FORM 1 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
029	1986	004	0	8607100426	199889	06/01/86

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

COMMENTS
STEP 2: MODEL 2AX-PS9A. STEP 16: COMP MEI-CONCENTRATOR; EFF DX-UNSPECIFIED DAMAGE.

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

REFERENCE LERS:
1 029/83-022

ABSTRACT
POWER LEVEL - 101%. WHILE OPERATING AT 100% POWER IN MODE 1 ON JUNE 1, 1986, A SEVERE LIGHTNING STORM CAUSED A DISTURBANCE ON THE PLANT'S 120 VOLT A.C. M-G SET DISTRIBUTION PANEL. THE RESULTING VOLTAGE SURGE CAUSED THE FAILURE OF THE HEATER DRAIN TANK LEVEL CONTROL CHANNEL, WHICH TRIPPED BOTH HEATER DRAIN PUMPS. THE LOSS OF THE HEATER DRAIN PUMPS TRIPPED THE THREE BOILER FEED PUMPS ON LOW SUCTION PRESSURE WITH A RESULTING LOSS OF FEEDWATER. ATTEMPTS TO RESTART THE PUMPS FAILED AND THE REACTOR SCRAMMED AT 2034 HOURS ON LOW STEAM GENERATOR LEVEL. ALL AUTOMATIC SAFETY SYSTEMS FUNCTIONED AS REQUIRED OR WERE AVAILABLE FOR OPERATION EXCEPT FOR PANALARMS N-A34, N-A35, N-A36, N-A40, N-A41, N-A42, N-A46, N- A47, N-A48, T-C79, T-CBO, AND T-C90 THROUGH T-CI02. THE HEATER DRAIN TANK LEVEL CONTROL CHANNEL POWER SUPPLY WAS FOUND DAMAGED AND WAS REPLACED. THERE WAS NO ADVERSE AFFECT ON THE HEALTH OR SAFETY OF THE PUBLIC AS A RESULT OF THIS EVENT. THIS IS THE FIRST EVENT OF THIS NATURE. THE PLANT WAS RETURNED TO POWER ON JUNE 3, 1986.

FORM 2 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
029	1989	002	0	8902170016	213101	01/11/89

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

COMMENTS
STEPS 4,5: EFF IX - VOLTAGE FLUCTUATIONS.

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.

ABSTRACT
POWER LEVEL - 000%. ON 1/11/89, AT 1937 HOURS, WITH THE PLANT IN MODE 3, WHILE CONDUCTING CONTROL ROD DROP TIME MEASUREMENTS FOLLOWING A REFUELING OUTAGE, THE REACTOR PROTECTION SYSTEM AUTOMATICALLY ACTUATED. AT THE TIME OF THE EVENT THE NO. 1 VITAL BUS INVERTER WAS OUT OF SERVICE FOR MAINTENANCE, WITH THE VITAL BUS INVERTER POWER SUPPLY IN BYPASS. IN THIS CONFIGURATION POWER TO THE VITAL BUS WAS SUPPLIED FROM EMERGENCY MCC-5. THE REACTOR WAS SUBCRITICAL AND THE GROUP A CONTROL RODS WERE AT 82 INCHES, BEING WITHDRAWN TO 90 INCHES. THE ROOT CAUSE OF THIS EVENT IS ATTRIBUTED TO A VOLTAGE FLUCTUATION ON THE VITAL BUS WHICH INDUCED A FALSE HIGH STARTUP RATE SCRAM SIGNAL, OPENING THE SCRAM BREAKERS, BK-1 AND BK-2. THE UNPLANNED OPENING OF BK-1 AND 2 CONSTITUTES AN ACTUATION OF THE RPS. THE VOLTAGE FLUCTUATION OCCURRED WHEN THE NO. 1 BOILER FEED PUMP WAS STARTED. NORMALLY, THE VITAL BUS INVERTER WOULD HAVE PREVENTED THE VOLTAGE FLUCTUATION ON THE EMERGENCY MCC-5 FROM AFFECTING THE RPS. THE OPERATORS TOOK ACTION TO PRECLUDE THE STARTING OF HEAVY LOADS WHILE THE VITAL BUS INVERTER WAS IN BYPASS. TO PREVENT A RECURRENCE OF THIS EVENT CONDITIONAL PRECAUTIONS WILL BE ADDED TO THE APPROPRIATE PLANT OPERATING PROCEDURES. THIS IS THE FIRST OCCURRENCE OF THIS NATURE. NO FURTHER CORRECTIVE ACTIONS ARE DEEMED NECESSARY. THE RPS FUNCTIONED AS DESIGNED.

