAS RECEIVED FROM TVA ENGINEERING DESIGN THAT A MAJOR
 FEEDWATER LINE RUPTURE ON EITHER STEAM GENERATOR 3 OR 4, CONCURRENT
 WITH A LOSS OF CHANNEL Q-I VITAL INSTRUMENT POWER COULD PREVENT THE
 AUXILIARY FEEDWATER SYSTEM FROM OPERATING AS ASSUMED IN THE SAR.
 FAILURE OF ENGINEERING DESIGN TO PROVIDE SUFFICIENT INDEPENDENCE OF
 CONTROL POWER SUPPLIES TO THE A AND B TRAIN MOTOR DRIVEN PUMPS
 AUXILIARY FEEDWATER SYSTEMS AND THE TURBINE DRIVEN PUMP AUXILIARY
 FEEDWATER SYSTEM. A MODIFICATION HAS BEEN MADE WHICH PROVIDES ADEQUATE
 INDEPENDENCE OF THE CONTROL POWER SUPPLIES AND INSURES THAT THE
 AUXILIARY FEEDWATER SYSTEM IS CAPABLE OF PERFORMING AS ASSUMED IN THE
 SAR.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  328   1985     004         0      8503250308  194177      02/15/85
*******************************************************************************

DOCKET:328  SEQUOYAH 2                TYPE:PWR
              REGION:  2              NSSS:WE
ARCHITECTURAL ENGINEER: TVAX
     FACILITY OPERATOR: TENNESSEE VALLEY AUTHORITY
                SYMBOL: TVA

COMMENTS
 STEP 18: EFF HX - FLOW OSCILLATIONS; STEPS 15, 16: COMP MEI - FILTER COVER.

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

ABSTRACT
 POWER LEVEL - 100%. TWO REACTOR TRIPS OCCURRED ON 2-15-85, AND
 2-17-85, RESPECTIVELY, DUE TO LO-LO SG WATER LEVEL.  ALL REACTOR
 PROTECTION AND ENGINEERED SAFEGUARD SYSTEMS PERFORMED AS DESIGNED, AND
 NO ANOMALIES WERE NOTED. INVESTIGATION INTO THE EVENT OF 2-15
 REVEALED THAT POWER WAS LOST TO PROTECTION SET I INSTRUMENTATION,
 CAUSING A REDUCTION IN FEEDWATER FLOW TO ALL SG'S.  FEED PUMP SPEED
 CONTROL HAS INPUT TO A SUMMING DEVICE FOR TOTAL STEAM FLOW.  THIS
 SIGNAL CAN BE MANUALLY SELECTED AT THE MAIN CONTROL BOARD TO BE FED
 FROM EITHER PROTECTION SET I OR II INSTRUMENTATION.  THE NORMAL
 OPERATING POSITION IS PROTECTION SET I, IN WHICH CASE, UPON LOSS OF
 POWER TO PROTECTION SET I, THE STEAM FLOW SIGNAL WENT TO A ZERO INPUT
 TO THE FEEDWATER PUMP SPEED CONTROLLER CAUSING THE FEEDWATER PUMP TO
 REDUCE SPEED.  THIS REDUCED PUMP SPEED RESULTED IN A REDUCED FEED FLOW
 TO ALL SG'S WHEN ACTUAL STEAM FLOW WAS STILL AT FULL POWER RATING.
 ALSO, LOSS OF PROTECTION SET I CAUSED LOOPS 1 AND 3 FEEDWATER
 REGULATOR VALVES TO FAIL CLOSED.  THE FINAL RESULT WAS A REACTOR TRIP
 ON LO-LO SG LEVEL IN LOOP 1.  THE REASON FOR THE LOSS OF PROTECTION
 SET I POWER WAS A PERSONNEL ERROR MADE WHILE TRYING TO REMOVE VITAL
 INVERTER 2-I FROM SERVICE FOR MAINTENANCE.  WHILE OPERATING AT 30%
 POWER, A SECOND REACTOR TRIP OCCURRED AT 0243 CST ON 2-17-85, DUE TO
 LO-LO SG LEVEL IN LOOP 2.
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DOCKET YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
  328  1988      017         0     8805040152  209177     04/01/88
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DOCKET:328  SEQUOYAH 2                TYPE:PWR
                REGION:  2            NSSS:WE
ARCHITECTURAL ENGINEER: TVAX
     FACILITY OPERATOR: TENNESSEE VALLEY AUTHORITY
                SYMBOL: TVA

COMMENTS
 STEP 2: MODEL NO. HGA-CFHLIOU. SAML/TE

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR

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

REFERENCE LERS:
    1 327/84-006     2 327/84-007     3 327/84-013     4 327/84-026
    5 327/84-031     6 327/84-033     7 327/84-036     8 327/84-054
    9 327/84-064    10 327/85-029    11 327/87-005    12 328/84-008
   13 328/84-014    14 328/84-015    15 328/84-016    16 328/84-017
   17 328/84-018    18 328/84-020    19 328/84-021    20 328/85-001
   21 328/85-002    22 328/85-004    23 328/85-009    24 328/88-006
   25 328/88-013

ABSTRACT
 POWER LEVEL - 000%. ON APRIL 1, 1988, AN INADVERTENT REACTOR TRIP
 SIGNAL WAS GENERATED ON UNIT 2 WHEN THE ASSISTANT SHIFT SUPERVISOR
 (ASST. SS) WAS ATTEMPTING TO SECURE A CONTROL POWER FUSE ON THE SOURCE
 RANGE, NEUTRON FLUX CHANNEL N-31.  THE FUSE LOCKS INTO POSITION BY A
 METAL CONNECTOR WHICH HAS TWO METAL TABS THAT LOCK INTO THE FUSE
 HOLDER AS THE CONNECTOR IS INSERTED AND ROTATED.  ATTACHED TO THE
 OUTER PORTION OF THE FUSE CONNECTOR IS A PLASTIC COVER WHICH IS USED
 TO FACILITATE REMOVAL/INSTALLATION OF THE FUSE.  THE PLASTIC COVER HAS
 TWO FLAT SURFACES WHICH ARE NORMALLY IN THE HORIZONTAL POSITION WHEN
 THE FUSE CONNECTOR IS LOCKED INTO POSITION CORRECTLY.  BEFORE THIS
 EVENT, THE PLASTIC COVER WAS OBSERVED TO BE ROTATED SLIGHTLY SUCH THAT
 THE FLAT SURFACES WERE NOT HORIZONTAL. THUS, THE FUSE APPEARED TO BE
 IN A CONDITION SUCH THAT THE POTENTIAL EXISTED FOR THE FUSE TO
 DISCONNECT AT ANY TIME AND GENERATE A REACTOR TRIP SIGNAL.  WHEN THE
 ASST. SS ATTEMPTED TO LOCK THE FUSE IN PLACE, CONTROL POWER WAS
 INTERRUPTED MOMENTARILY, AND SUBSEQUENTLY, THE REACTOR TRIP SIGNAL
 GENERATED.  NO REACTOR TRIP OCCURRED BECAUSE THE REACTOR TRIP BREAKERS
 WERE OPEN AND THE RODS INSERTED.
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FORM    68               LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  331   1984      028         1     8411270179  197271      07/14/84
*********************************************************************

DOCKET:331  ARNOLD                   TYPE:BWR
                REGION:  3           NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: IOWA ELECTRIC LIGHT & POWER CO.
                SYMBOL: IEL

COMMENTS
 STEP 1: CAUSE XX - ACCIDENTAL MOTORING OF A 650 MWE GENERATOR AT A FOSSIL
 UNIT; STEPS 9 AND 10: CAUSE IX - ELECTRICAL DISTRUBANCE; STEP 10: MODEL 86.

REPORTABILITY CODES FOR THIS LER ARE:
  13  10 CFR 50.73(a)(2)(iv): ESF actuations.
  14  10 CFR 50.73(a)(2)(v): Event that could have prevented
      fulfillment of a safety function.

ABSTRACT
 POWER LEVEL - 000%. ON 7-14-84 AT 1524 WITH THE REACTOR SUBCRITICAL IN
 THE STARTUP MODE, A DEGRADED VOLTAGE CONDITION ON THE OFFSITE POWER
 GRID RESULTED IN THE AUTOMATIC SWITCHING OF THE ESSENTIAL BUSES FROM
 OFFSITE TO ONSITE POWER. AS PER DESIGN, THE RPS LOGIC DE-ENERGIZED,
 INITIATING A SCRAM.. ALL REQUIRED SYSTEMS OPERATED AS DESIGNED,
 INCLUDING THE 2 DG'S ASSUMING THE ESSENTIAL LOADS.  HOWEVER, THE HPCI
 INBOARD STEAM SUPPLY VALVE ALSO CLOSED.  THE REASON FOR THIS RESPONSE
 IS UNKNOWN AND UNDER INVESTIGATION.  AFTER CONSULTATION WITH THE LOAD
 DISPATCHER CONFIRMING A RETURN TO GRID NORMALITY, THE DIESELS WERE
 SECURED.  A POST-EVENT REVIEW CONFIRMED OPERABILITY OF ALL SYSTEMS,
 WHICH WERE THEN RETURNED TO SERVICE.  REACTOR STARTUP COMMENCED 3 AND
 1/2 HRS FOLLOWING THE SCRAM. ON 10-15-84, A SPECIAL TEST PROCEDURE
 DEMONSTRATED THAT THE CAUSE OF THE HPCI INBOARD STEAM SUPPLY
 CONTAINMENT ISOLATION VALVE CLOSURE WAS A SPURIOUS ISOLATION SIGNAL
 UPON RE-ENERGIZING FROM EITHER OR BOTH OF 2 TEMPERATURE SWITCHES IN
 THE HPCI STEAM LEAK DETECTION SYSTEM.  A MINOR DESIGN CHANGE WITHIN
 THE PCI STEAM LEAK DETECTION SYSTEM HAS RESOLVED THIS PROBLEM.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  333   1990      001         0     9002260448  216910       01/19/90
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DOCKET:333  FITZPATRICK               TYPE:BWR
                 REGION:  1,          NSSS:GE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: POWER AUTHORITY OF THE STATE OF NY
                SYMBOL: PNY

COMMENTS
 STEP 6: EFF AX - RAPID MANIPULATION OF EQUALIZING VALVE. STEP 23: EFF IX -
 VOLTAGE TRANSIENT. STEP 24: EFF IX - TRANSFER TO DC SUPPLY. STEP 26: EFF IX
 - RUNBACK TO NO. 2 LIMITER.

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

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

REFERENCE LERS:
    1 333/85-012     2 333/87-020

ABSTRACT
 POWER LEVEL - 100%. A REACTOR SCRAM FROM FULL POWER OCCURRED AT 10:45
 A.M. ON JANUARY 19, 1990 DURING THE CALIBRATION OF REACTOR WATER LEVEL
 INSTRUMENTATION.  THE INSTRUMENT WHICH WAS BEING CALIBRATED SHARES
 COMMON REFERENCE AND VARIABLE LEGS WITH INSTRUMENTS OF THE REACTOR
 PROTECTION SYSTEM (RPS) (JE).  WHILE ISOLATING THE INSTRUMENT UNDER
 TEST, A VALVE PACKING LEAK DEVELOPED.  DURING THE RESPONSE TO THIS
 LEAK, VALVE ACTUATION CAUSED A FALSE LOW WATER LEVEL TO BE SENSED BY
 THE RPS.  THIS FALSE LOW LEVEL TRANSIENT WAS CAUSED BY RAPID VALVE
 MOVEMENT BY THE FIELD TECHNICIAN PERFORMING THE VALVE MANIPULATIONS.
 CORRECTIVE ACTIONS INCLUDE REVIEW OF THIS EVENT WITH ALL I&C
 TECHNICIANS, GROOMING OF THE COMMUNICATION SYSTEM TO ELIMINATE NOISE,
 AND REPAIR OF EQUIPMENT THAT MALFUNCTIONED DURING THE TRANSIENT.
 RELATED LERS:  85-012 AND 87-020.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER    NSIC       EVENT DATE
  334   1985     003          0     8503190194  193577        01/16/85
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DOCKET:334  BEAVER VALLEY 1          TYPE:PWR
                REGION:  1           NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: DUQUESNE LIGHT CO.
                SYMBOL: DUQ

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

ABSTRACT
 POWER LEVEL - 096%. ON 1-16-85, AT 1528 HRS, METER AND CONTROL
 REPAIRMEN WERE PERFORMING MAINTENANCE SURVEILLANCE PROCEDURE 6.40,
 'T-RC 432 DELTA-T T-AVG PROTECTION INSTRUMENT CHANNEL III
 CALIBRATION', WHEN THE FEEDER BREAKER FROM VITAL BUS III TO A PORTION
 OF PROTECTION CHANNEL III OPENED.  THIS PRODUCED NUMEROUS ALARMS
 ASSOCIATED WITH THE SG WATER LEVEL CONTROL; PRESSURIZER PRESSURE AND
 LEVEL; AND THE RPS.  WHILE RESPONDING TO THE ALARMS, THE OPERATORS
 NOTICED THE MAIN FEEDWATER REGULATING VALVES (FCV-FW-478, 488, 498)
 FULL OPEN, THE CONTROLLERS WERE PLACED IN MANUAL AND THE VALVES
 THROTTLED.  AT 1530 HRS, A REACTOR TRIP AND SAFETY INJECTION OCCURRED.
 THE REACTOR TRIP WAS CAUSED BY A STEAM FLOW/FEED FLOW MISMATCH IN
 COINCIDENCE WITH A LOW WATER LEVEL IN THE 'B' SG.  THE SAFETY
 INJECTION SIGNAL WAS CAUSED BY A LOW STEAMLINE PRESSURE SIGNAL IN 2
 OUT OF 3 PRESSURE SENSORS ON THE 'C' LOOP.  THE EMERGENCY OPERATING
 PROCEDURES WERE FOLLOWED TO RECOVER FROM THE INADVERTENT SAFETY
 INJECTION AND REACTOR TRIP.  BREAKER 3-3 WAS THOUGHT TO HAVE OPENED
 DUE TO PERSONNEL ERROR DURING THE PERFORMANCE OF MSP 6.40.  HOWEVER, A
 POST-TRIP SIMULATION PROVED INCONCLUSIVE.  BREAKER 3-3 WAS REMOVED,
 REPLACED WITH A TESTED SPARE AND WAS BENCH TESTED SATISFACTORILY.
 SAFETY INJECTIONS TO DATE:  18 OPERATIONAL, 2 PRE-OPERATIONAL.
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FORM    71               LER SCSS DATA                     08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  335   1980      002         0     8002210386  155548      01/04/80
********************************************************************

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

COMMENTS
 STEP 1: MODEL SU-UNI-30A-BV; RECURRING PROBLEM WITH 15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/76-037     2 335/78-021      3 335/79-006      4 335/80-023
    5 335/80-033     6 335/80-034      7 335/80-035      8 335/80-036
    9 335/80-043    10 335/80-045     11 335/80-046     12 335/80-048
   13 335/80-049    14 335/80-050     15 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - POWER SUPPLY FAILURE. DURING NORMAL
 OPERATION, CEA 22 DROPPED TO FULL INSERTION. ACTION IN ACCORDANCE WITH
 TECH.SPECS WAS INITIATED AND REACTOR POWER WAS REDUCED. CEA 22 WAS
 RESTORED TO IT'S NORMAL POSITION WITHIN 1 HOUR. TQ WAS FOUND TO BE
 .044. TQ WAS DETERMINED TO BE WITHIN LIMITS IN LESS THAN 5 HOURS. NO
 OTHER CORE LIMITS WERE EXCEEDED. THE REACTOR WAS RETURNED TO 100%
 POWER. SIMILAR OCCURRENCES WERE REPORTED AS LERS 335-76-37, 78-21 AND
 79-6. CEA #22 DROPPED DUE TO A FAILED 15V POWER SUPPLY (POWER RATE
 MODE SU-UNI-30A-BV) IN THE COIL POWER PROGRAMMER. NO CAUSE FOR THIS
 FAILURE COULD BE DETERMINED. IMMEDIATE CORRECTIVE ACTION WAS TO
 REPLACE THE POWER SUPPLY.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  335   1980     023          0     8006230495  157681      05/11/80
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DOCKET:335  ST. LUCIE 1                  TYPE:PWR
                REGION:  2               NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
                SYMBOL: FPL

COMMENTS
 STEPS 1 AND 5: MODEL SU-UNI-30A-BV; RECURRING PROBLEM WITH ISV POWER
 SUPPLIES.

REFERENCE LERS:
    1 335/76-037      2 335/78-021      3 335/79-006      4 335/80-002
    5 335/80-033      6 335/80-034      7 335/80-035      8 335/80-036
    9 335/80-043     10 335/80-045     11 335/80-046     12 335/80-048
   13 335/80-049     14 335/80-050     15 335/80-051

ABSTRACT
 POWER LEVEL - 018%. CAUSE - POWER SUPPLY FAILURE. DURING POWER
 ASCENSION CEA 19 DROPPED TO FULL INSERTION. THE POWER SUPPLY UNIT FOR
 CEA 19 HAD FAILED. THE POWER SUPPLY WAS REPLACED AND CEA 19 WAS
 ALIGNED WITH ITS CEA GROUP HEIGHT. ON 5-11-80 CEA 58 DROPPED.
 APPROPRIATE ACTION WAS TAKEN AND CEA 58 WAS RESTORED TO ITS GROUP
 POSITION. SIMILAR OCCURRENCES WERE REPORTED AS LERS 335-76-37, 78-21,
 79-6, 80-2. THE CAUSE OF BOTH DROPPED CEAS WAS DUE TO FAILED 15V POWER
 SUPPLY UNITS (SU-UNI-30A-BV). BOTH CEAS WERE RESTORED IN 30 MINUTES
 OR LESS AND NORMAL OPERATION WAS RESUMED. SINCE THESE POWER SUPPLIES
 ARE OF A NEW TYPE, IT IS POSSIBLE THAT THE RECENT FAILURES ARE
 ASSOCIATED WITH THE INITIAL BREAK-IN PERIOD.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  335   1980      030         0     8007150636  158742      06/03/80
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DOCKET:335  ST. LUCIE 1              TYPE:PWR
                REGION:  2           NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
                SYMBOL: FPL

COMMENTS
 STEP 1: MODEL RB6-30.