FORM 3 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
206	1989	002	0	8902280475	213086	01/23/89

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:
32 COMMUNICATION PROBLEM
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 - 000%. FROM 0400 TO 2300, ON 1/23/89, FOLLOWING REFUELING WITH THE REACTOR VESSEL HEAD REMOVED, REACTOR REFUELING CAVITY WATER LEVEL WAS BEING REDUCED AND THE CAVITY SURFACES WERE DECONTAMINATED WITH APPROX. 440 GALLONS OF UNBORATED WATER. THIS PROCESS REDUCED THE BORON CONCENTRATION OF THE REACTOR COOLANT FROM APPROX. 2663 PPM TO 2626 PPM. THIS REACTIVITY ADDITION WAS CONTRARY TO THE REQUIREMENTS OF TECH SPECS 3.7 AND 3.8, DUE TO AN INOPERABLE VITAL BUS AND INOPERABLE SOURCE RANGE MONITORS, RESPECTIVELY. THERE WAS NO SAFETY SIGNIFICANCE TO THIS EVENT SINCE THE MINIMUM REQUIRED SHUTDOWN MARGIN OF 5% (EQUIVALENT TO 1900 PPM BORON CONCENTRATION) WAS NOT APPROACHED. DUE TO A MISAPPLICATION OF GUIDANCE INVOLVING THE ACCEPTABILITY OF POSITIVE REACTIVITY ADDITION FROM THE USE OF UNBORATED WATER IN THE SPENT FUEL POOL, OPERATIONS AUTHORIZED A SMALL AMOUNT OF UNBORATED WATER TO BE USED WITHIN THE REACTOR REFUELING CAVITY DURING THE PROCESS. FURTHERMORE, AS A RESULT OF MISUNDERSTANDINGS BETWEEN OPERATIONS AND DECONTAMINATION PERSONNEL, THE EVOLUTION INVOLVED AN ADDITIONAL QUANTITY OF WATER, AND OCCURRED OVER A LONGER PERIOD OF TIME (3 SHIFTS), THAN WHAT WAS INTENDED TO BE AUTHORIZED. THIS EVENT HAS BEEN REVIEWED WITH APPROPRIATE DECONTAMINATION AND OPERATIONS PERSONNEL.

FORM 4 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
219	1984	017	1	8501080531	194562	06/27/84

DOCKET:219 OYSTER CREEK TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: BNRO
FACILITY OPERATOR: GENERAL PUBLIC UTILITIES CORP.
SYMBOL: GPU

COMMENTS
WATCH LIST 975 - POTENTIAL GENERIC FAULT IN CONTAINMENT ISOLATION CONTROL CIRCUIT DESIGN.

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

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.