ABSTRACT
 POWER LEVEL - 100%. CAUSE - HIGH VOLTAGE POWER SUPPLY FAILURE. DURING
 NORMAL FULL POWER OPERATION, THE CRT ROD POSITION DISPLAY
 (METRASCOPE) WAS BRIEFLY DENERGIZED TO PERMIT REPLACEMENT OF A FAILING
 POWER SUPPLY. THIS ALSO DISABLED THE CEA BLOCK CIRCUIT. THE CIRCUIT
 WAS RETURNED TO SERVICE WITHIN 9 MINUTES, WHICH IS WELL WITHIN THE 6
 HOUR LIMIT OF T.S. THE SOURCE OF CEA POSITION INDICATION WAS NOT LOST
 AND ANOTHER READOUT DEVICE WAS AVAILABLE. THIS IS THE FIRST TIME THE
 CEA BLOCK CIRCUIT WAS UNAVAILABLE FOR THIS PARTICULAR REASON. THE
 METRASCOPE CRT DISPLAY BEGAN TO FADE, AND INVESTIGATION SHOWED THAT
 THE HIGH VOLTAGE POWER SUPPLY (POWERMATE MODEL RB6-30) WAS FAILING.
 THE METRASCOPE WAS BRIEFLY DENERGIZED AND THE POWER SUPPLY WAS
 REPLACED.
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FORM    74                LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  335   1980      032         0     8008250788  159370      07/14/80
*******************************************************************

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

REFERENCE LERS:
    1 335/80-023     2 335/80-010     3 335/80-007     4 335/80-002

ABSTRACT
 POWER LEVEL - 100%. CAUSE - UNKNOWN. DURING FULL POWER OPERATION CEA
 22 DROPPED TO FULL INSERTION. REACTOR POWER WAS REDUCED TO 70%, CEA 22
 WAS REPAIRED, TESTED AND RETURNED TO NORMAL POSITION AND POWER WAS
 RAISED TO 100%. SEVERAL HOURS LATER CEA 22 AGAIN DROPPED TO FULL
 INSERTION. THE ABOVE SEQUENCE OF POWER REDUCTION REPAIR,
 REPOSITIONING, AND RETURN TO 100% POWER WAS REPEATED. SIMILAR
 OCCURRENCES WERE REPORTED ON LER'S 335-80-23, 80-10, 80-7, & 80-2. CFA
 22 DROPPED BOTH TIMES DUE TO UNKNOWN CAUSES. IN THE FIRST INSTANCE
 THE TIMER MODULE WAS REPLACED. IN THE SECOND INSTANCE THE TIMER MODULE
 AND THE POWER SUPPLY WERE REPLACED. CAUSES OF THESE FAILURES COULD
 NOT BE DETERMINED.
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FORM    75                LER SCSS DATA                         08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  335   1980     033          0     8009020372  159368     07/24/80
*****************************************************************

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

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/80-023     2 335/80-032     3 335/80-034     4 335/80-035
    5 335/80-036     6 335/80-043     7 335/80-045     8 335/80-046
    9 335/80-048    10 335/80-049    11 335/80-050    12 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - TECHNICIAN SHORTED POWER TO ROD DRIVE.
 WHILE AT 100% POWER, CEA #63 DROPPED TO THE FULLY INSERTED POSITION.
 POWER WAS REDUCED TO 65% AND CEA #63 WAS REALIGNED WITH THE OTHER
 CEA'S IN ITS GROUP. THIS IS THE FIRST DROPPED CEA DUE TO MAINTENANCE
 ACTIVITY. THE DROPPED CEA.WAS CAUSED BY A TECHNICIAN ACCIDENTLY
 SHORTING THE OUTPUT OF THE 15 VOLT POWER SUPPLY WHILE TAKING ROUTINE
 VOLTAGE MEASUREMENTS. THESE MEASURMENTS, INTENDED TO DETECT FAILING
 SUPPLIES BEFORE FAILURE, HAVE BEEN DISCONTINUED DUE TO THE CLOSE
 QUARTERS AND RISK OF SHORTING THESE SUPPLIES.
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FORM    76               LER.SCSS DATA                          08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  335   1980     034         0      8009120316  160120       08/01/80
********************************************************************

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

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/80-002      2 335/80-007      3 335/80-010      4 335/80-023
    5 335/80-032      6 335/80-033      7 335/80-035      8 335/80-036
    9 335/80-043     10 335/80-045     11 335/80-046     12 335/80-048
   13 335/80-049     14 335/80-050     15 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - POWER SUPPLY FAILURE. DURING FULL POWER
 OPERATION CEA 41 DROPPED TO FULL INSERTION. REACTOR POWER WAS REDUCED
 TO 70%, CEA 41 WAS REPAIRED, TESTED AND REALIGNED WITH ITS GROUP.
 POWER WAS INCREASED TO 100%. SIMILAR OCCURRENCES WERE REPORTED IN
 LER'S 335-80-23, 80-10, 80-7, 80-2, 80-32. CEA 41 DROPPED DUE TO A
 FAILURE IN ITS CORE POWER PROGRAMMER 15V POWER SUPPLY. THE POWER
 SUPPLY WAS REPLACED. A MODIFICATION IS UNDERWAY TO PROVIDE REDUNDANT
 15V POWER SUPPLIES TO EACH CEA.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  335   1980     035          0     8009120318      0       08/04/80
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DOCKET:335  ST. LUCIE 1                TYPE:PWR
                REGION:  2             NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
                SYMBOL: FPL

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/80-002      2 335/80-007      3 335/80-010      4 335/80-023
    5 335/80-032      6 335/80-033      7 335/80-034      8 335/80-036
    9 335/80-043     10 335/80-045     11 335/80-046     12 335/80-048
   13 335/80-049     14 335/80-050     15 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - POWER SUPPLY FAILURE. ON 8/4/80, CEA 16
 DROPPED TO FULL INSERTION. ACTION PER TS 3.1.3.1E WAS INITIATED.
 REACTOR POWER WAS REDUCED TO 70%, CEA 16 WAS REPAIRED, TESTED AND
 REALIGNED WITH ITS GROUP. SIMILAR OCCURRENCES WERE REPORTED IN LER'S
 335/80-23, 80-10, 80-7, 80-2, AND 80-34. CEA 16 DROPPED DUE TO A
 FAILURE IN ITS CORE POWER PROGRAMMER 15V POWER SUPPLY. THE POWER
 SUPPLY WAS REPLACED. A MODIFICATION IS UNDERWAY TO PROVIDE REDUNDANT
 15V POWER SUPPLIES TO EACH CEA.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  335   1980      036         0     8009150290  160119       08/05/80
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DOCKET:335  ST. LUCIE 1               TYPE:PWR
                REGION: 2             NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
                SYMBOL: FPL

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/80-002     2 335/80-007     3 335/80-010     4 335/80-023
    5 335/80-032     6 335/80-033     7 335/80-034     8 335/80-035
    9 335/80-043    10 335/80-045    11 335/80-046    12 335/80-048
   13 335/80-049    14 335/80-050    15 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - POWER SUPPLY FAILURE. DURING FULL POWER
 OPERATION CEA 23 DROPPED TO FULL INSERTION. RX POWER WAS REDUCED TO
 70%, CEA 23 WAS REPAIRED, TESTED AND REALIGNED WITH ITS GROUP. POWER
 WAS INCREASED TO 100%. SIMILAR OCCURRENCES WERE REPORTED IN LER'S
 335-80-23, 80-10, 80-7, 80-2, 80-32, 80-34, 80-35. CEA 23 DROPPED DUE
 TO A FAILURE IN ITS CORE POWER PROGRAMMER 15V POWER SUPPLY. THE POWER
 SUPPLY WAS REPLACED. A MODIFICATION IS UNDERWAY TO PROVIDE REDUNDANT
 15V POWER SUPPLIES TO EACH CEA.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  335   1980     043          0     8012100407  161804       08/21/80
*********************************************************************

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

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/80-002     2 335/80-007     3 335/80-010     4 335/80-023
    5 335/80-033     6 335/80-034     7 335/80-035     8 335/80-036
    9 335/80-045    10 335/80-046    11 335/80-048    12 335/80-049
   13 335/80-050    14 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - FAILED POWER SUPPLY. CEDM 39 FAILED, THUS
 DROPPING ITS CEA TO FULL INSERTION. NO CEA MOTION WAS IN PROGRESS
 WHEN THE FAILURE OCCURRED. REACTOR POWER WAS REDUCED TO 70%, CEDM 39
 WAS REPAIRED, TESTED AND RETURNED TO NORMAL OPERATION. FULL POWER
 OPERATION WAS RESUMED. NO CORE POWER DISTRIBUTION LIMITS WERE
 EXCEEDED. SIMILAR OCCURRENCES WERE REPORTED ON LERS 335-80-2, 80-7,
 80-10 AND 80-23. THE CAUSE WAS A FAILED 15 VOLT POWER SUPPLY UNIT IN
 THE COIL POWER PROGRAMMER. NO CAUSE FOR THIS FAILURE COULD BE
 DETERMINED. THE POWER SUPPLY UNIT WAS REPLACED. REDUNDANT POWER SUPPLY
 UNITS ARE TO BE INSTALLED.
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FORM    80               LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  335   1980      045         0     8010080673  160410      08/26/80
********************************************************************

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

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLY.

REFERENCE LERS:
    1 335/76-037     2 335/78-021     3 335/79-006     4 335/80-002
    5 335/80-023     6 335/80-033     7 335/80-034     8 335/80-035
    9 335/80-036    10 335/80-043    11 335/80-046    12 335/80-048
   13 335/80-049    14 335/80-050    15 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - POWER SUPPLY FAILS. DURING FULL POWER
 OPERATION CEA 24 DROPPED TO FULL INSERTION. POWER WAS REDUCED TO 70%.
 THE POWER SUPPLY UNIT FOR CEA 24 HAD FAILED. THE POWER SUPPLY WAS
 REPLACED AND CEA 24 WAS ALIGNED WITH ITS CEA GROUP HEIGHT. SIMILAR
 OCCURRENCES WERE REPORTED AS LERS 335-76-37, 78-21, 79-6, 80-2, 80-23.
 INSTALLATION OF REDUNDANT POWER SUPPLIES IS IN PROGRESS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  335   1980     046          1     8012020542  163510       08/27/80
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DOCKET:335   ST. LUCIE 1               TYPE:PWR
                REGION:  2             NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
                SYMBOL: FPL

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLIES. STEP 1: MODEL UNI-30 ABV.

REFERENCE LERS:
    1 335/76-037      2 335/79-006      3 335/80-002      4 335/80-023
    5 335/80-034      6 335/80-035      7 335/80-036      8 335/80-042
    9 335/80-043     10 335/80-045     11 335/80-048     12 335/80-049
   13 335/80-050     14 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - FAILED POWER SUPPLY. CEA #33 DROPPED TO
 ITS FULLY INSERTED POSITION. POWER WAS REDUCED TO 70%, THE CEDM DRIVE
 CONTROL FOR #33 WAS REPAIRED. #33 WAS RE-ALIGNED. THIS IS THE 11TH
 DROPPED CEA DUE TO A FAILED POWER SUPPLY (LER'S 335-76-37, 79-6, 80-2,
 23, 34, 35, 36, 42, 43, 45). OF THESE 11, 8 WERE DUE TO THE FAILURE
 OF NEW POWER SUPPLIES (POWERMATE UNI-30 ABV) INSTALLED DURING THE
 SPRING '80 REFUELING OUTAGE. THE POWER SUPPLIES FOR ALL 61 FLCEA'S
 HAVE SINCE BEEN REPLACED WITH THE ORIGINAL TYPE SUPPLIES (POWERMATE
 UNI-88). THERE HAVE BEEN NO FAILURES IN THE 73 DAYS SINCE THIS
 REPLACEMENT.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  335   1980      048          0    8010070477  160409      08/26/80
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DOCKET:335  ST. LUCIE 1              TYPE:PWR
                REGION:  2           NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
                SYMBOL: FPL

COMMENTS
 RECURRING PROBLEM WITH.15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/76-037      2 335/78-021      3 335/79-006      4 335/80-002
    5 335/80-023      6 335/80-033      7 335/80-034      8 335/80-035
    9 335/80-036     10 335/80-043     11 335/80-045     12 335/80-046
   13 335/80-049     14 335/80-050     15 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - POWER SUPPLY FAILURE. DURING FULL POWER
 OPERATION CEA 51 DROPPED TO FULL INSERTION. POWER WAS REDUCED TO 70%.
 THE POWER SUPPLY UNIT FOR CEA 51 HAD FAILED. THE POWER SUPPLY WAS
 REPLACED AND CEA 51 WAS ALIGNED WITH ITS CEA GROUP HEIGHT. SIMILAR
 OCCURRENCES WERE REPORTED AS LERS 335-76-37, 78-21, 79-6, 80-2, 80-23,
 80-45. INSTALLATION OF REDUNDANT POWER SUPPLIES IS IN PROGRESS.
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FORM    83                 LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  335   1980      049         0     8010100322  160417      09/04/80
********************************************************************

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

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/76-037     2 335/78-021     3 335/79-006     4 335/80-002
    5 335/80-023     6 335/80-033     7 335/80-034     8 335/80-035
    9 335/80-036    10 335/80-043    11 335/80-045    12 335/80-046
   13 335/80-048    14 335/80-050    15 335/80-051

ABSTRACT
 POWER LEVEL - 100%. CAUSE - POWER SUPPLY FAILS. DURING FULL POWER
 OPERATION CEA 21 DROPPED TO FULL INSERTION. REACTOR POWER WAS REDUCED
 TO 70%. THE POWER SUPPLY UNIT FOR CEA 21 HAD FAILED. THE POWER SUPPLY
 WAS REPLACED AND CEA 21 WAS ALIGNED WITH ITS GROUP HEIGHT. SIMILAR
 OCCURRENCES WERE REPORTED AS LER'S 335-76-37, 78-21, 79-6, 80-2,
 80-23, 80-45, 80-48. INSTALLATION OF REDUNDANT POWER SUPPLIES IS IN
 PROGRESS AND REPLACEMENT OF SUPPLIES WITH MORE RELIABLE OLDER SUPPLIES
 HAS BEEN COMPLETED.
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FORM    84                 LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC       EVENT DATE
  335   1980      050          0     8010100314  160832       09/04/80
*********************************************************************

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

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/80-023     2 335/80-033     3 335/80-034     4 335/80-035
    5 335/80-036     6 335/80-043     7 335/80-045     8 335/80-046
    9 335/80-048    10 335/80-051

ABSTRACT
 POWER LEVEL - 070%. CAUSE - FAILURE OF PLANT PA SYSTEM. CONTROL
 ELEMENT DRIVE MECHANISMS POWER SUPPLIES WERE BEING SWITCHED TO MORE
 RELIABLE MODELS. THE POWER SUPPLIES FOR CEA 44 AND 42 WERE PARALLELED
 WHEN CEA 44 DROPPED, THEN SIX MINUTES LATER CEA 42 DROPPED. THE
 REACTOR WAS MANUALLY TRIPPED. THIS IS THE FIRST OCCURRENCE OF THIS
 TYPE. WHILE CHANGING THE 15V POWER SUPPLY FOR CEA 42, CEA 44 DROPPED,
 POSSIBLY DUE TO A VOLTAGE SPIKE. DUE TO A FAILURE OF THE PLANT PA
 SYSTEM, MAINTENANCE PERSONNEL WERE NOT NOTIFIED THAT CEA 44 DROPPED
 AND THEY CONTINUE REMOVING THE POWER SUPPLY FOR CEA 42. THIS LED TO
 THE OCCURRENCE OF THE DUAL ROD DROP.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  335   1980      051         0     8010100345  160831      09/04/80
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DOCKET:335   ST. LUCIE 1               TYPE:PWR
               REGION:  2              NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
                SYMBOL: FPL.

COMMENTS
 RECURRING PROBLEM WITH 15V POWER SUPPLIES.

REFERENCE LERS:
    1 335/80-023      2 335/80-033      3 335/80-034      4 335/80-035
    5 335/80-036      6 335/80-043      7 335/80-045      8 335/80-046
    9 335/80-048     10 335/80-049     11 335/80-050

ABSTRACT
 POWER LEVEL - 091%. CAUSE - BLOWN FUSE. DURING A RETURN TO FULL POWER
 OPERATION CONTROL ELEMENT ASSEMBLY 33 DROPPED TO FULL INSERTION. THE
 CAUSE WAS A FUSE BLOWING IN THE ALTERNATE PARALLEL SUPPLY LINE TO CEA
 33 WHEN ITS SUPPLY BREAKER WAS OPENED. THE FUSE APPARENTLY BLEW DUE TO
 THE SLIGHT TRANSIENT INVOLVED. THE FUSE WAS REPLACED AND THE POWER
 SUPPLIES EXCHANGED. CEA 33 WAS ALIGNED WITH ITS CEA GROUP. REACTOR
 POWER WAS MAINTAINED AT 70% TO FINISH EXCHANGING POWER SUPPLIES.
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FORM    86               LER SCSS DATA                          08-30-91

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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.
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FORM    87                LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  335   1987      017         0     8801260221  207963       12/21/87
*********************************************************************

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

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR

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

REFERENCE LERS:
    1 335/82-071     2 335/87-010

ABSTRACT
 POWER LEVEL - 100%. ON 12/21/87, WHILE OPERATING IN MODE 1 AT 100%
 POWER, ST. LUCIE UNIT #1 TRIPPED DUE TO THE LOSS OF THE 1MD 120 VOLT
 AC BUS.  WITH THE REACTOR PROTECTIVE SYSTEM (RPS) HI START-UP RATE B
 CHANNEL BISTABLE IN TRIP, THE RPS LOGIC FOR HI START-UP RATE WAS 1 OF
 3.  THE LOSS OF THE 1D INSTRUMENT INVERTER CAUSED THE SUBSEQUENT LOSS
 OF THE 1MD 120 VOLT AC BUS, WHICH RESULTED IN THE ACTUATION OF THE
 DEENERGIZE TO ACTUATE FUNCTION OF THE RPS D CHANNEL TRIP BISTABLES
 THUS SATISFYING THE RPS TRIP LOGIC.  THE ROOT CAUSE OF THE EVENT WAS A
 COGNITIVE PERSONNEL ERROR BY A UTILITY NON-LICENSED OPERATOR NOT
 ADEQUATELY FOLLOWING A PLANT APPROVED PROCEDURE FOR OPERATION OF THE
 120 VOLT INSTRUMENT AC CLASS 1E SYSTEM.  THE NON-LICENSED OPERATOR WAS
 COUNSELED BY HIS SUPERVISOR ON THE IMPORTANCE OF ADEQUATELY FOLLOWING
 APPROVED PROCEDURES AND THE NEED FOR GREATER ATTENTION TO DETAIL
 WHILE PERFORMING CRITICAL JOB RESPONSIBILITIES.  A PROCEDURE FOR
 INFREQUENT OPERATIONS OR MANIPULATIONS IS BEING DRAFTED.  THIS IS TO
 ASSURE A DETAILED REVIEW AND BRIEFING BY THE SHIFT SUPERVISOR WITH
 APPROPRIATE PERSONNEL FOR SAFE AND SATISFACTORY PERFORMANCE.  THE
 PLANT TRAINING DEPARTMENT WILL EVALUATE THIS ITEM TO DETERMINE
 APPROPRIATE TRAINING METHODS AND REQUIREMENTS.  A HUMAN PERFORMANCE
 EVALUATION IS BEING CONDUCTED TO IDENTIFY ANY AREAS THAT MAY BE OF
 CONCERN.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  335   1991     003          0     9106110130  222222      05/06/91
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DOCKET:335  ST. LUCIE 1               TYPE:PWR
                REGION:  2            NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
                SYMBOL: FPL

COMMENTS
 STEP 1: MODEL NO. 601MPX. STEP 9: MODEL.NO. 9852 376. STEP 7: REM - HEATER
 DRAIN PUMP. STEP 16: COMP RLX - GROUND RELAY.

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:
    1 335/90-007

ABSTRACT
 POWER LEVEL - 096%. ON 5/6/91, ST. LUCIE UNIT 1 WAS IN MODE 1 AND
 HOLDING POWER AT 96% TO COMPLETE A NUCLEAR DELTA-T POWER CALIBRATION
 BEFORE RESUMING FULL POWER OPERATION FOLLOWING A SCHEDULED SHUTDOWN.
 THE 1A HEATER DRAIN PUMP TRIPPED AT 0508 AND, FOUR SECONDS LATER, THE
 1A STEAM GENERATOR FEEDWATER PUMP TRIPPED CAUSING A TURBINE RUNBACK.
 THE UNIT WAS MANUALLY TRIPPED AT 0509 AT THE DIRECTION OF THE NUCLEAR
 PLANT SUPERVISOR IN ANTICIPATION OF AN AUTOMATIC REACTOR TRIP AND
 STANDARD PCST TRIP ACTIONS WERE PERFORMED. THE UNIT WAS THEN IN MODE
 3, HOT STANDBY.  THE MANUAL REACTOR TRIP WAS THE RESULT OF A TURBINE
 RUNBACK INITIATED WHEN BOTH THE 1A HEATER DRAIN PUMP AND THE 1A STEAM
 GENERATOR FEEDWATER PUMP TRIPPED.  AN INVESTIGATION REVEALED A
 POSSIBLE GROUNDING OF THE 5A FEEDWATER HEATER HI-HI LEVEL SWITCH
 WHICH, IN TURN, OPENED CIRCUIT BREAKER 27 ON THE 120 VAC VITAL STATIC
 UNINTERRUPTIBLE POWER SUPPLY. THIS WOULD HAVE CAUSED THE NORMAL DRAIN
 VALVES TO CLOSE ON SEVERAL SECONDARY FEEDWATER HEATERS AND THE
 ALTERNATE DRAIN VALVES TO OPEN. IT WAS ALSO FOUND THAT THE PRESSURE
 SENSING ELEMENT SETPOINT FOR THE 1A SGFP HAD DRIFTED HIGH FROM THE
 NORMAL VALUE OF 275 PSIG TO 291 PSIG. THE END RESULT WAS A LOW SUCTION
 PRESSURE CONDITION ON THE FEEDWATER PUMP SUCTION LINE AND THE TRIP OF
 THE 1A STEAM GENERATOR FEEDWATER PUMP ON LOW SUCTION PRESSURE.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC     EVENT DATE
  338   1984     019         1      8502050420  197272     11/14/84
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DOCKET:338  NORTH ANNA 1.              TYPE:PWR
                REGION:  2             NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
                SYMBOL: VEP

COMMENTS
 STEP 5: COMP RLX - RCP BREAKER POSITION RELAY.

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

ABSTRACT
 POWER LEVEL - 100%. ON 11-14-84 AT 0640 UNIT 1 TRIPPED DUE TO A VITAL
 BUS INVERTER FAILURE. THE INVERTER WAS SUPPLYING POWER TO THE 125V AC
 VITAL BUS 1-III.  THE INVERTER FAILURE CAUSED THIS BUS AND ITS
 ASSOCIATED EQUIPMENT TO BECOME DEENERGIZED.  LOSS OF POWER TO THE
 RELAY WHICH SENSES 'C' RCP BREAKER POSITION CAUSED THE REACTOR TRIP ON
 LOSS OF RCS FLOW COINCIDENT WITH REACTOR POWER GREATER THAN 30%.  THE
 'C' RCP NEVER STOPPED RUNNING DURING THIS EVENT.  THE INVERTER HAD
 DAMAGED SCR'S AND A BLOWN FUSE WHICH PREVENTED IT FROM BEING
 REENERGIZED.  THE MOST SIGNIFICANT EQUIPMENT RESPONSE INVOLVED 'B' SG.
 'B' MAIN FEED VALVE (FCV-1488) AND 'B' FEED BYPASS VALVE (FCV-1489)
 BOTH FAILED CLOSED.  'B' WIDE RANGE SG LEVEL INDICATION (LI-1487)
 FAILED LOW.  THE AUX FEEDWATER PUMP (1-FW-P-3B) WHICH SUPPLIES 'B' SG
 FAILED TO AUTO START AND WAS MANUALLY STARTED BY THE CONTROL ROOM
 OPERATOR.  THESE ACTIONS CAUSED 'B' SG LEVEL TO DROP BELOW THE NARROW
 RANGE INDICATION WHILE NO WIDE RANGE LEVEL INDICATION WAS AVAILABLE.
 LOSS OF VITAL BUS 1-III ALSO DEENERGIZED ALL 4 WATER BOXES' VACUUM
 BREAKERS WHICH CAUSED ALL CIRCULATING WATER PUMPS TO TRIP.  THIS VITAL
 BUS ALSO SUPPLIES POWER TO MANY CONTAINMENT ISOLATION TRIP VALVES
 INCLUDING COMPONENT COOLING TO THE RCP'S.  OTHER SIGNIFICANT EQUIPMENT
 THAT WAS POWERED FROM THE 1-III VITAL BUS WAS ONE POWER RANGE
 DETECTOR (N43), 26 INCORE THERMOCOUPLES, SSPS CHANNEL III INPUTS, AND
 SSPS TRAIN 'B' OUTPUT RELAYS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  341   1988     004          0     8802160253  208236      01/10/88
*******************************************************************

DOCKET:341  FERMI 2                     TYPE:BWR
                REGION:  3              NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: DETROIT EDISON CO.
                SYMBOL: DEC

COMMENTS
 $MP/EC A/D

WATCH-LIST CODES FOR THIS LER ARE:
 942  UNUSUAL EVENT
  35  HUMAN ERROR

REPORTABILITY CODES FOR THIS LER ARE:
  11  10 CFR 50.73(a)(2)(ii): Unanalyzed conditions.

ABSTRACT
 POWER LEVEL - 049%. ON JANUARY 10, 1988, THE NORTH REACTOR FEED PUMP
 SPEED CONTROL POWER SUPPLY FAILED.  THE PUMP RESPONDED TO THE LOSS OF
 CONTROL SIGNAL.  A LOW REACTOR VESSEL WATER LEVEL RESULTED WHICH
 CAUSED A REACTOR SCRAM.  HIGH PRESSURE COOLANT INJECTION AND REACTOR
 CORE ISOLATION COOLING SYSTEMS ACTUATED ALONG WITH THE APPROPRIATE
 ISOLATIONS.  THE CAUSE FOR THE FEEDWATER TRANSIENT WAS THAT THE
 OVERVOLTAGE TRIP FOR THE POWER SUPPLY HAD DRIFTED INTO THE NORMAL
 OPERATING RANGE.  THE POWER SUPPLY WAS REPLACED AND THE OVERVOLTAGE
 PROTECTION WAS SET TO THE MAXIMUM VALUE. DURING RESTORATION OF THE
 RWCU SYSTEM, A TECH SPEC REQUIREMENT WAS EXCEEDED.  THE TECH SPEC
 ACTION STATEMENT FOR DEFEATING THE HIGH TEMPERATURE ISOLATION FUNCTION
 OF THE RWCU ISOLATION VALVES DOES NOT ALLOW SUFFICIENT TIME TO
 RESTART THE RWCU SYSTEM DURING HIGH OPERATOR ACTIVITY PERIODS.  A TECH
 SPEC CHANGE WILL BE SUBMITTED TO DELETE THE REQUIREMENT FOR RWCU
 ISOLATIONS ON HIGH NON-REGENERATIVE HEAT EXCHANGER OUTLET TEMPERATURE
 INDICATION.
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FORM    91               LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  344   1985      010         0     8509240359  196745      08/26/85
********************************************************************

DOCKET:344  TROJAN                   TYPE:PWR
                REGION:  5           NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: PORTLAND GENERAL ELECTRIC CO.
                SYMBOL: PGC

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

ABSTRACT
 POWER LEVEL - 100%. AT 11:55 AM PDT ON 8-26-85 A REACTOR TRIP OCCURRED
 DUE TO OVERPOWER/DELTA-T AND OVERTEMPERATURE/DELTA-T TRIP SIGNALS.
 THE COINCIDENT SIGNALS WERE GENERATED BY I&C MAINTENANCE TESTING IN
 CONJUNCTION WITH A SHORT IN A HEAT TRACING CIRCUIT WHICH RESULTED IN A
 VOLTAGE DROP ON THE Y-13 PREFERRED INSTRUMENT BUS.  ALL EQUIPMENT
 OPERATED AS REQUIRED FOLLOWING THE TRIP AND THE PLANT WAS SAFELY
 SHUTDOWN.  CORRECTIVE ACTION WAS TAKEN TO REPAIR THE DAMAGED HEAT
 TRACING CIRCUIT.  IN THE COURSE OF PLANT RECOVERY, WITH THE REACTOR AT
 3% POWER, SG WATER LEVEL CONTROL WAS IN MANUAL FOR THE PERFORMANCE OF
 MAIN TURBINE STOP VALVE TESTING.  DURING THE TESTING, THE 'C' SG
 LEVEL EXCEEDED THE HIGH-HIGH LEVEL SETPOINT RESULTING IN A MAIN
 FEEDWATER PUMP AND TURBINE TRIP AND AN AUTOMATIC START OF THE AUX
 FEEDWATER PUMPS.  THE WATER LEVEL IN THE SG WAS RETURNED TO NORMAL AND
 THE PLANT RECOVERY WAS CONTINUED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  346   1980      081         0     8012150118  161859      11/12/80
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DOCKET:346  DAVIS-BESSE 1             TYPE:PWR
                REGION:  3            NSSS:BW
ARCHITECTURAL ENGINEER: BECH.
     FACILITY OPERATOR: TOLEDO EDISON CO.
                SYMBOL: TEC

COMMENTS
 STEP 2: PSYS ZX - TESTING CONNECTION TO STEAM/FEEDWATER RUPTURE CONTROL
 SYSTEM; COMP MEI - OSCILLOSCOPE FOR WAVEFORM TEST.

REFERENCE LERS:
    1:346/80-056

ABSTRACT
 POWER LEVEL - 039%. CAUSE - MAINTENANCE ERROR. AT 1403 HOURS, THE
 UNIT EXPERIENCED A LOSS OF ESSENTIAL BUS Y2. THIS BUS POWERS RPS
 CHANNEL 2 WHICH WAS THE SOURCE OF RCS FLOW TO THE INTEGRATED CONTROL
 SYSTEM. THE LOSS OF FLOW INDICATION STARTED A SERIES OF EVENTS WHICH
 RESULTED IN A REACTOR TRIP ON HIGH RCS PRESSURE. THE CAUSE WAS THE USE
 OF A GROUNDED OSCILLOSCOPE BY I&C PERSONNEL TO RECORD INPUT VOLTAGE
 WAVEFORMS AT THE STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM CH. 2
 CABINET. THE GROUND FED BACK TO THE YV2 INVERTER INPUT FUSE WHICH TOOK
 OUT THE Y2 BUS WHICH CAUSED THE LOSS OF RPS CH. 2. THE FUSE WAS
 REPLACED AND ESSENTIAL 120 VAC POWER RESTORED TO Y2 AT 1530 HOURS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  346   1982      020         2     8305130195  183451       04/09/82
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DOCKET:346  DAVIS-BESSE 1             TYPE:PWR
                REGION:  3            NSSS:BW
ARCHITECTURAL ENGINEER: BECH.
     FACILITY OPERATOR: TOLEDO EDISON CO.
                SYMBOL: TEC

ABSTRACT
 (NP-33-82-24) ON APRIL 9, 1982 AT 1015 HOURS, THE STATION EXPERIENCED
 A LOSS OF 120 VAC DISTRIBUTION PANEL Y2 WHILE IN MODE 6.  SINCE Y4 HAD
 ALREADY BEEN DE-ENERGIZED FOR ROUTINE MAINTENANCE, SFAS ACTUATION
 CHANNEL 2 ACTUATED WHEN POWER WAS LOST TO SFAS CHANNEL 2 AND RPS
 CHANNEL 2 DE-ENERGIZED CAUSING A LOSS OF ONE CHANNEL OF SOURCE RANGE
 NUCLEAR INSTRUMENTATION. THE STATION ENTERED THE ACTION STATEMENT OF
 TECH SPECS 3.8.2.2, 3.3.2.1, AND 3.9.2.  THE AFFECTED SAFETY SYSTEMS
 WENT TO THEIR FAIL SAFE STATUS.  THE LOSS OF Y2 WAS DUE TO A BLOWN Y2
 INVERTER FUSE. THE FUSE BLEW WHEN A SHORT TO GROUND OCCURRED DURING
 MAINTENANCE ON THE CONTROL ROOM EMERGENCY VENTILATION SYSTEM.  THE
 CONTROL POWER SUPPLIED FROM Y2 TO CONTROL POWER PANEL C6709 WAS
 OVERLOOKED WHEN THE SYSTEM WAS TAGGED OUT BY CONTRACTOR PERSONNEL.
 UNDER MWOS 82-1547 AND 82-1595, THE FUSES WERE REPLACED.  THE
 RESPONSIBLE PERSON WAS COUNSELED BY THE MAINTENANCE ENGINEER.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  346   1983      072         0     8401300009  188346      12/17/83
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DOCKET:346  DAVIS-BESSE 1            TYPE:PWR
                REGION:  3           NSSS:BW
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: TOLEDO EDISON CO.
                SYMBOL: TEC

WATCH-LIST CODES FOR THIS LER ARE:
 900  POST EVENT DATA AVAILABILITY

REFERENCE LERS:
    1 346/80-088     2 346/81-016     3 346/81-031     4 346/83-002

ABSTRACT
 (NP-33-83-101) ON 12/17/83 AT 1515 HOURS, 120 VAC ESSENTIAL BUS Y1 WAS
 DE-ENERGIZED.  AS A RESULT OF THE LOSS OF Y1, THE FOLLOWING CHANNELS
 WERE ALSO DE-ENERGIZED:  REACTOR PROTECTION SYSTEM (RPS) CHANNEL 1,
 SAFETY FEATURES ACTUATION SYSTEM (SFAS) CHANNEL 1, AND STEAM AND
 FEEDWATER RUPTURE CONTROL SYSTEM (SFRCS) CHANNEL 1.  WHEN POWER WAS
 LOST TO RPS CHANNEL 1, THE HIGH AUCTIONEERED POWER SIGNAL TO THE ICS
 WENT TO 0% POWER.  THE ICS RESPONDED BY GIVING A COMMAND FOR
 CONTINUOUS CONTROL ROD MOTION OUTWARD.  A REACTOR TRIP DUE TO HIGH
 FLUX RESULTED.  THE CAUSE OF THE LOSS OF Y1 WAS PERSONNEL ERROR.
 WHILE REMOVING A SCREW ON THE TERMINALS IN CIRCUIT NUMBER Y120A,
 RT4597AB, CONTAINMENT POST-ACCIDENT HIGH RANGE RADIATION MONITOR, THE
 SCREW SLIPPED OFF THE SCREW STARTER AND THE LEAD PULLED THE SCREW
 BACK, WHICH THEN SHORTED IT TO GROUND.  THE TECHNICIAN WAS COUNSELED
 BY THE LEAD I&C ENGINEER.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  354   1987      034         0     8709040487  206294      07/30/87
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DOCKET:354  HOPE CREEK 1               TYPE:BWR
                 REGION:  1            NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: PUBLIC SERVICE ELECTRIC & GAS CO.
                SYMBOL: PEG

COMMENTS
 STEP 1: EFF WX - UNKNOWN. STEP 2: COMP XI - "BLOWN MAIN FUSE" INDICATING
 LAMP.

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR
  36  INADEQUATE TRAINING
  40  PROCEDURAL DEFICIENCY

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

ABSTRACT
 POWER LEVEL - 100%. A REACTOR SCRAM OCCURRED WHEN A 120 VAC
 UNINTERRUPTABLE POWER SUPPLY (UPS) INVERTER WHICH POWERS THE FEEDWATER
 CONTROL CABINET BECAME DE-ENERGIZED DURING THE COURSE OF ROUTINE
 MAINTENANCE.  THE RESULTANT LOSS OF FEEDWATER CONTROL CAUSED THE
 REACTOR TO SCRAM ON LOW LEVEL AT +12.5" DECREASING.  SUBSEQUENT
 INVESTIGATION DETERMINED THAT THE INVERTER BECAME DE-ENERGIZED WHEN IT
 WAS BEING RETURNED TO A NORMAL CONFIGURATION.  A SWITCHING ERROR
 CAUSED THE INVERTER MAIN POWER SUPPLY FUSE TO BLOW.  SEVERAL FACTORS
 CONTRIBUTED TO A LACK OF AWARENESS ON THE PART OF THE OPERATOR
 INVOLVED THAT THE INVERTER MAIN FUSE HAD BLOWN.  IN AN ATTEMPT TO
 CORRECT THE SWITCHING ERROR, THE BACKUP INFEED SOURCE TO THE INVERTER
 WAS ALSO DE-ENERGIZED.  THESE ACTIONS COMBINED TO REMOVE THE ENTIRE
 INVERTER FROM SERVICE.  CORRECTIVE ACTIONS INCLUDED VERIFYING FAULT
 INDICATING LAMPS ON ALL INVERTERS WERE INSTALLED, REVISING THE
 INVERTER OPERATING PROCEDURE, COUNSELLING THE OPERATOR INVOLVED, AND
 ENHANCING OPERATOR TRAINING ON INVERTER OPERATIONS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  354   1988     034          0     8901100190  212732      12/04/88
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DOCKET:354  HOPE CREEK 1               TYPE:BWR
                REGION:  1             NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: PUBLIC SERVICE ELECTRIC & GAS CO.
                SYMBOL: PEG

COMMENTS
 STEPS 10,16: CAUSE IX - VOLTAGE TRANSIENTS.