ABSTRACT
POWER LEVEL - 000%. A MODIFICATION WAS IN PROGRESS WHICH INVOLVED PLANT COMPUTER SYSTEM TIE-INS. DURING THE PERFORMANCE OF A PROCEDURE WHICH INVOLVED THE TIE-IN OF COMPUTER WIRING TO EXISTING PLANT CIRCUITRY, A NEUTRAL ELECTRICAL LEAD WAS REQUIRED TO BE LIFTED. THIS ACTION CAUSED 15 PRIMARY CONTAINMENT ISOLATION VALVES, INCLUDING ALL 4 MSIV'S, TO REPOSITION. THE PLANT ALSO EXPERIENCED A HALF SCRAM AT APPROX THE SAME TIME THAT THESE VALVES CYCLED. THE PREVIOUSLY LIFTED NEUTRAL ELECTRICAL LEAD AND A FUSE PREVIOUSLY REMOVED WERE RE-INSTALLED. THE PRIMARY CONTAINMENT ISOLATION VALVES WHICH REPOSITIONED WERE THEN PLACED IN THEIR PROPER POSITIONS BY OPERATOR ACTION. AN INTERMEDIATE RANGE MONITOR BELIEVED TO HAVE CAUSED THE HALF-SCRAM WAS RANGED UP-SCALE, AND THE NEUTRAL ELECTRICAL LEAD WAS ONCE AGAIN LIFTED. THE RESULTS WERE THE SAME AS BEFORE, EXCEPT THAT NO HALF-SCRAM OCCURRED. PLANT CONDITIONS WERE RESTORED TO NORMAL. NO VIOLATION OF THE TECH SPECS OCCURRED SINCE PRIMARY CONTAINMENT INTEGRITY WAS NOT REQUIRED AT THE TIME OF THE INCIDENT. THE VALVES REPOSITIONED DUE TO AN ABNORMAL CURRENT FLOWPATH WHICH WAS ESTABLISHED THROUGH THEIR SOLENOIDS WHEN THE NEUTRAL LEAD WAS LIFTED. THIS ABNORMAL FLOW PATH HAS BEEN VERIFIED THROUGH PERFORMANCE OF ADDITIONAL TESTING ON THE CONTAINMENT ISOLATION VALVE CONTROL CIRCUITRY.

FORM 5 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
237	1987	024	0	8709250294	206326	08/21/87

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

COMMENTS
STEP 3: MODEL NO. P-200-12. STEP 10: CAUSE IX - AUTOMATIC TRANSFER OF POWER, EFF IH - MOMENTARY LOSS OF POWER. STEP 20: CAUSE LX - LIMITED MEMORY. STEP 21: COMP DR - COVER.

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:
1 237/84-009 2 237/87-016 3 237/87-023 4 249/84-010
5 249/87-012

ABSTRACT
POWER LEVEL - 093%. ON AUGUST 21, 1987 AT 1755 HOURS WITH UNIT 2 AT APPROXIMATELY 2350 MW THERMAL (93% POWER) THE REACTOR SCRAMMED ON A LOW REACTOR WATER LEVEL SIGNAL OF +8 INCHES. THE ROOT CAUSE OF THE EVENT WAS THE FAILURE OF THE 2A FEEDWATER REGULATING VALVE (FWRV). THE STEM AND PLUG ASSEMBLY OF THE 2A FWRV SEPARATED DUE TO A FATIGUE CRACK. CORRECTIVE ACTIONS ENTAILED REPLACEMENT OF THE STEM/PLUG ASSEMBLY WITH A NEW WELDED STEM/PLUG. ALSO TO PREVENT RECURRENCE A NEW TRIM PACKAGE INCORPORATING A LIGHTER PLUG THAT IS LESS SUSCEPTIBLE TO FATIGUE CRACKING WILL BE CONSIDERED AS REPLACEMENT PARTS IN THE FUTURE. THIS DECISION WILL BE MADE FOLLOWING THE TESTING BEING PERFORMED ON UNIT 3 AS A RESULT OF THE 8/7/87 UNIT 3 SCRAM DUE TO FEEDWATER SYSTEM OSCILLATING. THE SAFETY SIGNIFICANCE WAS MINIMAL SINCE ALL EMERGENCY CORE COOLING SYSTEMS WERE AVAILABLE, HOWEVER, NO ACTUATION WAS NECESSARY, THE FEEDWATER LEVEL CONTROL SYSTEM REMAINED CAPABLE OF MANUAL CONTROL OF REACTOR LEVEL AT ALL TIMES AND THE REACTOR SCRAMMED AT THE SPECIFIED CONSERVATIVE SETPOINT. FIVE (5) PREVIOUS OCCURRENCES WERE REPORTED BY LICENSEE EVENT REPORTS #87-12 AND #84-10 ON DOCKET 050249 AND #84-23, #87-16, #84-9 ON DOCKET 050237