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:
    1 354/87-045

ABSTRACT
 POWER LEVEL - 100%. ON 12/4/88 AT 1537, HOPE CREEK EXPERIENCED AN
 UNEXPECTED POWER REDUCTION AND ESF ACTUATION (REACTOR WATER CLEANUP
 SYSTEM ISOLATION).WHEN A LOGIC SYSTEM OPTICAL ISOLATOR CABINET
 INTERNAL POWER SUPPLY BECAME DE-ENERGIZED.  AT THE ONSET OF THE EVENT,
 THE "B" REACTOR RECIRCULATION PUMP TRIPPED, AND THE RWCU INBOARD
 ISOLATION VALVE ISOLATED TRIPPING BOTH RWCU PUMPS; THESE RESPONSES
 WERE ACCOMPANIED BY VARIOUS INVALID ALARMS AND INDICATIONS. IMMEDIATE
 CONTROL ROOM RESPONSES INCLUDED STUFFING RODS IN ACCORDANCE WITH
 REACTOR ENGINEERING PROCEDURES TO COMPENSATE FOR REDUCED CORE
 FLOW/POWER LEVEL, ASSESSING PLANT STABILITY, VERIFYING
 ALARM/INDICATION STATUS, AND ESTABLISHING SINGLE RECIRCULATION LOOP
 OPERATIONS.  AFTER OPERATIONS DEPARTMENT ASSURED THAT CONDITIONS WERE
 STABLE, I&C DEPARTMENT COMMENCED TROUBLESHOOTING TO DETERMINE THE
 CAUSE OF THE OPTICAL ISOLATOR CABINET POWER FAILURE.  INITIAL
 TROUBLESHOOTING EFFORTS WERE FOCUSED ON A POTENTIALLY BAD POWER SUPPLY
 MONITOR CARD IN THE CABINET; SUBSEQUENT INVESTIGATION DETERMINED THAT
 THE CAUSE OF THE POWER FAILURE WAS LOOSE TERMINATIONS ON THE CABINET
 INTERNAL 24VDC POWER SUPPLY.  IMMEDIATE CORRECTIVE ACTIONS CONSISTED
 OF REPLACING THE SUSPECT POWER SUPPLY MONITOR CARD IN THE CABINET,
 TIGHTENING LOOSE TERMINATIONS AT THE POWER SUPPLY, AND RE-ENERGIZING
 THE CABINET.
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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
361	1982	138	0	8212070360	180064	11/09/82

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

WATCH-LIST CODES FOR THIS LER ARE:
975 POSSIBLE SIGNIFICANT EVENT

REFERENCE LERS:
1 361/82-136

ABSTRACT

MOMENTARY LOSS OF POWER TO THE FEEDWATER CONTROL SYSTEM (FCS) WAS EXPERIENCED. AS A PRECAUTION, THE REACTOR WAS MANUALLY TRIPPED. THE ECCS AUTOMATICALLY INITIATED DURING THE RESULTING COOLDOWN. THE CAUSE OF THIS EVENT WAS DUE TO THE INADVERTENT DISLODGING OF A POWER CORD RESULTING IN THE DEENERGIZATION OF THE FCS AND STEAM BYPASS CONTROL SYSTEM. IMMEDIATE CORRECTIVE ACTION INCLUDED MANUAL TRIPPING OF THE REACTOR. ALL CONTROL CABINETS WITH SIMILAR POWER SUPPLY CONNECTORS WERE SECURED BY "TIE-WRAPS". A PERMANENT MODIFICATION WILL BE DEVELOPED. OPERATOR AND SHIFT TECHNICAL ADVISER TRAINING WILL BE UPDATED BASED ON THIS EVENT. LER 82-136 (DUE DECEMBER 9, 1982) WILL ADDRESS THE COOLDOWN TRANSIENT. LCO 3.4.8.1B AND A SPECIAL REPORT (DUE FEBRUARY 8, 1983) WILL ADDRESS THE ECCS INITIATION (LCO 3.5.2B).

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  361   1984      043         0     8409170538  191386      08/08/84
*************************************************************************

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

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

ABSTRACT
 POWER LEVEL - 100%. ON AUGUST 8, 1984 AT 1710, WITH UNIT 2 IN MODE 1
 AT 100% POWER, A PENALTY FACTOR FROM CONTROL ELEMENT ASSEMBLY
 CALCULATOR (CEAC 1) CAUSED THE CPC'S TO GENERATE LOW DEPARTURE FROM
 NUCLEATE BOILING RATIO TRIP SIGNALS TO THE REACTOR PROTECTION SYSTEM.
 THE REACTOR TRIPPED, AND THE EMERGENCY FEEDWATER SYSTEM ACTUATED ON
 LOW STEAM GENERATOR LEVEL DUE TO SHRINK.  THE CEAC 1 PENALTY FACTOR
 RESULTED FROM SPURIOUS ROD POSITION INDICATIONS DUE TO AN ANALOG INPUT
 POWER SUPPLY FAILURE IN CPC B.  EACH CONTROL ELEMENT ASSEMBLY (CEA)
 HAS TWO REED SWITCH POSITION TRANSMITTER STACKS.  EACH STACK SUPPLIES
 CEA POSITION INDICATION TO ONE CEAC AND ONE CPC.  THE FAILURE OF THE
 POWER SUPPLY IN CPC B CAUSED A FEEDBACK THROUGH THIS COMMON CIRCUIT TO
 CEAC 1 SUCH THAT THE CPC B TARGET CEA'S INDICATED PARTIALLY INSERTED
 AND CEAC 1 CALCULATED A PENALTY FACTOR BASED ON THESE ERRONEOUS
 INDICATIONS.  THE DEFECTIVE POWER SUPPLY WAS REPLACED. ADDITIONALLY,
 COMPUTER TECHNICIANS HAVE BEEN DIRECTED TO SET THE CEAC INOP FLAG IN
 THE CPC'S WHEN PERFORMING CPC MAINTENANCE WHICH REQUIRES DEENERGIZING
 A CPC POWER SUPPLY.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
  361   1985     041          0     8509060235  195433      08/01/85
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DOCKET:361  SAN ONOFRE 2             TYPE:PWR
                REGION:  5           NSSS:CE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: SOUTHERN CALIFORNIA EDISON CO.
                SYMBOL: SCE
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COMMENTS

STEP 1: EFFECT IX - VOLTAGE TRANSIENT; STEP 2: COMP RLX - AUXILIARY RELAYS.

REPORTABILITY CODES FOR THIS LER ARE:

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

ABSTRACT

POWER LEVEL - 100%. ON 8-1-85, AT 1535 THE REACTOR TRIPPED IN RESPONSE TO LOSS OF LOAD TRIP SIGNALS. THE LOSS OF LOAD SIGNALS WERE GENERATED AS RESULT OF A SPURIOUS TURBINE TRIP. ALL SAFETY SYSTEMS WERE VERIFIED TO HAVE FUNCTIONED PROPERLY. THE SPURIOUS TURBINE TRIP WAS CAUSED BY A VOLTAGE TRANSIENT ON PHASE 'A' OF THE NON-1E UNINTERRUPTIBLE POWER SUPPLY (UPS) (EIIS SYSTEM CODE EE) INVERTER (EIIS COMPONENT CODE INVT) 2Y012. THIS INVERTER SUPPLIES POWER TO 2 AUX RELAYS (EIIS COMPONENT CODE RLY) ASSOCIATED WITH THE CONTROL ELEMENT DRIVE MECHANISM (CEDM) (EIIS COMPONENT CODE DRIV) UNDERVOLTAGE RELAYS WHICH MAKE UP PART OF THE TURBINE TRIP CIRCUITRY. THE TRANSIENT DE-ENERGIZED THE AUX RELAYS, CLOSED THEIR CONTACTS AND COMPLETED THE TURBINE TRIP LOGIC. THE TRANSIENT WAS VERIFIED TO HAVE OCCURRED BASED ON ALARMS ON SEVERAL INSTRUMENTS POWERED BY PHASE 'A' AND NO SUCH INDICATIONS ON INSTRUMENTS POWERED BY OTHER PHASES OF THE UPS. NO DEFECTS WERE FOUND IN INVERTER 2Y012. THE CAUSE OF THE VOLTAGE TRANSIENT IS UNKNOWN. AS CORRECTIVE ACTION, A DESIGN CHANGE HAS BEEN IMPLEMENTED WHICH RE-ARRANGED THE AUX RELAYS, SO THAT A SINGLE PHASE VOLTAGE TRANSIENT WILL NOT CAUSE A TURBINE TRIP.

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
361	1986	015	0	8607250177	200019	06/19/86

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

COMMENTS
STEP 7: CAUSE AX - FOR TESTING.

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

ABSTRACT

POWER LEVEL - 083%. ON JUNE 19, 1986, AT 1355 WITH UNIT 2 IN MODE 1 AT 83% POWER, THE REACTOR TRIPPED WHEN 120 VAC VITAL BUS 3 WAS DE-ENERGIZED DUE TO THE FAILURE OF INVERTER Y003. DE-ENERGIZATION OF VITAL BUS 3 ALSO DE-ENERGIZED CONTROL ELEMENT ASSEMBLY CALCULATOR (CEAC) NO. 2 WHILE CEAC NO. 1 WAS OUT OF SERVICE FOR TESTING. WITH BOTH CEACS INOPERABLE, COMPENSATORY PENALTY FACTORS RESULTED IN CORE PROTECTION CALCULATOR DEPARTURE FROM NUCLEATE BOILING RATIO AND LOCAL POWER DENSITY REACTOR TRIPS. THE FEEDWATER CONTROL SYSTEM (FWCS) FAILED TO SUFFICIENTLY REDUCE FEEDWATER FLOW AFTER THE TRIP RESULTING IN EXCESS FEEDWATER ADDITION TO THE STEAM GENERATORS (SG). OPERATORS APPROPRIATELY TRIPPED FEEDWATER PUMPS TO SUCCESSFULLY AVOID OVERCOOLING OF THE REACTOR COOLANT SYSTEM (RCS) AND ASSOCIATED RCS PRESSURE DECREASE. THE FWCS RESPONSE OCCURRED DUE TO AN EXCESSIVE MANUAL BIAS IN THE MAIN FEED PUMP TURBINE SPEED CONTROLLERS. PROCEDURES ARE BEING CHANGED AND OPERATORS HAVE BEEN INFORMED OF THE IMPACT OF EXCESSIVE BIAS SETTINGS ON POST REACTOR TRIP FWCS OPERATION. THE 2Y003 INVERTER FAILURE WAS CAUSED BY A SHORTED CAPACITOR WHICH WAS AN ISOLATED OCCURRENCE. THE CAPACITOR WAS REPLACED AND THE INVERTER WAS RETURNED TO SERVICE. THERE WERE NO SAFETY CONSEQUENCES ASSOCIATED WITH THIS EVENT SINCE ALL SAFETY-RELATED SYSTEMS OPERATED AS DESIGNED.

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
361	1990	014	0	9101020188	220598	11/20/90

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

COMMENTS
STEP 4: EFF WX - ACTUATION SIGNAL.

WATCH-LIST CODES FOR THIS LER ARE:
35 HUMAN ERROR
16 MOISTURE

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

REFERENCE LERS:
1 361/84-016

ABSTRACT

POWER LEVEL - 100%. AT 0946 ON 11/20/90, WITH UNIT 2 IN MODE 1 AT 100% POWER, THE SAFETY INJECTION SYSTEM (SIS), CONTAINMENT COOLING SYSTEM (CCS) AND CONTAINMENT SPRAY SYSTEM (CSS) WERE INADVERTENTLY ACTUATED WHILE PERFORMING A 31-DAY INTERVAL SURVEILLANCE OF THOSE SYSTEMS. ALL SYSTEMS AND COMPONENTS FUNCTIONED AS DESIGNED. AFTER VERYFIYING THAT THE ACTUATIONS WERE SPURIOUS, CONTAINMENT SPRAY (CS) WAS SECURED AT APPROXIMATELY 0947. DURING THE ONE MINUTE PERIOD THAT CS WAS INITIATED, APPROXIMATELY 4800 GALLONS OF BORATED WATER FROM THE REFUELING WATER STORAGE TANKS WERE SPRAYED INTO CONTAINMENT. AT 1020, SIS AND CCS WERE RESET AND AT 1029, CSS WAS RESET AND ACTUATED COMPONENTS WERE STOPPED IN ACCORDANCE WITH APPROPRIATE PROCEDURES. ALTHOUGH NO SAFETY SYSTEMS WERE AFFECTED BY THE CONTAINMENT SPRAY, DEGRADED ELECTRICAL CONDITIONS WERE OBSERVED IN THE POWER SUPPLY TO THE CONTROL ELEMENT DRIVE MECHANISMS (CEDM). ON 11/23/90, UNIT 2 WAS SHUT DOWN TO CORRECT THESE DEGRADED CEDM ELECTRICAL CONDITIONS. THE ROOT CAUSE OF THIS EVENT IS PERSONNEL ERROR. DURING THE SURVEILLANCE, ONE TRIP PATH FOR SIS, CCS, AND CSS IS ACTUATED; CONTRARY TO THE PROCEDURE, THE FIRST TRIP PATH WAS NOT RESET PRIOR TO TESTING (AND ACTUATING) THE NEXT TRIP PATH. WITH THESE TWO TRIP PATHS ACTUATED, THE SELECTIVE 2 OF 4 ACTUATION LOGIC WAS SATISFIED, THUS INITIATING SIS, CCS, AND CSS.

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FORM   102                LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER    NSIC      EVENT DATE
  361   1990      016         0     9101140111  220676      12/06/90
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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.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  362   1991      001         0     9104220351  221467      03/15/91
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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 BUSSES POWERED BY THE NON-1E UPS WERE MODIFIED SUCH THAT
 POWER WILL BE MAINTAINED TO CRITICAL COMPONENT SYSTEMS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
  366   1982     105          0     8210290209  179109      09/18/82
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DOCKET:366  HATCH 2                  TYPE:BWR
                REGION:  2           NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: GEORGIA POWER CO.
                SYMBOL: GPC

ABSTRACT
 PERSONNEL WERE SELECTING RODS TO INCREASE POWER FROM 875 MWT.  DURING
 THIS, THE ROD OUT PERMISSIVE LIGHT WENT OUT; HOWEVER, ROD BLOCK ALARMS
 WERE NOT RECEIVED.  ROD BLOCK MONITOR B WAS SUBSEQUENTLY DETERMINED
 TO BE INOPERABLE; ROD BLOCK MONITOR A REMAINED OPERABLE.  THE UNIT WAS
 PLACED IN A 24 HOUR LCO IN ACCORDANCE WITH TECH SPECS 3.1.4.3 ACTION
 A.  THE PROBLEM WITH B RBM WAS FOUND TO BE A BLOWN POWER FUSE.  THE
 FUSE WAS REPLACED.  VOLTAGES TO THE RBM WERE CHECKED AND NO PROBLEMS
 WERE FOUND.  PROPER OPERATION WAS VERIFIED BY SELECTING RODS AND
 OBSERVING CORRECT CONTROL BOARD LIGHT INDICATIONS.  THE LCO WAS
 CLEARED WITHIN THE REQUIRED TIME LIMIT.
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FORM   105                LER SCSS DATA                     08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  366   1987      006         1     8906010268  213972       07/26/87
********************************************************************

DOCKET:366  HATCH 2                  TYPE:BWR
                REGION:  2           NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: GEORGIA POWER CO.
                SYMBOL: GPC

COMMENTS
 OTHER REPORTABILITY: TECH SPEC 3.5.1. STEP 2: PSYS HS - VITAL AC ROOM. STEP
 3: MODEL SV12250. STEP 7: COMP MSC - LATCHING ARM.

WATCH-LIST CODES FOR THIS LER ARE:
  34  DESIGN ERROR OR INADEQUACY

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

REFERENCE LERS:
    1 321/85-010     2 321/87-011

ABSTRACT
 POWER LEVEL - 089%. ON 7/26/87, AT APPROXIMATELY 1405 CDT, UNIT 2 WAS
 IN THE RUN MODE AT AN APPROXIMATE POWER LEVEL OF 2170 MWT
 (APPROXIMATELY 89 PERCENT OF RATED THERMAL POWER).  AT THAT TIME,
 VITAL AC (EIIS CODE EE) POWER WAS LOST. THIS RESULTED IN A DECREASE IN
 THE REACTOR FEEDWATER PUMPS FLOW AND A DECREASE IN REACTOR WATER
 LEVEL.  THE REACTOR WATER LEVEL DECREASED TO THE REACTOR PROTECTION
 SYSTEM (RPS EIIS CODE JC) ACTUATION SETPOINT AND A REACTOR SCRAM
 OCCURRED.  THE ROOT CAUSE OF THIS EVENT IS ATTRIBUTED TO EQUIPMENT
 FAILURE DUE TO INADEQUATE HEATING VENTILATION AND AIR CONDITIONING
 (HVAC) DESIGN TO ENSURE THE VITAL AC EQUIPMENT (I.E., ELECTRICAL
 INVERTER) IS PROPERLY COOLED.  THE ELECTRONIC EQUIPMENT FAILURE IN THE
 INVERTER IS ATTRIBUTED TO THE HIGH ROOM TEMPERATURES.  CORRECTIVE
 ACTIONS FOR THIS EVENT INCLUDE:  1) REFURBISHING THE INVERTER, 2)
 ADDING TEMPORARY COOLING TO THE INVERTER ROOMS, 3) INSTALLING A NEW
 HVAC SYSTEM FOR COOLING INVERTER ROOMS, 4) DEVELOPING A UNIT COMMON
 PREVENTIVE MAINTENANCE PROCEDURE FOR BOTH INVERTERS AND, 5) INSTALLING
 NEW VITAL AC INVERTERS FOR BOTH UNITS 1 AND 2.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  366   1987      009         1     8801250292  207902      08/03/87
*********************************************************************

DOCKET:366  HATCH 2                   TYPE:BWR
                REGION:  2            NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: GEORGIA POWER CO.
                SYMBOL: GPC

COMMENTS
 OTHER REPORTABILITY: TECH SPEC 3.5.1. STEPS 15/16: MODEL CAT CJ2-G3-U.

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.
  21  OTHER: Voluntary report, special report, Part 21 report,
      etc.

REFERENCE LERS:
    1 321/85-010     2 321/87-011     3 366/87-006

ABSTRACT
 POWER LEVEL - 090%. ON 8/3/87 AT APPROXIMATELY 1152 CDT, UNIT 2 WAS IN
 THE RUN MODE AT AN APPROXIMATE POWER LEVEL OF 2193 MWT (APPROXIMATELY
 90 PERCENT OF RATED THERMAL POWER).  AT THAT TIME, VITAL AC (EIIS
 CODE EE) POWER WAS LOST. THIS RESULTED IN A DECREASE IN THE REACTOR
 FEEDWATER PUMPS FLOW AND A DECREASE IN REACTOR WATER LEVEL.  THE
 REACTOR WATER LEVEL DECREASED TO THE REACTOR PROTECTION SYSTEM (RPS
 EIIS CODE JC) ACTUATION SETPOINT AND A REACTOR SCRAM OCCURRED.  THE
 ROOT CAUSE OF THIS EVENT IS ELECTRICAL EQUIPMENT FAILURE.
 SPECIFICALLY, CIRCUIT BREAKER CB-4 WOULD OPEN UNDER UNDULY LOW FORCE
 CONDITIONS.  IT WAS CONCLUDED AFTER FIELD TESTING AND CONSULTATION
 WITH THE MANUFACTURER THAT THE TRIPPING MECHANISM WAS WEAK. CORRECTIVE
 ACTIONS FOR THIS EVENT INCLUDED:  1) INSTALLING JUMPERS AND REMOVING
 EQUIPMENT FROM SERVICE, 2) DESIGNING AND INSTALLING BARRIER BOXES, 3)
 VERIFYING TRIP INSTRUMENTATION AND LEVEL TRANSMITTERS IN CALIBRATION,
 4) VENTING INSTRUMENT LINES AND TRANSMITTERS, 5) PERFORMING
 EVALUATIONS OF AIR ENTRAINMENT AND SPIKING IN INSTRUMENT LINES, 6)
 INITIATING PROCEDURE REVISIONS, AND 7) VERIFYING CERTAIN OTHER SYSTEMS
 DO NOT HAVE LOW SUCTION TRIPS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  366   1988     020          0     8809140065  210345     08/05/88
*******************************************************************

DOCKET:366  HATCH 2                     TYPE:BWR
                REGION:  2              NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: GEORGIA POWER CO.
                SYMBOL: GPC

COMMENTS
 STEP 4: MODEL NO. FRN-R3. STEP 16: MODEL NO. 1154DP5.

WATCH-LIST CODES FOR THIS LER ARE:
  34  DESIGN ERROR OR INADEQUACY
 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%. ON 08/05/88, AT APPROXIMATELY 1546CDT, UNIT 2 WAS
 IN THE RUN MODE AT AN APPROXIMATE POWER LEVEL OF 2424 MWT
 (APPROXIMATELY 100 PERCENT OF RATED THERMAL POWER).  WHEN REINSTALLING
 A REPAIRED FEEDWATER MINIMUM FLOW CONTROLLER , A FUSE BLEW, CAUSING
 MINIMUM FLOW VALVES ON THE CONDENSATE, CONDENSATE BOOSTER AND REACTOR
 FEED PUMPS TO FAIL OPEN. THIS RESULTED IN A LOSS OF SUCTION AND
 SUBSEQUENT TRIPPING OF THE CONDENSATE BOOSTER PUMPS AND REACTOR FEED
 PUMPS.  THE RAPID DECREASE IN REACTOR WATER LEVEL RESULTED IN A
 REACTOR SCRAM, A PRIMARY CONTAINMENT ISOLATION SYSTEM VALVE GROUP 2
 AND PARTIAL GROUP 5 ISOLATION.  REACTOR WATER LEVEL WAS RESTORED USING
 THE 'A' REACTOR FEED PUMP, THE HIGH PRESSURE COOLANT INJECTION SYSTEM
 AND THE REACTOR CORE ISOLATION COOLING SYSTEM.  THE EVENT WAS CAUSED
 BY A DESIGN DEFICIENCY.  AN ELECTRICAL CIRCUIT CONTAINING TWELVE
 INSTRUMENTS, INCLUDING FOUR CONDENSATE AND FEEDWATER SYSTEM
 CONTROLLERS, HAD ONLY ONE IN-LINE FUSE. AS A RESULT, AN IN-LINE FUSE
 (2N21-F7) FAILED WHICH RESULTED IN A LOSS OF SUCTION FOR AND THE
 TRIPPING OF THE CONDENSATE BOOSTER PUMPS AND THE REACTOR FEED PUMPS.
 THE FUSE WAS REPLACED AND A DESIGN REVIEW OF THE FEEDWATER CONTROL
 SYSTEM WAS INITIATED TO IDENTIFY AND CHANGE ANY SIMILAR DEFICIENT
 CONDITIONS.
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FORM   108                LER SCSS DATA                     08-30-91
*******************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  369   1981     145         0     8110010131  169077      08/22/81
*******************************************************************

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

COMMENTS
 STEP 6: COMPONENT XI - CONTROL BOARD INDICATOR.

ABSTRACT
 A LOSS OF CONTROL POWER TO NUCLEAR INSTRUMENTATION POWER RANGE CHANNEL
 N-44 CAUSED THE TRIP OF THE ASSOCIATED CHANNEL REACTOR TRIP BISTABLES
 AND THE ACTUATION OF ATTENDANT CONTROL BOARD INDICATORS AND ALARMS.
 WHILE PERFORMING CORRECTIVE MAINTENANCE IN THE COMPARATOR AND RATE
 PORTION OF THE NUCLEAR INSTRUMENTATION SYSTEM, A TECHNICIAN
 ACCIDENTALLY GROUNDED PART OF THE CHANNEL N-44 CIRCUITRY CAUSING THE
 POWER SUPPLY BREAKER TO OPEN, REMOVING ALL POWER FROM THE CHANNEL.
 THE PROCEDURE MALFUNCTION OF NUCLEAR INSTRUMENTATION WAS IMPLEMENTED,
 AND THE POWER SUPPLY BREAKER WAS CLOSED.
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FORM   109               LER SCSS DATA                          08-30-91

***********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  370   1987      016         1     8712220087  207557      09/06/87
***********************************************************************

DOCKET:370  MCGUIRE 2                 TYPE:PWR
                REGION:  2            NSSS:WE
ARCHITECTURAL ENGINEER: DUKE
     FACILITY OPERATOR: DUKE POWER CO.
                SYMBOL: DPC

COMMENTS
 STEP 10: MODEL #1MA459833-G1-LY. STEP 49: COMP XC - AUTO START CONTROLLER.

WATCH-LIST CODES FOR THIS LER ARE:
  19  VIBRATION
  10  ENVIRONMENTAL CONDITIONS

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

REFERENCE LERS:
    1 369/84-024     2 370/85-026     3 370/86-016     4 370/86-021.

ABSTRACT
 POWER LEVEL - 100%. AT 100% POWER ON SEPTEMBER 6, 1987 AT 1035, A UNIT
 2 REACTOR/TURBINE TRIP OCCURRED DUE TO HIGH PRESSURIZER PRESSURE WHEN
 MAIN TURBINE GOVERNOR AND INTERCEPT VALVES CLOSED AS DIRECTED BY THE
 DIGITAL ELECTRO-HYDRAULIC (DEH) TURBINE CONTROL SYSTEM.  THE GOVERNOR
 AND INTERCEPT VALVE CLOSE SIGNAL WAS GENERATED BY LOSS OF POWER TO A
 DEH TURBINE CONTROL SYSTEM RELAY WHEN POWER WAS LOST TO KXB.  POWER
 WAS LOST ON AUXILIARY POWER PANELBOARD KXB DUE TO AN OVERCURRENT FAULT
 BREAKER TRIP CAUSED BY A GROUNDED MOTOR LEAD CONNECTOR (INSULATING
 TAPE HAD WORN ALLOWING CONNECTING LUG TO GROUND TO MOTOR FRAME) ON
 INSTRUMENT AIR (VI) COMPRESSOR A.  OPERATIONS IMPLEMENTED THE REACTOR
 TRIP PROCEDURE.  POWER WAS RESTORED TO AUXILIARY POWER PANELBOARD KXB
 FROM STATIC INVERTER KXB. UNIT 2 RETURNED TO MODE 1, POWER OPERATION,
 ON SEPTEMBER 7, AT 2110. THE CONNECTING LUG WAS REINSULATED IN THE
 CONNECTION BOX AND THE COMPRESSOR WAS RETURNED TO SERVICE.  VI
 COMPRESSOR MOTORS B&C WILL BE INSPECTED FOR SIMILAR CONDITION.
 SIMILAR MOTORS IN OTHER APPLICATIONS WILL BE INSPECTED AND RETAPED AS
 NECESSARY.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  373   1988     004          0     8806010027  209475      04/22/88
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DOCKET:373  LA SALLE 1                TYPE:BWR
                REGION:  3            NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 STEP 3:"NON" TYPE, 6 AMP. STEP 5: COMP MSC - TRANSISTOR. $MP/T/1 MP/T/1/374

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR

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

REFERENCE LERS:
    1 373/87-084

ABSTRACT
 POWER LEVEL - 000%. ON APRIL 22, 1988 AT 1319 HOURS, WITH UNIT 1
 DEFUELED AND UNIT 2 IN OPERATIONAL CONDITION 1 (RUN) AT 96% POWER,
 DURING THE PERFORMANCE OF WORK REQUEST L79559 BY THE INSTRUMENT
 MAINTENANCE (IM) DEPARTMENT, REACTOR PROTECTION SYSTEM (RPS) BUS "A"
 TRIPPED.  IN ACCORDANCE WITH THE WORK REQUEST, THE TECHNICIAN WAS
 REPLACING RELAY 1C51B-K1 IN AVERAGE POWER RANGE MONITOR (APRM) "A"
 PANEL 1H13-0608, WHEN A SMALL SPARK OCCURRED NEAR THE RELAY SOCKET.
 WITH THE TRIP OF RPS BUS "A" ON UNIT 1, A NUMBER OF AUTOMATIC ACTIONS
 OCCURRED AS A RESULT OF THE SUBSEQUENT GROUP II THROUGH VII ISOLATIONS
 AND HALF SCRAM.  IMMEDIATE INVESTIGATION REVEALED THAT THE 1C71-S003A
 & C POWER MONITORING ASSEMBLIES (PMA'S), THE 175 AMP "A" RPS
 GENERATOR OUTPUT BREAKER WERE TRIPPED, AND A 6 AMP FUSE (1C71-F12A)
 WAS BLOWN, ALL OF WHICH FEED THE APRM CIRCUITRY.  THE INITIATION OF
 THE EVENT WAS DETERMINED TO BE A SHORT TO GROUND WHICH OCCURRED WHEN
 THE REPLACEMENT 1C51B-K1 RELAY WAS MISPOSITIONED WHILE BEING INSERTED
 INTO THE RELAY SOCKET BY THE IM TECHNICIAN.  THE SAFETY CONSEQUENCES
 OF THE EVENT WERE MINIMAL SINCE UNIT 1 WAS DEFUELED.  ALL ISOLATIONS
 AND ACTUATIONS (HALF SCRAM ON UNIT 1 SBGT INITIATION) OCCURRED AS
 DESIGNED.  THE 1C51B-K1 RELAY WHICH WAS BEING INSTALLED IN THE APRM
 CIRCUITRY WHEN THE "A" RPS BUS TRIPPED WAS BENCH TESTED BY THE IM
 DEPARTMENT AND FOUND TO BE UNDAMAGED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  374   1986     008          0     8606120533  199783      05/09/86
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DOCKET:374  LA SALLE 2                TYPE:BWR
                REGION:  3            NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

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

ABSTRACT
 POWER LEVEL - 086%. ON MAY 9, 1986 AT 0910 HOURS, WITH LASALLE UNIT 2
 AT 86% POWER, A REACTOR SCRAM OCCURRED WHEN A STATIONMAN ACCIDENTALLY
 BUMPED OPEN A BREAKER WHILE SWEEPING THE FLOOR.  THE BREAKER WAS A
 PRIMARY TRANSFORMER DISCONNECT FEEDING THE 120/208V DISTRIBUTION PANEL
 AT MOTOR CONTROL CENTER (MCC) 235X-3.  THE DISTRIBUTION PANEL FEEDS
 THE FEEDWATER LEVEL CONTROL PANEL 2H13-P612.  WITH A LOSS OF AC POWER
 TO THIS PANEL, THE 2B TURBINE DRIVEN REACTOR FEED PUMP LOCKED OUT AT
 41% DEMAND AND THE 2A TURBINE DRIVEN REACTOR FEED PUMP COASTED DOWN TO
 ZERO OUTPUT.  WITH 41% FLOW FROM ONLY ONE FEED PUMP, THE REACTOR
 WATER LEVEL DROPPED RAPIDLY AND A FULL AUTO SCRAM OCCURRED.  THE MOTOR
 DRIVEN REACTOR FEED PUMP WAS MANUALLY STARTED DURING THE EVENT, BUT
 DUE TO THE LOSS OF CONTROL POWER THE FEEDWATER REGULATING VALVE WAS
 LOCKED OUT. THE CAUSE OF THE SCRAM WAS A LOSS CF FEEDWATER DUE TO LOSS
 OF POWER TO THE FEEDWATER LEVEL CONTROL PANEL.  AN INVESTIGATION
 MEETING AND TRAINING TAILGATE MEETING WERE HELD ON MAY 9, 1986 WITH
 THE STATIONMAN INVOLVED AND WITH ALL OTHER STATIONMEN .  THE SESSIONS
 STRESSED THE IMPORTANCE OF CAUTION WHEN WORKING AROUND ANY PLANT
 EQUIPMENT, ESPECIALLY DISTRIBUTION CENTERS AND INSTRUMENT RACKS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  374   1986      011         1     8612020003  201908     06/01/86
******************************************************************

DOCKET:374  LA SALLE 2                TYPE:BWR
                REGION:  3            NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 WATCH LIST 975- REACTOR FAILED TO SCRAM ON LOW LEVEL. STEP 3: T/D FEEDWATER
 PUMP STOP VALVE WAS BEING TESTED. STEP 5: EFF IX - VOLTAGE SPIKES. STEP
 12: OPERATOR RESET CONTROL LOCKOUT WITHOUT ZEROING THE SIGNAL DEVIATION OR
 SWITCHING TO MANUAL MODE. STEP 22: CAUSE SD- LEVEL RECORDER PEN FAILED TO
 MARK THE LOWEST REACTOR LEVEL WITH INK (BUT IT DID CREASE THE PAPER), SO
 OPERATORS FAILED TO IMMEDIATELY RECOGNIZE THE FAILURE TO SCRAM ON LOW
 LEVEL.

WATCH-LIST CODES FOR THIS LER ARE:
 975  POSSIBLE SIGNIFICANT EVENT
 943  ALERT
 233  TRANSIENT PROCEEDS IN A SIGNIFICANT, UNEXPECTED

REPORTABILITY CODES FOR THIS LER ARE:
  11  10 CFR 50.73(a)(2)(ii): Unanalyzed conditions.
  14  10 CFR 50.73(a)(2)(v): Event that could have prevented
      fulfillment of a safety function.

ABSTRACT
 POWER LEVEL - 095%. AT 4:20 AM, 6-1-86, LASALLE STATION 2 WAS
 OPERATING AT 95% OF FULL POWER, WHEN A FEEDWATER TRANSIENT OCCURRED
 WHICH CAUSED REACTOR VESSEL LEVEL TO DROP TO THE LEVEL 3 TRIP
 SETPOINT.  THE LEVEL TRANSIENT ENDED WITH THE OPERATORS ABLE TO
 RESTORE LEVEL TO THE NORMAL OPERATING RANGE. SUBSEQUENT INVESTIGATION
 DETERMINED THAT THE INDICATED LEVEL HAD DROPPED BELOW THE TRIP
 SETPOINT AND A REACTOR SCRAM HAD NOT OCCURRED.  A TRIP WAS RECEIVED ON
 THE "B" RPS CHANNEL.  THE CAUSE OF THIS EVENT WAS DUE TO A FAILURE OF
 THE REACTOR VESSEL LEVEL 3 SWITCHES (MANUFACTURED BY SOR, INC.) TO
 TRIP AT THE SET LEVEL.  THE EXACT CAUSE OF THE SWITCH FAILURE HAS NOT
 BEEN DETERMINED.  THE ACTIONS TAKEN WERE TO COMMENCE AN ORDERLY
 REACTOR SHUTDOWN, MANUALLY TRIP THE "A" RPS CHANNEL AND TO INSTRUCT
 THE OPERATORS TO MANUALLY TRIP THE REACTOR IF THE REACTOR VESSEL LEVEL
 DROPPED TO THE LEVEL 3 TRIP SETPOINT, AND TO DECLARE A GSEP ALERT.
 TO DATE, THE COMMONWEALTH EDISON COMPANY SOR TESTING PROGRAM HAS BEEN
 ABLE TO CHARACTERIZE THE VARIABILITY IN THE SOR DIFFERENTIAL PRESSURE
 SWITCH SETPOINTS.  AN EXACT CAUSE FOR THE VARIABILITY OF THE SETPOINTS
 HAS NOT BEEN DETERMINED.  AN ACTION PLAN HAS BEEN DEVELOPED FOR
 INTERIM AND LONG TERM CORRECTIVE ACTION.
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FORM   113                 LER SCSS DATA                         08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  382   1988      033         0     8901110062  212794      12/08/88
*********************************************************************

DOCKET:382  WATERFORD 3               TYPE:PWR
                REGION:  4            NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: LOUISIANA POWER & LIGHT CO.
                SYMBOL: LPL

COMMENTS
 WATCH 932 - INFORMATION NOTICE 85-77. STEP 28: EFF WX - TRIP ON CALCULATED
 DNBR.

WATCH-LIST CODES FOR THIS LER ARE:
  31  ACCIDENTAL ACTION
  35  HUMAN ERROR
 932  RESULT OF IE BULLETINS, ORDERS, ETC.(IEB 81-7)

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

ABSTRACT
 POWER LEVEL - 100%. AT 1311 HOURS ON DECEMBER 8, 1988, WATERFORD STEAM
 ELECTRIC STATION UNIT 3 WAS OPERATING AT 100% POWER WHEN A TRANSIENT
 INDUCED BY THE CYCLING OF POWER DISTRIBUTION PANEL (PDP) 3014AB
 BREAKERS CAUSED THE REACTOR TO TRIP ON LOW DEPARTURE FROM NUCLEATE
 BOILING RATIO (DNBR).  THE PDP COVER SLIPPED WHILE BEING REMOVED FOR
 MAINTENANCE, CAUSING ONE-HALF OF THE PDP BREAKERS TO OPEN.  THE
 MAINTENANCE PERSONNEL CLOSED THE BREAKERS CAUSING PRESSURIZER PRESSURE
 INSTRUMENT CONTROL LOOPS TO REENERGIZE; THIS APPEARED TO THE STEAM
 BYPASS CONTROL SYSTEM AND REACTOR POWER CUTBACK SYSTEM (RPCS) AS A
 LARGE LOAD REJECTION.  STEAM BYPASS CONTROL VALVES QUICK-OPENED AND
 THE RPCS ACTUATED.  DUE TO THE LOSS OF POWER TO MAIN TURBINE (MT)
 CONTROL CIRCUITS, THE MT WAS NOT SETBACK BY THE RPCS.  WITH THE
 RESULTING STEAM DEMAND GREATER THAN REACTOR POWER, REACTOR COOLANT
 SYSTEM (RCS) PRESSURE DECREASED AND THE CORE PROTECTION CALCULATORS
 TRIPPED THE REACTOR ON ANTICIPATED LOW DNBR. THE ROOT CAUSE OF THIS
 EVENT IS INADEQUATE ADMINISTRATIVE CONTROL OF WORK PERFORMED ON OR
 AROUND EQUIPMENT THAT COULD CAUSE A PLANT TRIP OR SAFETY SYSTEM
 ACTUATION.  A DIRECTIVE IS BEING DEVELOPED TO AID IN THE PLANNING AND
 APPROVAL OF HIGH RISK TASKS.  SINCE SAFETY SYSTEMS FUNCTIONED TO
 PROTECT THE PLANT, THERE WAS NO DANGER TO THE HEALTH OR SAFETY OF THE
 PUBLIC OR PLANT PERSONNEL.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  382   1990      002         0     9004270164  218033      03/22/90
********************************************************************

DOCKET:382  WATERFORD 3              TYPE:PWR
                REGION:  4           NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: LOUISIANA POWER & LIGHT CO.
                SYMBOL: LPL

COMMENTS
 STEP 2: COMP MSC - DRAWER SLIDES.