FORM 6 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
244	1988	005	0	8807080142	209704	06/01/88

DOCKET:244 GINNA TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: GLBT
FACILITY OPERATOR: ROCHESTER GAS & ELECTRIC CORP.
SYMBOL: RGE

COMMENTS
STEP 1: BUSSMAN STYLE MDL 1/10 AMP, 125 VOLT FUSE. STEP 8: CAUSE HX - SHRINK EFFECT. WATCH 914 - SEE NRC INSPECTION REPORT 50-244/88-11 FOR DETAILS OF STEPS 32 - 37. $E/E/1.

WATCH-LIST CODES FOR THIS LER ARE:
20 EQUIPMENT FAILURE
914 INADEQUACIES OF INFORMATION

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

ABSTRACT
POWER LEVEL - 098%. ON JUNE 1, 1988 AT 1932 EDST WITH THE REACTOR POWER AT APPROXIMATELY 98%, A REACTOR TRIP OCCURRED DUE TO LOW LEVEL IN THE "B" STEAM GENERATOR COINCIDENT WITH STEAM FLOW FEEDWATER FLOW MISMATCH FOLLOWED IN APPROXIMATELY 3 MINUTES BY A SAFETY INJECTION INITIATION FROM PRESSURIZER LOW PRESSURE. THE TWO REACTOR TRIP BREAKERS OPENED AS REQUIRED AND ALL SHUTDOWN AND CONTROL RODS INSERTED AS DESIGNED. ALL SAFEGUARDS EQUIPMENT OPERATED AS DESIGNED WITH THE EXCEPTION OF TWO VALVES. THE UNDERLYING CAUSE OF THE REACTOR TRIP WAS A TRANSIENT CAUSED BY A BLOWN FUSE IN THE "B" STEAM GENERATOR CONTROLLING FEEDWATER FLOW CHANNEL POWER SUPPLY. THE UNDERLYING CAUSE OF THE SAFETY INJECTION INITIATION WAS A REACTOR COOLANT SYSTEM COOLDOWN CAUSED BY OVERFEEDING THE STEAM GENERATORS. IMMEDIATE CORRECTIVE ACTION WAS TO STABILIZE THE PLANT PER THE EMERGENCY OPERATING PROCEDURES FOR REACTOR TRIP AND SAFETY INJECTION. ACTION TAKEN TO PREVENT RECURRENCE WAS TO INVESTIGATE AND REPLACE ALL FEEDWATER FLOW CHANNEL POWER SUPPLY FUSES AND TO REPLACE THE POWER SUPPLY ON THE EFFECTED CHANNEL.

FORM 7 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
247	1988	009	0	8808310153	210252	07/25/88

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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

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

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

REFERENCE LERS:
1 247/84-003

ABSTRACT
POWER LEVEL - 100%. AT APPROXIMATELY 1345 HOURS AND 1815 HOURS ON JULY 25, 1988, A DEFECTIVE REGULATOR BOARD ON THE SOLA TRANSFORMER THAT PROVIDES A REGULATED SOURCE OF POWER FOR THE ROD POSITION INDICATION SYSTEM CAUSED ALL ROD POSITIONS TO INDICATE HIGH. LOSS OF ALL ROD POSITION INDICATION IS A CONDITION NOT COVERED BY A TECHNICAL SPECIFICATION LIMITING CONDITION FOR OPERATION AND, THEREFORE, ENTRY INTO TECHNICAL SPECIFICATION 3.0.1 WAS REQUIRED ON BOTH OCCASIONS. ADJUSTMENT OF THE POTENTIOMETER APPEARED TO CORRECT THE CONDITION AFTER THE FIRST OCCURRENCE. THE REGULATOR BOARD ON THE TRANSFORMER WAS REPLACED AFTER THE SECOND OCCURRENCE, WHICH ULTIMATELY CORRECTED THE HIGH VOLTAGE CONDITION. THE HEALTH AND SAFETY OF THE PUBLIC WERE NOT AFFECTED BY THIS EVENT.