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR

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

REFERENCE LERS:
    1 382/86-001     2 382/86-002     3 382/86-009     4 382/86-013
    5 382/86-023     6 382/89-017

ABSTRACT
 POWER LEVEL - 100%. AT 2133 HOURS ON MARCH 22, 1990, AN AUTOMATIC
 REACTOR TRIP OCCURRED AT WATERFORD STEAM ELECTRIC STATION UNIT 3 WHILE
 THE PLANT WAS OPERATING AT 100% POWER.  THE REACTOR TRIP WAS
 INITIATED BY THE PLANT PROTECTION SYSTEM WHEN TWO CONTROL ELEMENT
 ASSEMBLIES (CEAS) DROPPED TO THE FULLY INSERTED POSITION WHILE THEIR
 DRIVE MECHANISMS WERE BEING TRANSFERRED FROM THEIR NORMAL POWER SUPPLY
 TO THE CONTROL ELEMENT DRIVE MECHANISM SYSTEM (CEDMCS) HOLD BUS.
 THIS EVENT IS REPORTABLE BY REASON OF THE OCCURRENCE OF AN AUTOMATIC
 REACTOR PROTECTION SYSTEM ACTUATION.  THE ROOT CAUSE OF THIS EVENT WAS
 AN EQUIPMENT MALFUNCTION.  INSPECTIONS SUBSEQUENT TO THE TRIP
 REVEALED THAT SEVERAL ELECTRICAL CONNECTORS USED TO TRANSMIT POWER
 FROM THE CEDMCS PANELS TO A CEA DRIVE MECHANISM WERE DAMAGED FROM
 MISALIGNMENT DURING PREVIOUSLY PERFORMED MAINTENANCE.  THIS CONDITION
 DISRUPTED THE POWER SUPPLY CIRCUITRY OF THE CEA DRIVE MOTORS AFFECTED,
 CAUSING DISENGAGEMENT OF THE DRIVE MECHANISMS FOR THESE CEAS.  THE
 DAMAGED COMPONENTS IN THE POWER SUPPLY CIRCUITRY WERE REPLACED AND
 OPERATIONALLY CHECKED TO BE SATISFACTORY.  ALL PLANT PROTECTIVE
 FEATURES FUNCTIONED AS DESIGNED AND NO THREAT WAS POSED TO THE HEALTH
 OR SAFETY OF THE GENERAL PUBLIC OR PLANT PERSONNEL DURING THIS EVENT.
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FORM   115                LER SCSS DATA                      08-30-91
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  387   1984      029         0     8408090421  191267      07/03/84
********************************************************************

DOCKET:387  SUSQUEHANNA 1            TYPE:BWR
                REGION:  1.          NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: PENNSYLVANIA POWER & LIGHT CO.
                SYMBOL: PPL

COMMENTS
 STEP 7: IX = VOLTAGE TRANSIENT; STEP 9: ISYS HS = COMMON REFUELING FLOOR.
 STEP 12: EFFECT HX = CONSTANT SPEED AND FLOW.

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

ABSTRACT
 POWER LEVEL - 100%. AS A RESULT OF A LIGHTNING STRIKE ON A 230KV
 TRANSMISSION LINE, THE UNIT 1 START-UP TRANSFORMER T-10 ISOLATED 1 OF
 2 SOURCES OF OFFSITE POWER. THE LOSS OF THE T-10 TRANSFORMER CAUSED A
 TRIP TO THE UNIT 1 AND 2 'A' RPS.  REACTOR BLDG ZONE I, II, AND III
 HVAC SYSTEMS TRIPPED AND STANDBY GAS TREATMENT SYSTEM INITIATED DUE TO
 THE LOSS OF RPS.  THE EFFECT ON FEEDWATER AND REACTOR RECIRCULATION
 CONTROLS CAUSED A REACTOR VESSEL LEVEL INCREASE. MANUAL FEEDWATER
 CONTROL WAS TAKEN TO DECREASE REACTOR VESSEL LEVEL. THE 'A' REACTOR
 FEEDWATER TURBINE TRIPPED 3 SECS AFTER BEING RESET. THE 'C' REACTOR
 FEEDWATER TURBINE FLOW DECREASED DUE TO THE STEAM SUPPLY ISOLATING.
 THE 'B' REACTOR FEEDWATER PUMP DID NOT PROVIDE SUFFICIENT FLOW TO
 MAINTAIN REACTOR VESSEL LEVEL.  THE REACTOR SCRAMMED ON LOW LEVEL.
 REACTOR VESSEL LEVEL DECREASED AND INITIATED THE HPCI AND RCIC
 SYSTEMS, AND CLOSED THE MSIV'S.  REACTOR VESSEL LEVEL INCREASED TO THE
 TRIP POINT FOR HPCI, RCIC, AND REACTOR FEEDWATER TURBINES.  ALL
 SAFETY SYSTEMS WHICH WERE REQUIRED OPERATED SATISFACTORY. THIS EVENT
 IS REPORTABLE PER 10CFR50.73(A)(2)(IV) SINCE AN UNPLANNED ENGINEERED
 SAFETY FEATURE (ESF) ACTUATION OCCURRED AND THE RPS TRIPPED.
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FORM   116               LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  387   1986     028          0     8609050092  200912     08/01/86
********************************************************************

DOCKET:387  SUSQUEHANNA 1            TYPE:BWR
                REGION:  1           NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: PENNSYLVANIA POWER & LIGHT CO.
                SYMBOL: PPL

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

ABSTRACT
 POWER LEVEL - 100%. ON AUGUST 1, 1986 AND AUGUST 6, 1986 LIGHTNING
 STRIKES TO THE MONTOUR MOUNTAIN 230 KV TRANSMISSION LINE CAUSED THE
 UNIT 1 STARTUP BUS TRANSFER (T-10) BREAKER FEEDING STARTUP BUS 10 TO
 OPEN.  ON BOTH OCCASIONS BUS 10 LOADS TRANSFERRED TO BUS 20 AS
 DESIGNED.  VARIOUS TRIPS AND ISOLATIONS WERE INCURRED.  IHE TWO UNITS
 WERE STABILIZED AFTER EACH EVENT AND THE AFFECTED SYSTEMS WERE
 RESTORED AS APPLICABLE.
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*********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  387   1987      015         0     8705280421  204591      04/21/87
*********************************************************************

DOCKET:387  SUSQUEHANNA 1            TYPE:BWR
                REGION:  1           NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: PENNSYLVANIA POWER & LIGHT CO.
                SYMBOL: PPL

COMMENTS
 STEPS 51,52: DI X-10. STEPS 53,54: DI X-11.

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:
    1 387/84-014     2 387/85-020     3 387/86-022     4 387/87-007

ABSTRACT
 POWER LEVEL - 100%. ON 4/21/87 AT 1634 WITH UNIT 1 OPERATING AT 100%
 POWER, AND UNIT 2 IN CONDITION 4 AT 0% POWER, MULTIPLE PLANT
 DISTURBANCES OCCURRED WHEN A LIGHTNING ARRESTOR FAILED AT A
 CONSTRUCTION SUBSTATION. THE FAILURE RESULTED IN A PHASE TO GROUND
 FAULT ON THE 230 KV SUPPLY LINE TO UNIT 2 STARTUP TRANSFORMER T-20.
 POWER INTERRUPTIONS CAUSED BY REALIGNMENT OF THE ELECTRICAL
 DISTRIBUTION SYSTEM WHEN T-20 WAS LOST RESULTED IN NUMEROUS TRIPS OR
 AUTO STARTS OF EQUIPMENT/SYSTEMS IN BOTH UNITS INCLUDING ENGINEERED
 SAFETY FEATURE ACTUATIONS OF REACTOR WATER CLEANUP, STANDBY GAS
 TREATMENT, CONTROL ROOM EMERGENCY OUTSIDE AIR SUPPLY, ZONE III HEATING
 VENTILATION AND AIR CONDITIONING ISOLATION AND ISOLATION OF UNIT 2
 CONTAINMENT ISOLATION SAMPLE VALVES.  THE ELECTRICAL DISTRIBUTION
 SYSTEM WAS RETURNED TO A NORMAL OPERATING LINEUP, PLANT SYSTEMS WERE
 RESTORED AND NO SAFETY CONSEQUENCES OR COMPROMISE TO PUBLIC SAFETY
 OCCURRED.  THE FAILED LIGHTNING ARRESTOR WAS REPLACED.  SINCE A
 PREVIOUSLY FAILED LIGHTNING ARRESTOR HAD TO BE REPLACED A MONTH
 EARLIER AS CORRECTIVE ACTION FOR A SIMILAR EVENT, IT WAS DECIDED TO
 ALSO REPLACE THE THIRD AND FINAL LIGHTNING ARRESTOR AT THE
 CONSTRUCTION SUBSTATION AS A PRECAUTIONARY MEASURE.
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********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  388   1985      015         0     8506050225  194924       04/21/85
********************************************************************

DOCKET:388  SUSQUEHANNA 2            TYPE:BWR
                REGION:  1           NSSS:GE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: PENNSYLVANIA POWER & LIGHT CO.
                SYMBOL: PPL

REPORTABILITY CODES FOR THIS LER ARE:
  10  10 CFR 50.73(a)(2)(i): Shutdowns or technical
      specification violations.

REFERENCE LERS:
    1 387/85-016

ABSTRACT
 POWER LEVEL - 100%. ON 4-21-85, TWO OPEN SLIDING STATES LINK TERMINAL
 BLOCKS WERE FOUND OPEN IN THE AUX CONTROL CIRCUIT FOR THE SPRAY POND
 BYPASS VALVE IN THE 'A' LOOP OF EMERGENCY SERVICE WATER (ESW).  THIS
 CIRCUIT PROVIDES FOR THE AUTOMATIC FUNCTIONING OF THE VALVE ON PUMP
 STARTS AND SHUTDOWNS. INVESTIGATION DETERMINED THAT THE 'A' LOOP OF
 ESW WAS INOPERABLE FROM 4-4-85 UNTIL 4-21-85, WHICH EXCEEDS THE LCO
 ALLOWED BY TECH SPECS.  A WALKDOWN WAS PERFORMED OF SAFETY RELATED
 PANELS IN UNIT 1, 2, AND COMMON TO IDENTIFY AND CORRECT OPEN STATES
 LINKS.  A STATION POLICY IS BEING IMPLEMENTED TO BETTER CONTROL THE
 STATUS OF STATES LINKS POSITION INCLUDING AN ADMINISTRATIVE PROCEDURE.
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FORM   119               LER SCSS DATA                        08-30-91

*********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER  NSIC      EVENT DATE
  389   1990      001         0     9002230298  216923      01/14/90
*********************************************************************

DOCKET:389  ST. LUCIE 2              TYPE:PWR
                REGION:  2           NSSS:CE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: FLORIDA POWER & LIGHT COMPANY
                SYMBOL: FPL

COMMENTS
 STEP 7: CONDENSATE PUMP. STEP 12: MODEL PG-PL.

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR

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

REFERENCE LERS:
    1 335/88-008     2 335/89-003     3 389/86-010

ABSTRACT
 POWER LEVEL - 050%. ON 1/14/90, ST. LUCIE UNIT 2 WAS IN MODE 1 AND
 PERFORMING POWER ASCENSION TOWARDS 100% POWER FOLLOWING A REACTOR
 STARTUP FROM A MAINTENANCE OUTAGE.  TURBINE STARTUP PROCEDURE WAS
 BEING UTILIZED. THE 2B STEAM GENERATOR FEED PUMP AND 2B CONDENSATE
 PUMP WERE IN SERVICE. REACTOR POWER WAS APPROACHING 50% WITH THE
 TURBINE POWER INCREASING AT 4.0 MEGAWATTS PER MINUTE WHEN THE 2B STEAM
 GENERATOR FEED PUMP LOW SUCTION PRESSURE ALARM WAS RECEIVED. UTILITY
 LICENSED OPERATORS ATTEMPTED TO START THE 2A CONDENSATE PUMP BUT IT
 WOULD NOT START.  THE 2B STEAM GENERATOR FEED PUMP TRIPPED ON LOW
 SUCTION PRESSURE.  PUMP WAS UNABLE TO BE RESTARTED.  THE STEAM
 GENERATOR WATER LEVELS DECREASED TO THE AUTOMATIC TRIP SETPOINT AND
 THE UNIT AUTOMATICALLY TRIPPED AT 2325.  THE 2C AFW PUMP TRIPPED ON
 OVERSPEED UPON RECEIVING AN AFW ACTUATION SIGNAL.  STANDARD POST TRIP
 ACTIONS WERE PERFORMED AND THE UNIT WAS STABILIZED IN MODE 3. THE
 SECOND CONDENSATE PUMP COULD NOT BE STARTED PRIOR TO THE TRIP BECAUSE
 ITS CONTROL FUSES HAD NOT BEEN RE-INSTALLED FOLLOWING OUTAGE WORK.
 PROCEDURES HAVE BEEN CHANGED TO ENSURE THE AVAILABILITY OF THE SECOND
 CONDENSATE AND FEEDWATER PUMP FURTHER IN ADVANCE OF BEING NEEDED AND
 TO CLARIFY THE POWER ASCENSION PROCEDURE.  A COGNITIVE PERSONNEL ERROR
 BY UTILITY LICENSED OPERATORS LED TO THE AUTOMATIC REACTOR TRIP.
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FORM 120 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
395	1984	051	0	8501280200	192753	12/19/84

****

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

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

ABSTRACT

POWER LEVEL - 000%. ON 12-19-84, AT 1736 HRS, AN ACTUATION OF THE RPS OCCURRED ON HIGH NEUTRON FLUX. THE PLANT WAS IN MODE 3 WITH CONTROL RODS INSERTED AND THE SHUTDOWN BANKS WITHDRAWN WHEN THE FALSE TRIP SIGNAL WAS RECEIVED. PLANT RESPONSE TO THE TRANSIENT WAS AS EXPECTED. THE CAUSE OF THE FALSE HIGH NEUTRON FLUX SIGNAL WAS THE DEENERGIZATION OF NUCLEAR INSTRUMENTATION SOURCE AND INTERMEDIATE RANGE CHANNELS. .A TRANSFORMER FAILURE IN 120V AC VITAL INVERTER XIT-5902 RESULTED IN THE LOSS OF ITS ASSOCIATED 120V AC INSTRUMENT BUS WHICH POWERED THE NI CHANNELS. THE 120V AC INSTRUMENT BUS WAS RESTORED AT 1750 HRS FROM BACKUP INVERTER XIT-5907. THE LICENSEE IS PRESENTLY REPAIRING XIT-5902 AND INVESTIGATING THE CAUSE OF THE TRANSFORMER FAILURE.

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FORM   121                 LER SCSS DATA                        08-30-91

*********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  395   1987     027         0      8712040171  207342      10/29/87
*********************************************************************

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

WATCH-LIST CODES FOR THIS LER ARE:
  20  EQUIPMENT FAILURE
  34  DESIGN ERROR OR INADEQUACY
 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%. ON OCTOBER 29, 1987, AT 0313 HOURS WITH THE PLANT
 AT 100% POWER, BOTH THE PRIMARY AND BACKUP POWER SUPPLIES TO ONE OF
 THE WESTINGHOUSE 7300 SYSTEM PROCESS RACK PANELS FAILED.  THIS
 RESULTED IN A LOSS OF VARIOUS INSTRUMENTATION AND CONTROL FUNCTIONS
 INCLUDING FEEDWATER CONTROLS, PRESSURIZER PRESSURE AND LEVEL CONTROLS,
 AND STEAM DUMP CONTROLS. MANUAL CONTROL OF THE FEEDWATER SYSTEM WAS
 ATTEMPTED, BUT DUE TO THE NATURE OF THE CONTROL FAILURES, RECOVERY WAS
 NOT POSSIBLE.  THE PLANT TRIPPED ON LOW STEAM GENERATOR "C" LEVEL
 COINCIDENT WITH STEAM FLOW/FEED FLOW MISMATCH.  A PRESSURIZER POWER
 OPERATED RELIEF VALVE LIFTED, THE STEAMLINE POWER OPERATED RELIEF
 VALVES LIFTED, AND THE MOTOR DRIVEN AND TURBINE DRIVEN EMERGENCY
 FEEDWATER PUMPS STARTED.  WITHIN APPROXIMATELY 13 MINUTES I&C
 PERSONNEL HAD RESTORED POWER TO THE PANEL AND CONTROL SYSTEMS RETURNED
 TO NORMAL.  THE PLANT, UTILIZING THE REESTABLISHED CONTROL FUNCTIONS,
 RECOVERED NORMALLY FROM THE TRIP.  THE CAUSE OF THE EVENT WAS
 ATTRIBUTED TO A FAILED CAPACITOR ON A STEAM DUMP CONTROL SIGNAL
 CONVERTER CARD IN ONE OF THE PROCESS RACK PANELS.  THIS CAPACITOR
 SHORTED TO GROUND CAUSING THE BREAKERS TO BOTH THE PRIMARY AND BACKUP
 POWER SUPPLIES FOR THE PROCESS RACK PANEL TO TRIP.
 FICIENCIES RESULTING FROM DESIGN
 CHANGES.
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FORM   122                LER SCSS DATA                          08-30-91

*********************************************************************
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.
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FORM   123                LER SCSS DATA                        08-30-91

*******************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  397   1984     079          1     8412270018  196934     08/09/84
*******************************************************************

DOCKET:397  WPPSS 2                    TYPE:BWR
                REGION:  5             NSSS:GE
ARCHITECTURAL ENGINEER: BNRO
     FACILITY OPERATOR: WASHINGTON PUBLIC POWER SUPPLY SYSTEM
                SYMBOL: WPP

COMMENTS
 OTHER REPORTABILITY: 50.72 (B)(2)(II).

WATCH-LIST CODES FOR THIS LER ARE:
 941  REPORT ASSOCIATED WITH 10 CFR 50.72

REPORTABILITY CODES FOR THIS LER ARE:
  13  10 CFR 50.73(a)(2)(iv): ESF actuations.
  21  OTHER: Voluntary report, special report, Part 21 report,
      etc.

ABSTRACT
 POWER LEVEL - 015%. A REACTOR SCRAM OCCURRED AUTOMATICALLY ON LOW
 REACTOR WATER LEVEL AFTER THE REACTOR FEED WATER (RFW) PUMP TRIPPED
 DUE TO LOSS OF CONTROL POWER. WHILE PREPARING TO ROLL THE TURBINE IN A
 NORMAL RAMP UP MODE THE CONTROL ROOM OPERATOR STARTED THE THIRD LARGE
 CIRCULATING WATER PUMP.  AT THIS TIME, THE PLANT WAS BEING SUPPLIED
 BY THE STARTUP TRANSFORMER (TR-S) WHICH WAS HEAVILY LOADED.  THE LARGE
 STARTING CURRENT FOR THIS MOTOR (APPROX 3300 AMPS) COINCIDENT WITH
 THE HEAVILY LOADED CONDITION OF THE STARTUP TRANSFORMER, RESULTED IN A
 VOLTAGE DROP ON THE SECONDARY OF THE TRANSFORMER.  THIS VOLTAGE
 DROPPED BELOW THE SETPOINT FOR THE SECOND LEVEL (DEGRADED)
 UNDERVOLTAGE PROTECTION.  THE VOLTAGE HAD NOT EXCEEDED THE RESET
 SETPOINT WITHIN THE EIGHT SECOND PROTECTION.  THE VOLTAGE HAD NOT
 EXCEEDED THE RESET SETPOINT WITHIN THE EIGHT SECOND TIME DELAY AND THE
 SECOND LEVEL UNDERVOLTAGE CIRCUITRY INITIATED LOAD SHEDDING AS
 DESIGNED ON DIV. I AND DIV. III.  THE TEMPORARY LOSS OF POWER TO THE
 CONTROL CIRCUITRY RESULTED IN TRIPPING OF THE RFW PUMP.  THE LOSS OF
 FEEDWATER TO THE REACTOR RESULTED IN A DROP OF REACTOR WATER LEVEL TO
 LEVEL THREE (+12") AND THE REACTOR SCRAMMED AS DESIGNED. REACTOR WATER
 LEVEL WAS RESTORED USING THE RCIC SYSTEM.  THE PLANT ELECTRICAL
 LINEUP WAS RESTORED TO A NORMAL CONFIGURATION.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  397   1989     002          0     8903130165  213225      01/30/89
**********************************************************************

DOCKET:397  WPPSS 2                     TYPE:BWR
                REGION:  5              NSSS:GE
ARCHITECTURAL ENGINEER: BNRO
     FACILITY OPERATOR: WASHINGTON PUBLIC POWER SUPPLY SYSTEM
                SYMBOL: WPP

COMMENTS
 STEPS 24-27: COMP LX - CONTAINMENT ISOLATION AND ADS ACTIVATION.

WATCH-LIST CODES FOR THIS LER ARE:
  34  DESIGN ERROR OR INADEQUACY
  40  PROCEDURAL DEFICIENCY

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

REFERENCE LERS:
    1.397/85-002     2 397/85-003     3 397/87-018

ABSTRACT
 POWER LEVEL - 100%. ON 1/30/89, AT 0514 HRS, A REACTOR SCRAM OCCURRED
 DUE TO TURBINE CONTROL VALVE FAST CLOSURE ACTUATION OF THE REACTOR
 PROTECTIVE SYSTEM LOGIC.  THIS LOGIC WAS ACTUATED WHEN THE MAIN
 GENERATOR 500KV OUTPUT BREAKERS TRIPPED AS A RESULT OF HIGH CURRENTS
 CREATED WHEN A PORCELAIN INSULATOR ON THE OUTPUT SIDE OF 25/500KV MAIN
 TRANSFORMER TR-M1 SHORTED TO GROUND.  PLANT OPERATORS RESPONDED TO
 MANEUVER THE PLANT TO A SAFE SHUTDOWN CONDITION. THE DAMAGED 500KV
 INSULATOR STACK WAS REPLACED. ALL OTHER 500KV AND 115KV INSULATORS IN
 THE TRANSFORMER YARD WERE CLEANED AND INSPECTED. TRANSFORMER TR-M1 WAS
 TESTED TO DETERMINE ITS ACCEPTABILITY FOR CONTINUED USE.  THE
 IMMEDIATE CAUSE OF THE INSULATOR FAILURE WAS THE BUILD UP OF A
 CHEMICAL RESIDUE DEPOSITED BY THE VAPOR PLUME FROM THE CIRCULATING
 WATER SYSTEM COOLING TOWERS.  THIS RESIDUE WAS FOUND TO BE CONDUCTIVE
 WHEN WET.  THE RESIDUE CONSISTED OF RIVER WATER MINERALS AND SULFATE
 COMPOUNDS GENERATED BY SULFURIC ACID ADDITION USED TO CONTROL THE PH
 OF CIRCULATING WATER.  TWO ROOT CAUSES WERE IDENTIFIED:  1) EQUIPMENT
 DESIGN DEFICIENCY (PROBLEM NOT ANTICIPATED). THE INSULATORS USED AT
 WNP-2 ARE NOT OF THE TYPE OR NUMBER RECOMMENDED FOR CONTAINMENTED
 ENVIRONMENTS.  2) EQUIPMENT MAINTENANCE DEFICIENCY. NO FORMAL
 MAINTENANCE/INSPECTION PROGRAM EXISTED WHICH IDENTIFIED THIS
 EQUIPMENT.
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*********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  397   1989     023          0     8907100048  214570      05/31/89
*********************************************************************

DOCKET:397  WPPSS 2                   TYPE:BWR
                REGION:  5            NSSS:GE
ARCHITECTURAL ENGINEER: BNRO
     FACILITY OPERATOR: WASHINGTON PUBLIC POWER SUPPLY SYSTEM
                SYMBOL: WPP

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR
  40  PROCEDURAL DEFICIENCY

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

POWER LEVEL - 000%. ON 5/31/89 AT 1406 HRS AN ELECTRICAL PROTECTION ASSEMBLY (EPA) BREAKER TRIPPED CAUSING A LOSS OF POWER TO REACTOR PROTECTION SYSTEM (RPS) BUS B. LOSS OF POWER TO RPS BUS B CAUSED A HALF-SCRAM IN RPS DIVISION B AND MULTIPLE PRIMARY AND SECONDARY CONTAINMENT ISOLATIONS AND ESF ACTUATIONS OF VENTILATION SYSTEMS. PLANT WAS SHUTDOWN FOR ANNUAL MAINTENANCE AND REFUELING OUTAGE. LOSS OF RPS B POWER CAUSES NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM CONTAINMENT INBOARD AND OUTBOARD ISOLATIONS FOR GROUPS 1,2,5,6 AND 7; AND A REACTOR BLDG EXHAUST PLENUM RADIATION MONITOR "Z" SIGNAL WHICH INITIATES SEVERAL ESF ACTUATIONS INCLUDING STANDBY GAS TREATMENT (SGT) SYSTEM, THE CONTROL ROOM EMERGENCY FILTRATION SYSTEM, AND A REACTOR BLDG VENTILATION SYSTEM ISOLATION. PLANT OPERATORS RESPONDED BY RESTORING ALL SYSTEMS, INCLUDING RESIDUAL HEAT REMOVAL (RHR) SHUTDOWN COOLING, TO PRE-EVENT LINEUP STATUS BY 1430 HRS. THE CAUSES OF THIS EVENT ARE PERSONNEL ERROR IN THAT A PLANT TEST ENGINEER AND PLANT OPERATORS DID NOT ADEQUATELY REVIEW THE CONSEQUENCES OF STARTING A REACTOR RECIRCULATION PUMP WHILE THE PLANT WAS ALIGNED FOR THE PERFORMANCE OF LOGIC SYSTEM FUNCTIONAL TESTING (LSFT) OF THE ATWS RECIRCULATION PUMP "A" TRIP SYSTEM, AND 2) INADEQUATE PROCEDURE IN THAT THE LSFT PROCEDURE DID NOT SPECIFICALLY CAUTION AGAINST STARTING AN RRC PUMP DURING TEST PERFORMANCE.

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FORM   126               LER SCSS DATA                       08-30-91

*********************************************************************
DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  400   1987      054         0     8710200569  206693      09/15/87
*********************************************************************

DOCKET:400  SHEARON HARRIS 1          TYPE:PWR
                REGION:  2            NSSS:WE
ARCHITECTURAL ENGINEER: EBAS
     FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
                SYMBOL: CPL

COMMENTS
 WATCH 931 - 10CFR21 REPORT SUBMITTED FOR THIS EVENT. STEP 1: COMP PX -
 DESIGN RESPONSIBILITIES WERE COMBINED AMONG UTILITY, AE, AND REACTOR
 VENDOR. STEP 5: COMP EC - FIELD FLASHING CIRCUIT. STEP 10: COMP 52 - BUS
 TIE BREAKERS IN THE EMERGENCY AC SYSTEM.

WATCH-LIST CODES FOR THIS LER ARE:
 931  REPORTS ASSOCIATED WITH PART 21
  34  DESIGN ERROR OR INADEQUACY
 241  FAILURES THAT COULD EASILY ESCAPE DETECTION

REPORTABILITY CODES FOR THIS LER ARE:
  11  10 CFR 50.73(a)(2)(ii): Unanalyzed conditions.

ABSTRACT
 POWER LEVEL - 100%. ON SEPTEMBER 15, 1987, AT 2000, WITH THE PLANT IN
 MODE 1 AT 100% POWER, IT WAS DETERMINE THAT A MORE LIMITING SINGLE
 FAILURE THAN HAD BEEN PREVIOUSLY ANALYZED MIGHT EXIST, AND THAT IF
 VALID, CONTINUED OPERATION OF THE PLANT WAS NOT JUSTIFIED.  A PLANT
 SHUTDOWN COMMENCED AT 2015, AND THE UNIT WAS OFF-LINE AT 0040 ON
 SEPTEMBER 16, 1987.  THE UNANALYZED FAILURE INVOLVED A LOSS OF "B"
 VITAL DC BUS CAUSING A FAILURE OF THE TURBINE-DRIVEN AUXILIARY
 FEEDWATER (AFW) PUMP AND THE "B" MOTOR-DRIVEN AFW PUMP.  THE FINAL
 SAFETY ANALYSIS REPORT (FSAR) ACCIDENT ANALYSIS FOR MAIN FEEDWATER
 LINE BREAK ASSUMES THE AVAILABILITY OF BOTH MOTOR-DRIVEN PUMPS "A" AND
 "B".  THE PLANT WAS COOLED DOWN TO MODE 4 AT 0440 ON SEPTEMBER 16,
 1987, WHERE AUXILIARY FEEDWATER IS NOT REQUIRED TO BE OPERABLE BY
 TECHNICAL SPECIFICATIONS. ON SEPTEMBER 16, 1987, TWO ADDITIONAL
 POTENTIAL FAILURE MODES WERE IDENTIFIED; ONE INVOLVED THE SPURIOUS
 FAILURE OF A RELAY IN THE SOLID STATE PROTECTION SYSTEM (SSPS) CAUSING
 INADVERTENT ISOLATION OF AFW TO ONE STEAM GENERATOR.  THE SECOND WAS
 THAT FAILURE OF "B" VITAL DC BUS COINCIDENT WITH A LOSS OF OFF- SITE
 POWER WOULD ISOLATE AFW TO ALL THREE STEAM GENERATORS.  REANALYSIS OF
 ACCIDENTS WITH A REDUCED AFW CAPABILITY WAS DONE.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  409   1985     016          0     8510150329  196363      09/14/85
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DOCKET:409  LACROSSE                   TYPE:BWR
                 REGION:  3            NSSS:AC
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: DAIRYLAND POWER COOPERATIVE
                 SYMBOL: DLP

COMMENTS
 PREVIOUS SIMILAR EVENT IN 1979; STEP 2: COMPONENT MSC - SWITCH COVER.

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

ABSTRACT
 POWER LEVEL - 096%. DURING MAINTENANCE ON A RECORDER, THE TECHNICIAN
 CAUSED A SHORT WHICH BLEW FUSE 32-1, WHICH SUPPLIED SOME CONTROL ROOM
 INSTRUMENTATION FROM THE 1B NONINTERRUPTIBLE BUS.  ONE OF THE SIGNALS
 DE-ENERGIZED WAS FEEDWATER FLOW.  THIS CAUSED THE REACTOR WATER LEVEL
 CONTROL SYSTEM TO INCREASE THE REACTOR FEED PUMP SPEED TO INCREASE
 FEEDWATER FLOW.  THE REACTOR SCRAMMED ON HIGH WATER LEVEL.  WATER
 LEVEL STABLIZED AT 20 INCHES ABOVE NORMAL.  THE REACTOR FEED PUMP WAS
 SECURED, FUSE 32-1 WAS REPLACED.  AS A LONG TERM PROJECT, SEPARATION
 OF SOME OF THE INSTRUMENTATION CURRENTLY SUPPLIED THROUGH FUSE 32-1
 WILL BE CONSIDERED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  409   1986      002         0     8602140240  197906      01/10/86
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DOCKET:409  LACROSSE                  TYPE:BWR
                REGION:  3            NSSS:AC
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: DAIRYLAND POWER COOPERATIVE
                SYMBOL: DLP

COMMENTS
 STEP 2: OPERATOR FAILED TO RECLOSE THE MAIN FEED TIE BREAKER BEFORE OPENING
 THE RESERVE FEED BREAKER; STEP 6: CAUSE AX - TROUBLESHOOTING OF THE
 CONTROL ROOM ANNUNCIATOR SYSTEM WAS CAUSING A CONTINUOUS AUDIBLE ALARM.

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

ABSTRACT
 POWER LEVEL - 000%. THE 120V NONINTERRUPTIBLE BUS 1B WAS MOMENTARILY
 DE-ENERGIZED WHEN IT WAS BEING RETURNED TO ITS NORMAL POWER SUPPLY DUE
 TO AN INCORRECT BREAKER ALIGNMENT.  THE PLANT WAS IN COLD SHUTDOWN AT
 THE TIME.  DUE TO THE MOMENTARY LOSS OF POWER TO THE BUS, BOTH
 EMERGENCY DG'S, BOTH HIGH PRESSURE CORE SPRAY PUMPS AND THE 1A HIGH
 PRESSURE SERVICE WATER/ALTERNATE CORE SPRAY PUMP STARTED AND
 CONTAINMENT BLDG ISOLATED. THE 1B HPSW/ACS PUMP WAS ALREADY RUNNING
 DUE TO OTHER WORK IN PROGRESS. THE EQUIPMENT THAT STARTED WAS SECURED.
 THE IMPORTANCE OF PROPER PERFORMANCE OF DUTIES WILL BE EMPHASIZED IN
 UPCOMING OPERATIONS DEPARTMENT TRAINING AND A PROCEDURE WILL BE
 REVISED.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  423   1987      027          0     8707090095  205195      06/05/87
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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 SIGNALED 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.
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FORM   130                 LER SCSS DATA                        08-30-91.

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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.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  440   1988      023         0     8807120238  209845       06/08/88
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DOCKET:440   PERRY 1                  TYPE:BWR
                REGION:  3            NSSS:GE
ARCHITECTURAL ENGINEER: GLBT
     FACILITY OPERATOR: CLEVELAND ELECTRIC ILLUMINATING CO.
                SYMBOL: CEI

COMMENTS
 STEPS 16 - 18: COMP LX - ISOLATION/ RECIRC SYSTEM TRIP. $L/CT/9.

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR

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

REFERENCE LERS:
    1 440/87-072

ABSTRACT
 POWER LEVEL - 023%. ON JUNE 8, 1988 AT 0923, A REACTOR SCRAM AND
 NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM BALANCE OF PLANT (BOP) CONTAINMENT
 ISOLATION OCCURRED DUE TO LOSS OF POWER TO BOTH REACTOR PROTECTION
 SYSTEM (RPS) POWER DISTRIBUTION BUSSES.  AT 0922 THE MAIN TURBINE
 TRIPPED DUE TO HIGH LEVEL IN A MOISTURE SEPARATOR REHEATER DRAIN TANK.
 DURING RECOVERY FROM THE MAIN TURBINE TRIP, AN OPERATOR
 INADVERTENTLY TRIPPED THE TWO MAINLINE BREAKERS FEEDING THE BOP
 ELECTRICAL DISTRIBUTION BUSSES.  CONSEQUENTLY, BOTH RPS BUSSES WERE
 DEENERGIZED, RESULTING IN A REACTOR SCRAM, A FULL CONTAINMENT
 ISOLATION, BOTH REACTOR RECIRCULATION PUMPS TRIPPING AND LOSS OF
 FEEDWATER.  THE CONTROL ROOM OPERATORS VERIFIED ALL AUTOMATIC
 ACTUATIONS OCCURRED.  THE REACTOR CORE ISOLATION COOLING SYSTEM WAS
 STARTED AT 0926 AND UTILIZED TO CONTROL REACTOR VESSEL LEVEL AND
 PRESSURE.  THE CAUSE OF THE EVENT WAS PERSONNEL ERROR.  THE
 SUPERVISING OPERATOR TURNED THE CONTROL SWITCHES IN THE WRONG
 DIRECTION WHEN ATTEMPTING TO RESET THE BREAKER POSITION INDICATION
 FLAGS RESULTING IN THE BOP SUPPLY BREAKERS OPENING.  THE OPERATOR HAS
 BEEN COUNSELED BY PLANT MANAGEMENT AND DISCIPLINARY ACTION HAS BEEN
 TAKEN.  IN ACCORDANCE WITH THE LICENSED OPERATOR REQUALIFICATION
 TRAINING PROGRAM, OPERATORS WILL RECEIVE TRAINING ON THE SEQUENCE OF
 EVENTS WHICH LED TO THIS REPORT.
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FORM   132                LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  445   1990     023          0     9009100049  220895      08/08/90
*******************************************************************

DOCKET:445  COMANCHE 1               TYPE:PWR
                REGION:  4           NSSS:WE
ARCHITECTURAL ENGINEER: GIBB
     FACILITY OPERATOR: TEXAS UTILITIES GENERATING CO.
                SYMBOL: TUG

COMMENTS
 STEP 2: BUCHANAN CONSTRUCTION MODEL NO. 361.

WATCH-LIST CODES FOR THIS LER ARE:
  20  EQUIPMENT FAILURE
 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 - 017%. ON 8/8/90, COMANCHE PEAK STEAM ELECTRIC STATION
 UNIT 1 WAS IN MODE 1, POWER OPERATIONS, WITH REACTOR POWER AT 17%.  A
 LOOSE FUSE IN THE MAIN FEEDWATER CONTROL POWER CIRCUIT CAUSED CLOSURE
 OF A VALVE IN THE FEEDWATER FLOW PATH TO STEAM GENERATOR NUMBER 4.
 WATER LEVEL IN STEAM GENERATOR NUMBER 4 DECREASED TO THE LO-LO LEVEL
 SETPOINT, INITIATING A REACTOR TRIP SIGNAL.  CORRECTIVE ACTIONS
 INCLUDED INSPECTION OF SIMILAR COMPONENTS IN OTHER APPLICATIONS,
 MAINTENANCE ON THE MALFUNCTIONING COMPONENT, AND PERSONNEL TRAINING.
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DOCKET  YEAR  LER NUMBER. REVISION  DCS NUMBER   NSIC     EVENT DATE
  445   1990      028         0     9010220016  219779      09/08/90
*******************************************************************

DOCKET:445  COMANCHE 1                TYPE:PWR
                REGION:  4            NSSS:WE
ARCHITECTURAL ENGINEER: GIBB
     FACILITY OPERATOR: TEXAS UTILITIES GENERATING CO.
                SYMBOL: TUG

WATCH-LIST CODES FOR THIS LER ARE:
  11  ACTS OF NATURE
 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 - 038%. AT 1428 ON SEPTEMBER 8, 1990, COMANCHE PEAK STEAM
 ELECTRIC STATION UNIT 1 WAS AUTOMATICALLY TRIPPED FROM 38 PERCENT
 POWER.  A LIGHTNING STRIKE IS BELIEVED TO HAVE CAUSED A SURGE IN THE
 INPUT POWER RESULTING IN THE DE-ENERGIZATION OF POWER SUPPLIES IN THE
 ROD DRIVE SYSTEM, CAUSING THE RODS CONTROLLED BY ONE ROD CONTROL
 CABINET TO DROP INTO THE CORE.  THIS RESULTED IN THE REACTOR TRIP FORM
 HIGH NEGATIVE FLUX RATE. NO SPECIFIC COMPONENT OR SYSTEM FAILURES
 WERE IDENTIFIED AS THE CAUSE OF THIS EVENT.  THE INSTALLATION OF SURGE
 SUPPRESSORS IN THE INPUT SUPPLY TO ROD DRIVE POWER SUPPLIES WILL
 PROVIDE ADDITIONAL ASSURANCE THAT POWER SUPPLIES REMAIN AVAILABLE
 DURING LIGHTNING STRIKES.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  454   1984     030          0     8501210416  192758       12/18/84
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DOCKET:454   BYRON 1                    TYPE:PWR
                REGION:  3              NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

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

ABSTRACT
 POWER LEVEL - 000%. WITH THE PLANT OPERATING IN MODE 5, AC INSTRUMENT
 BUS 111 DE-ENERGIZED AND THE BORON DILUTION PROTECTION SYSTEM (BDPS)
 WAS ACTUATED DUE TO THE RESULTING DE-ENERGIZATION OF NUCLEAR
 INSTRUMENTATION CHANNEL I.  THIS SWITCHED THE SUCTION FOR THE
 CENTRIFUGAL CHARGING PUMP FROM ITS NORMAL LETDOWN SOURCE (VOLUME
 CONTROL TANK) TO ITS BORATED WATER SOURCE (REFUELING WATER STORAGE
 TANK).  THE TRAIN A ESF SEQUENCING CABINET, SOLID STATE PROTECTION
 SYSTEM (SSPS) TRAIN A OUTPUT, AND SSPS TRAIN A AND B INPUT CABINETS
 WERE ALSO DE-ENERGIZED BY THE LOSS OF THE AC INSTRUMENT BUS 111 AND
 THIS PREVENTED TRAIN A OF THE BDPS FROM ACTUATING.  THE OPERATOR RESET
 THE BDPS AND RE-ENERGIZED BUS 111 FROM A STANDBY POWER SOURCE.  THE
 AC BUS FAILURE WAS TRACED BACK TO A DEGRADED CAPACITOR IN THE BUS
 INVERTER, WHICH CAUSED THE INVERTER OUTPUT FUSE TO BLOW.  THE
 CAPACITOR FAILURE IS ATTRIBUTED TO AGE DEGRADATION.  TO PREVENT
 RECURRENCE OF THIS EVENT, NEW CAPACITORS ARE BEING INSTALLED AND
 MAINTENANCE PROCEDURES HAVE BEEN IMPLEMENTED TO MAINTAIN CAPACITORS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
 454    1985     046         0      8505200128  194852      04/21/85
*********************************************************************

DOCKET:454  BYRON 1                    TYPE:PWR
               REGION:  3              NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 STEP 1: COMP RLX - AUXILIARY RELAY; MODEL AR 880AR. STEP 7: EFFECT IX -
 VOLTAGE FLUCTUATIONS.