FORM 8 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
249	1986	019	0	8612160138	202112	11/13/86

DOCKET:249 DRESDEN 3 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.

REFERENCE LERS:
1 237/86-019 2 249/86-021

ABSTRACT
POWER LEVEL - 092%. ON 11-13-86 POWER UNDER NORMAL CONDITIONS A SCRAM OCCURRED. THE CAUSE OF THE SCRAM WAS THE SIMULTANEOUS OCCURRENCE OF 2 UNRELATED HALF- SCRAMS. THE FIRST HALF-SCRAM WAS CAUSED BY PERSONNEL ERROR. ABOUT 1 WEEK PRIOR TO THE EVENT, AN ELECTRICAL MAINTENANCE FOREMAN (EMF) WAS PERFORMING WORK ON THE UNINTERRUPTIBLE POWER SUPPLY (UPS). THE ESSENTIAL SERVICE BUS (ESB) WHICH IS NORMALLY POWERED BY THE UPS, WAS BEING POWERED BY ITS RESERVE POWER SOURCE. THE EMF LEFT FOR VACATION WITHOUT COMPLETING HIS WORK ON THE UPS. DURING HIS ABSENCE, A REACTOR SCRAM OCCURRED. DURING STARTUP FOLLOWING THE SCRAM, THE OPERATORS SWITCHED THE ESB POWER. SOURCE FROM ITS RESERVE POWER SOURCE TO ITS NORMAL POWER SOURCE. WHEN THE EMF RETURNED FROM HIS VACATION ON THE DAY OF THE EVENT, HE ASKED IF ANY WORK HAD BEEN PERFORMED ON THE UPS AND WAS TOLD THAT NO WORK WAS PERFORMED. THE EMF THEN PREPARED TO CONTINUE HIS WORK ON THE UPS, WHICH INCLUDED INFORMING OPERATIONS PERSONNEL OF HIS INTENT. THE EMF WAS STILL UNAWARE THAT THE POWER SOURCE TO THE ESB WAS SWITCHED TO THE NORMAL POWER SOURCE. AT 1058 HOURS, THE EMF OPENED A BREAKER WHICH CAUSED A MOMENTARY LOSS OF POWER TO THE ESB AND A HALF-SCRAM WAS INITIATED FROM THE MAIN STEAM LINE RADIATION MONITORS. BEFORE OPERATORS COULD RESET THE HALF-SCRAM, ANOTHER HALF-SCRAM OCCURRED. THE SECOND HALF-SCRAM WAS PROBABLY CAUSED BY A DIRTY CONNECTION IN A FLOW-BIASED APRM.

FORM 9 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
250	1984	015	0	8406180289	190302	05/14/84

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:
1 250/84-009 2 250/84-013

ABSTRACT
POWER LEVEL - 100%. ON MAY 14, 1984, A TURBINE RUNBACK OCCURRED. THE ROOT CAUSE WAS DETERMINED TO STEM FROM AN INSTRUMENT POWER SUPPLY FAILURE IN THE NUCLEAR INSTRUMENTATION SYSTEM (NIS) THAT RESULTED IN AN 'NIS ROD DROP' SIGNAL (NIS CHANNEL N-41) WHICH GENERATED THE TURBINE RUNBACK. ALL EQUIPMENT FUNCTIONED AS DESIGNED. IMMEDIATE CORRECTIVE ACTIONS INCLUDED PROMPT IDENTIFICATION OF THE CAUSE OF THE RUNBACK AND RESTORATION OF FULL POWER OPERATION, TRIPPING THE ASSOCIATED REACTOR TRIP BISTABLES FOR THE NIS CHANNELS REMOVED FROM SERVICE, ISOLATION OF THE FAILED POWER SUPPLY, AND RETURN TO SERVICE OF NIS CHANNEL N-41. SIMILAR OCCURRENCES: LER 250-84-009 AND LER 250-84-013.

FORM 10 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
250	1985	018	0	8508190627	195293	07/16/85

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 4 251/84-011
5 251/84-021 6 251/84-022 7 251/85-012 8 251/85-013
9 251/85-017

ABSTRACT
POWER LEVEL - 000%. ON 7-16-85, UNIT 3 EXPERIENCED A REACTOR TRIP FROM HOT STANDBY CONDITIONS. THE 3C INVERTER THAT WAS IN SERVICE SUPPLYING POWER TO 120V VITAL INSTRUMENT PANEL 3P06, TRIPPED. LOSS OF POWER TO 3P06 RESULTED IN A LOSS OF POWER TO THE NUCLEAR INSTRUMENTATION SYSTEM (NIS) SOURCE RANGE CHANNEL N-31. THE LOSS OF POWER TO CHANNEL N-31 GENERATED A SOURCE RANGE HI FLUX REACTOR TRIP SIGNAL WHICH OPENED BOTH REACTOR TRIP BREAKERS RESULTING IN BOTH SHUTDOWN BANKS FALLING INTO THE CORE. THE CONTROL ROD BANKS WERE ALREADY IN THE CORE AT THE TIME OF THE EVENT. INVESTIGATIONS INTO THE LOSS OF THE 3C INVERTER COULD NOT REVEAL ANY APPARENT ROOT CAUSE. CORRECTIVE ACTIONS: POWER TO THE VITAL INSTRUMENT BUS FOR PANEL 3P06 WAS RE-ESTABLISHED AND THE AFFECTED EQUIPMENT WAS RETURNED TO NORMAL LINEUP. THE 3C INVERTER WAS INSPECTED AND CHECKED AS PER MAINTENANCE INSTRUCTIONS. FUSE F6 WAS FOUND BLOWN AND REPLACED. THE BLOWN FUSE WAS A RESULT AND NOT THE CAUSE OF THE LOSS OF THE 3C INVERTER. NO OTHER SIGNIFICANT PROBLEMS WERE FOUND. THE ON-GOING CORRECTIVE ACTION IS TO REPLACE THE INVERTERS WITH A MODEL OF A DIFFERENT MANUFACTURER. THE 3C INVERTER WAS REMOVED FROM SERVICE FOR THIS REPLACEMENT ON 7-19-85. SIMILAR OCCURRENCES: 250/84-003, 250/84-014, 250/84-026, 251/84-011, 251/84-021, 251/84-022, 251/85-012, 251/85-013, AND 251/85-017.

FORM 11 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
251	1984	021	1	8504080577	196658	09/20/84

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

ABSTRACT
POWER LEVEL - 100%. ON SEPTEMBER 20, 1984, A TURBINE RUNBACK AND SUBSEQUENT REACTOR TRIP OCCURRED. DURING AN INVESTIGATION FOR A GROUND IN THE 3A DC BUS, THE "NORMAL" (4A) STATIC INVERTER (4Y01) TRIPPED DUE TO A BLOWN FUSE. THE 4A INVERTER WAS IN SERVICE SUPPLYING POWER TO A VITAL 120 VOLT (A.C.) INSTRUMENT BUS (PANEL 4P07). THE 4A INVERTER FAILURE RESULTED IN A LOSS OF POWER TO VITAL PANEL 4P07 WHICH CAUSED NUCLEAR INSTRUMENTATION SYSTEM (NIS) CHANNEL N-42 TO GENERATE AN "NIS ROD DROP" SIGNAL CAUSING A TURBINE RUNBACK TO 70% POWER. FOLLOWING THE TURBINE RUNBACK, A REACTOR TRIP OCCURRED WHEN THE REACTOR PROTECTION LOGIC OF STEAM FLOW GREATER THAN FEED FLOW, COINCIDENT WITH STEAM GENERATOR LOW LEVEL FOR THE "B" STEAM GENERATOR WAS MADE UP. IMMEDIATE CORRECTIVE ACTIONS INCLUDED STABILIZING THE UNIT AND RE-ENERGIZING VITAL PANEL 4P07. LONG TERM CORRECTIVE ACTION IS TO REPLACE THE INVERTERS TO ENSURE A MORE RELIABLE POWER SUPPLY. ALL EQUIPMENT FUNCTIONED AS DESIGNED ON INITIATION OF THE ENGINEERED SAFETY FEATURE ACTUATION SIGNAL (ESFAS) GENERATED IN THE REACTOR PROTECTION SYSTEM. SIMILAR OCCURRENCES: LER 251-84-011.