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

REFERENCE LERS:
    1 454/85-036

ABSTRACT
 POWER LEVEL - 049%. WITH THE PLANT OPERATING IN MODE 1, A REACTOR TRIP
 OCCURRED DUE TO STEAM GENERATOR LO-2 LEVEL.  THE STEAM GENERATOR
 LEVEL DROP WAS CAUSED BY AN AUXILIARY RELAY STICKING IN THE ENERGIZED
 POSITION DURING A FEEDWATER ISOLATION VALVE SLAVE RELAY SURVEILLANCE
 AND PRODUCING AN ACTUAL ISOLATION OF THE FEEDWATER CONTROL VALVES.
 THE REACTOR TRIP PRODUCED A VOLTAGE FLUCTUATION ON THE ESF BUS
 SUPPLYING A CONTROL ROOM VENTILATION INTAKE RADIATION MONITOR.  THIS
 CAUSED THE RADIATION MONITOR TO ENTER AN INTERLOCK CONDITION WHICH IN
 TURN PLACED THE CONTROL ROOM VENTILATION SYSTEM IN THE MAKE-UP MODE.
 THE POWER FAILURE SETPOINTS ON THE RADIATION MONITORS ARE BEING
 LOWERED TO MAKE THE MONITORS LESS SENSITIVE TO VOLTAGE SWINGS (SEE
 ALSO LER 85-036-00).  THE FAULTY RELAY WAS SUBSEQUENTLY REPLACED AND
 THE SYSTEM RETESTED SUCCESSFULLY.
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FORM  136                LER SCSS DATA                          08-30-91

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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
 CORRETIVE 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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FORM   137                LER SCSS DATA                        08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  456   1988      023         0     8811210116  211414      10/17/88
*********************************************************************

DOCKET:456  BRAIDWOOD 1                TYPE:PWR
                REGION:  3             NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
     FACILITY OPERATOR: COMMONWEALTH EDISON CO.
                SYMBOL: CWE

COMMENTS
 STEP 5: MODEL 764. STEP 6: MODEL 752. STEP 7: MODEL 763. STEP 22: COMP MEI
 - GROUNDING EQUIPMENT.

WATCH-LIST CODES FOR THIS LER ARE:
  20  EQUIPMENT FAILURE
  34  DESIGN ERROR OR INADEQUACY
  11  ACTS OF NATURE

REPORTABILITY CODES FOR THIS LER ARE:
  13  10 CFR 50.73(a)(2)(iv): ESF actuations.
  15  10 CFR 50.73(a)(2)(vii): Single failure criteria.

ABSTRACT
 POWER LEVEL - 000%. A SEVERE LIGHTNING STORM OCCURED AT THE PLANT
 SITE.  UNIT 1 WAS SHUTDOWN.  AT 1542 ON OCTOBER 17, 1988 VARIOUS UNIT
 1 INDICATIONS REVEALED ERRATIC BEHAVIOR AND THE OVER PRESSURE DELTA
 TEMPERATURE (OP DELTA T) AND OVER TEMPERTURE DELTA TEMPERATURE (OT
 DELTA T) COINCIDENCE WAS MET FOR A REACTOR TRIP.  ON UNIT 2 A REACTOR
 TRIP AND A LOCK UP OF THE COMPUTER MEMORY FOR THE REACTOR VESSEL LEVEL
 INDICATING SYSTEM (RVLIS) OCCURRED.  THE ROOT CAUSE IS A VOLTAGE
 TRANSIENT INTO THE STATION GROUND SYSTEM FROM LIGHTNING STRIKES WHICH
 ACTUATED THE OVERVOLTAGE PROTECTION FOR THE RD POWER SUPPLIES, FOR
 BOTH UNITS, SUBSEQUENTLY RESULTING IN THE UNIT 2 REACTOR TRIP.  RVLIS
 FAILED FROM AN OVERVOLTAGE CONDITION.  ON UNIT 1, THE INSTRUMENT LOOP
 TRANSMITTERS WERE REPLACED AND ALL POWER SUPPLIES WERE RESET.  THERE
 WERE NO EQUIPMENT FAILURES WITH THE OP DELTA T AND OT DELTA T
 INSTRUMENT CHANNELS. INVESTIGATION REVEALED THE STATION GROUNDING
 SCHEME IS ADEQUATE; HOWEVER, THE VENT STACK GROUNDING IS INCOMPLETE.
 THIS DID NOT CONTRIBUTE TO THE UNIT 2 TRIP.  ADDITIONAL GROUNDING AND
 ADDITIONAL PROTECTIVE MEASURES FOR THE RD SYSTEM ARE BEING
 INVESTIGATED.  THERE WERE NO PREVIOUS OCCURRENCES.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  458   1987      012         1     8802190192  208258      06/18/87
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DOCKET:458  RIVERBEND 1              TYPE:BWR
                 REGION:  4          NSSS:GE
ARCHITECTURAL ENGINEER: SWXX
     FACILITY OPERATOR: GULF STATES UTILITIES
                SYMBOL: GSU

COMMENTS
 STEP 1: PART #633-270-40, ASSEMBLY J901.

WATCH-LIST CODES FOR THIS LER ARE:
  35  HUMAN ERROR
  40  PROCEDURAL DEFICIENCY

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

ABSTRACT
 POWER LEVEL - 070%. ON 6/18/87 AT 0322, WITH THE UNIT AT APPROXIMATELY
 70 PERCENT POWER, A REACTOR TRIP OCCURRED.  INITIATION OF THE REACTOR
 PROTECTION SIGNAL WAS CAUSED BY A REACTOR VESSEL WATER LEVEL - HIGH
 LEVEL 8 (51 INCHES) CONDITION.  A LOSS OF CONTROL POWER TO PANEL
 1VBN-PNL01B1 OCCURRED INADVERTENTLY DURING THE TROUBLE SHOOTING OF
 BATTERY INVERTER 1BYS-INV01BB *INVT*.  LOSS OF CONTROL POWER TO THE
 FEEDWATER REGULATING VALVES CAUSED THEM TO LOCKUP IN A POSITION
 CONSISTENT WITH 70 PERCENT REACTOR POWER.  ALSO, AS A RESULT OF THE
 LOSS OF THE INVERTER, THE RECIRCULATION SYSTEM FLOW CONTROL VALVES RAN
 BACK.  SIMULTANEOUSLY, THE RECIRCULATION PUMPS RECEIVED A SIGNAL TO
 TRANSFER TO THE LOW FREQUENCY MOTOR GENERATORS.  THIS CAUSED
 SUFFICIENT FEEDWATER FLOW/STEAM FLOW MISMATCH TO INCREASE THE VESSEL
 LEVEL TO HIGH LEVEL 8. OPERATIONS PERSONNEL RESPONDED BY
 SATISFACTORILY IMPLEMENTING THE IMMEDIATE AND SUBSEQUENT ACTIONS
 REQUIRED BY "REACTOR SCRAM" PROCEDURES.  PROCEDURAL REVISIONS HAVE
 BEEN COMPLETED THAT WILL PRECLUDE RECURRENCE BY REQUIRING THE
 PLACEMENT OF THE BATTERY INVERTER IN MANUAL BYPASS MODE PRIOR TO
 TROUBLE SHOOTING.  THERE WAS NO ADVERSE IMPACT ON THE SAFE OPERATION
 OF THE PLANT OR TO THE HEALTH AND SAFETY OF THE PUBLIC AS A RESULT OF
 THIS EVENT.  THE PLANT'S RESPONSE WAS IN A CONSERVATIVE DIRECTION WITH
 NO IMPACT ON SAFETY SYSTEMS.  PLANT STAFF'S RESPONSE WAS IN
 ACCORDANCE WITH APPROVED PROCEDURES.
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FORM   139              LER SCSS DATA                      08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  482   1985      054         0     8509030089  195477      07/23/85
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DOCKET:482  WOLF CREEK 1               TYPE:PWR
                REGION:  4             NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: WOLF CREEK NUCLEAR OPER. CORP.
                SYMBOL: WCN

COMMENTS
 STEP 2: EFFECT AX - IMPROPER CRIMP ON TERMINAL LUG; STEP 4: MODEL
 RT-481260N; STEP 18: MODEL 90-207X1; STEP 17: MODEL SMB00-5.

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

REFERENCE LERS:
    1 482/85-058

ABSTRACT
 POWER LEVEL - 075%. ON 7-23-85, AT 0808 CDT, A REACTOR TRIP, MAIN
 TURBINE TRIP, AUX FEEDWATER ACTUATION, FEEDWATER ISOLATION AND SG
 BLOWDOWN AND SAMPLE ISOLATION OCCURRED AS A RESULT OF A LOW-LOW WATER
 LEVEL CONDITION IN ALL 4 SG'S.  PLANT RESPONSE THROUGHOUT THE EVENT
 WAS NORMAL AND ALL REQUIRED RPS AND ESF'S EQUIPMENT RESPONDED
 PROPERLY.  THE CAUSE OF THIS EVENT WAS FAILURE OF A WIRE SUPPLYING
 POWER TO A 120V INSTRUMENT AC DISTRIBUTION PANEL.  THIS RESULTED IN A
 LOSS OF GOVERNOR CONTROL POWER TO MAIN FEEDWATER PUMP 'B', ALLOWING
 THE PUMP TO SLOW DOWN AND DECREASE FEEDWATER FLOW TO THE SG'S.  THE
 WIRE FAILURE HAS BEEN ATTRIBUTED TO A FAULTY CRIMPED CONNECTION.  THIS
 CONNECTION HAS BEEN REPAIRED AND AN INSPECTION FOR OTHER FAULTY
 CONNECTIONS DID NOT REVEAL ANY ADDITIONAL PROBLEMS.
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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  483   1984      047         0     8411140211  192075      10/06/84
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DOCKET:483  CALLAWAY 1                TYPE:PWR
                REGION:  3            NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: UNION ELECTRIC CO.
                SYMBOL: UEC

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

ABSTRACT
 POWER LEVEL - 000%. ON 10/6/84 A TECHNICIAN WAS PERFORMING MAINTENANCE
 ON THE SOURCE RANGE NUCLEAR INSTRUMENTATION POWER SUPPLY CABLES.  FOR
 SAFETY REASONS, THE TECHNICIAN REMOVED BOTH THE INSTRUMENT POWER AND
 CONTROL POWER FUSES TO THE SOURCE RANGE HIGH VOLTAGE POWER SUPPLY,
 UNAWARE THAT THE REACTOR TRIP BREAKERS WERE CLOSED.  AS DESIGNED,
 REMOVAL OF THE CONTROL POWER FUSES INITIATED A SOURCE RANGE HI FLUX
 SIGNAL WHICH IN TURN CAUSED A REACTOR TRIP AND FEEDWATER ISOLATION.
 ALL EQUIPMENT AND PERSONNEL PERFORMED AS EXPECTED.  THE PLANT WAS
 RESTORED FROM THE TRIP USING PLANT OPERATING PROCEDURES.  THE CAUSE OF
 THIS EVENT WAS DETERMINED TO BE MISCOMMUNICATION ON CURRENT PLANT
 STATUS BETWEEN THE TECHNICIAN AND OPERATIONS PERSONNEL.  TO PREVENT
 RECURRENCE, THE ADMINISTRATIVE PROCEDURE WHICH CONTROLS THE INITIATION
 AND PROCESSING OF WORK REQUESTS IS BEING REVIEWED FOR REVISION TO
 BETTER INFORM THE WORK GROUPS AND OPERATIONS PERSONNEL AS TO THE
 CONSEQUENCE OF A WORK ACTIVITY.  THIS REVIEW IS EXPECTED TO BE
 COMPLETE BY 11/16/84.
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FORM   141                LER SCSS DATA                     08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC      EVENT DATE
  499   1989      020         0     8910040297  215393       08/29/89
********************************************************************

DOCKET:499  SOUTH TEXAS 2            TYPE:PWR
                REGION:  4           NSSS:WE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: HOUSTON LIGHTING & POWER CO.
                SYMBOL: HLP

COMMENTS
 STEP 2: COMP XS - STATIC TRANSFER SWITCH.

WATCH-LIST CODES FOR THIS LER ARE:
  20  EQUIPMENT FAILURE
  34  DESIGN ERROR OR INADEQUACY

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

ABSTRACT
 POWER LEVEL - 100%. ON 8/29/89, UNIT 2 WAS IN MODE 1 AT 100% POWER.
 AT 1400 HOURS ALL THREE OPERATING TURBINE DRIVEN FEEDWATER PUMPS
 TRIPPED.  THE LICENSED CONTROL ROOM OPERATOR IMMEDIATELY TRIPPED THE
 REACTOR IN ANTICIPATION OF LOW STEAM GENERATOR LEVEL.  AN AUXILIARY
 FEEDWATER ACTUATION SUBSEQUENTLY OCCURRED ON LOW STEAM GENERATOR
 LEVEL.  THE UNIT WAS STABILIZED IN MODE 3 WITH NO UNEXPECTED POST-TRIP
 TRANSIENTS.  THE CAUSE OF THIS EVENT WAS A MOMENTARY INTERRUPTION OF
 CONTROL POWER TO THE FEEDWATER PUMP OVERSPEED PROTECTION CIRCUITS DUE
 TO THE FAILURE OF AN INVERTER.  A CONTRIBUTING CAUSE WAS THE DESIGN OF
 THE FEEDWATER PUMP OVERSPEED PROTECTION CIRCUITS WHICH COULD NOT
 TOLERATE THE MOMENTARY LOSS OF CONTROL POWER WITHOUT TRIPPING THE
 PUMPS.  THE INVERTER HAS BEEN REPAIRED AND RETURNED TO SERVICE.  THE
 DESIGN OF THE FEEDWATER PUMP OVERSPEED PROTECTION HAS BEEN MODIFIED TO
 AN "ENERGIZE TO TRIP" SCHEME ON UNIT 2 AND WILL BE MODIFIED ON UNIT 1
 PRIOR TO STARTUP FROM THE FIRST REFUELING OUTAGE.
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FORM   142                 LER SCSS DATA                       08-30-91

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DOCKET  YEAR  LER NUMBER  REVISION  DCS NUMBER   NSIC     EVENT DATE
  529   1987     004          1     9010150198  219678     04/16/87
*********************************************************************

DOCKET:529  PALO VERDE 2               TYPE:PWR
                REGION:  5             NSSS:CE
ARCHITECTURAL ENGINEER: BECH
     FACILITY OPERATOR: ARIZONA PUBLIC SERVICE CO.
                SYMBOL: APS

WATCH-LIST CODES FOR THIS LER ARE:
  40  PROCEDURAL DEFICIENCY

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

REFERENCE LERS:
    1 529/85-049

ABSTRACT
 POWER LEVEL - 100%. AT 1346 MST ON APRIL 16, 1987, PALO VERDE UNIT 2
 WAS OPERATING AT 100 PERCENT POWER WHEN A REACTOR TRIP AND TURBINE
 TRIP OCCURRED.  THE TRIP WAS CAUSED BY HIGH LOCAL POWER DENSITY (LPD)
 TRIP SIGNALS GENERATED BY THE CORE PROTECTION CALCULATORS (CPC).
 PRIOR TO THE TRIP, CONTROL ROOM OPERATORS AND ELECTRICAL MAINTENANCE
 PERSONNEL WERE IN THE PROCESS OF LOCATING A GROUND ON THE "B" TRAIN
 120 VAC - CLASS 1E BUS DISTRIBUTION PANEL 2E-PNB-D26.  WHEN
 DISTRIBUTION BREAKER D2603 WAS OPENED AND RESHUT AN ERRONEOUS HIGH LPD
 TRIP SIGNAL WAS GENERATED ON ALL FOUR (4) PLANT PROTECTION SYSTEM
 CHANNELS RESULTING IN A REACTOR TRIP. THE ROOT CAUSE OF THIS EVENT WAS
 THE PARTIAL INTERRUPTION AND RESTORATION OF POWER TO THE CONTROL
 ELEMENT ASSEMBLY CALCULATOR (CEAC) RESULTING IN AN ERRONEOUS HIGH
 PENALTY FACTOR TRANSMISSION TO ALL CPC'S.  THIS ANOMALY WAS KNOWN
 HOWEVER, THE ANOMALY WAS CONSIDERED TO BE A MINOR OPERATIONAL CONCERN.
 THE PROCESS USED FOR DETERMINING THE LOCATION OF GROUNDS WAS
 SYSTEMATIC AND IN ACCORDANCE WITH APPROVED PLANT PROCEDURES HOWEVER,
 OPERATIONS PERSONNEL WERE NOT AWARE OF THE INFORMATION CONCERNING THE
 ANOMALY.  AS CORRECTIVE ACTION, THE EFFECTS OF CYCLING EACH BREAKER ON
 THE CLASS 1E INSTRUMENT AC DISTRIBUTION PANELS WILL BE INCORPORATED,
 AS APPROPRIATE, INTO OPERATIONS GUIDELINES.
*

THIS SESSION HAS USED    7.23 SECONDS OF CPU TIME AND
HAS BEEN ACTIVE FOR   87.23 SECONDS

THE ESTIMATED COST OF THE RUN IS $    2.19
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