FORM 12 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
251	1985	012	0	8507150257	194932	05/30/85

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:
1 250/84-003 2 250/84-014 3 250/84-026 4 251/84-011
5 251/84-021 6 251/84-022

ABSTRACT
POWER LEVEL - 100%. ON MAY 30, A REACTOR TRIP OCCURRED DUE TO THE LOSS OF POWER FROM THE AS INVERTER TO THE 120 VAC VITAL INSTRUMENT BUS FOR THE PANEL 4P07. THE LOSS OF VOLTAGE ON THE VITAL BUS RESULTED IN THE "B" STEAM GENERATOR LEVEL CHANNEL II FAILING LOW, AND THE STEAM GENERATOR FEEDWATER CONTROL STATION TRANSFERRING TO MANUAL. WHILE MANUALLY CONTROLLING FEEDWATER FLOW, A REACTOR TRIP OCCURRED WHEN THE REACTOR PROTECTION LOGIC OF STEAM GENERATOR LOW LEVEL COINCIDENT WITH STEAM FLOW GREATER THAN FEEDWATER FLOW ON THE 4B STEAM GENERATOR WAS COMPLETED DUE TO A FEEDWATER FLOW TRANSIENT CAUSED BY A TURBINE RUNBACK. THE UNIT WAS STABILIZED IN A HOT SHUTDOWN CONDITION. SIMILAR OCCURRENCES: LERS 250/84-003, 250/84-014, 250/84-026, 251/84-011, 251/84-021, AND 251/84-022. THE LOSS OF POWER TO THE VITAL INSTRUMENT BUS SERVING THE 4P07 PANEL RESULTED FROM A BLOWN FUSE ON THE AS SPARE INVERTER. ALTHOUGH A FULL SET OF TESTS WERE PERFORMED ON THE INVERTER WHICH DEMONSTRATED THAT IT MET THE MANUFACTURER'S SPECIFICATIONS, THE EXACT CAUSE OF THE BLOWN FUSE COULD NOT BE DETERMINED. IN THE PAST, BOTH PLANTS HAVE EXPERIENCED SIMILAR EVENTS DUE TO THE LOSS OF POWER FROM THESE INVERTERS.

FORM 13 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
251	1985	017	0	8508010723	197717	06/20/85

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

COMMENTS
WATCH 990 - INTERACTION BETWEEN UNIT 3 AND UNIT 4 EQUIPMENT.

WATCH-LIST CODES FOR THIS LER ARE:
990 COMPLEX EVENT

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	4 251/84-011
5 251/84-021	6 251/84-022	7 251/85-012	8 251/85-013

ABSTRACT
POWER LEVEL - 100%. ON 6-20-85 UNIT 4 EXPERIENCED A REACTOR TRIP. THE 4C INVERTER THAT WAS IN SERVICE SUPPLYING POWER TO THE 120V VITAL INSTRUMENT PANEL 4P06, TRIPPED. LOSS OF 4P06 DE-ENERGIZED LEVEL CONTROLLER LC-460C AND THE PRESSURIZER SPRAY VALVE CONTROLLERS (CAUSING THE SPRAY VALVES TO REMAIN AT THEIR LAST DEMAND POSITION). DE-ENERGIZING OF LC-460C GENERATED A FALSE INDICATION OF LOW PRESSURIZER LEVEL WHICH DE-ENERGIZED THE PRESSURIZER HEATERS AND INITIATED LETDOWN ISOLATION. LOSS OF 4P06 ALSO RESULTED IN THE LOSS OF AUTOMATIC OPERATION OF PORV, PCV-4-455C. PORV PCV-4-456 WAS AVAILABLE WITH ITS ASSOCIATED BLOCK VALVE, MOV-4-535 CLOSED DUE TO SLIGHT LEAKAGE THROUGH PCV-4-456. THESE CONDITIONS, ALONG WITH A TURBINE RUNBACK DUE TO LOSS OF POWER TO NUCLEAR INSTRUMENTATION SYSTEM CHANNEL N-41, RESULTED IN THE RCS PRESSURE INCREASING UNTIL IT REACHED THE PRESSURIZER HIGH PRESSURE REACTOR TRIP SETPOINT OF 2370 PSIG RESULTING IN A REACTOR TRIP. THE LOSS OF THE 4C INVERTER OCCURRED WHILE ATTEMPTING TO ENERGIZE THE 3C INVERTER ONTO THE 3B 120V DC BUS. THE PROCEDURAL REQUIREMENTS FOR THIS EVOLUTION REQUIRE CHARGING THE 3C INVERTER'S CHARGING CAPACITORS PRIOR TO ENERGIZING THE INVERTER ONTO THE BUS. THIS STEP WAS NOT EXECUTED CAUSING THE LOSS OF THE 3C INVERTER WHICH RESULTED IN A DC BUS TRANSIENT WHICH IN TURN CAUSED A LOSS OF THE 4C INVERTER. CORRECTIVE ACTIONS WERE TAKEN.

FORM 14 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
251	1988	005	0	8806020092	209378	04/25/88

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

COMMENTS
$MP/ET/3.

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.

REFERENCE LERS:
1 250/86-011 2 250/86-013 3 250/86-020 4 250/86-027
5 250/87-013 6 250/87-028 7 250/88-005

ABSTRACT
POWER LEVEL - 100%. THE NUCLEAR INSTRUMENTATION SYSTEM (NIS) POWER RANGE DETECTORS ARE CALIBRATED BY PERFORMING A CALORIMETRIC MEASUREMENT AND COMPARING THE RESULTS WITH THE NIS INDICATED POWER. THIS IS USUALLY PERFORMED AUTOMATICALLY BY THE DIGITAL DATA PROCESSING SYSTEM (DDPS). IT WAS LAST PERFORMED ON 4/24/88, AT 0730. DUE TO MALFUNCTIONS, THE DDPS WAS DECLARED OUT OF SERVICE (OOS) AT 2108, 4/24. EFFORTS TO RETURN THE DDPS TO SERVICE WERE INITIATED IMMEDIATELY, HOWEVER A PLANT WORK ORDER (PWO) TO REPAIR THE DDPS WAS GENERATED AT APPROXIMATELY 0730 WHEN IT BECAME APPARENT THAT INSTRUMENTATION AND CONTROLS (I&C) MAINTENANCE HELP WAS REQUIRED. UNTIL ABOUT 1030, THE EMPHASIS WAS PLACED UPON FIXING THE DDPS AND IT WAS BELIEVED THAT A MANUAL CALCULATION WOULD NOT BE NEEDED. AT APPROXIMATELY 1100, EFFORTS TO PERFORM THE CALCULATION MANUALLY WERE INITIATED, HOWEVER THE CALCULATION WAS NOT COMPLETED UNTIL 1358. AS THE GRACE PERIOD EXPIRED AT 1330, THE POWER RANGE DETECTORS WERE DECLARED OOS, AND THE UNIT ENTERED TS 3.0.1. AT 1358, THE DETECTORS WERE RETURNED TO SERVICE AND THE UNIT EXITED TS 3.0.1. THE CAUSE OF THE LATE SURVEILLANCE WAS PERSONNEL ERROR. THE DDPS WAS REPAIRED. THE GROUP RESPONSIBLE FOR THE PERFORMANCE OF THIS SURVEILLANCE DISCUSSED THIS EVENT IN ORDER TO PREVENT RECURRENCE BY ASSURING THAT ADEQUATE TIME IS ALLOTTED TO PERFORM THE SURVEILLANCE MANUALLY.

FORM 15 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
255	1986	013	0	8604020224	198707	02/25/86

DOCKET:255 PALISADES TYPE:PWR
REGION: 3 NSSS:CE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: CONSUMERS POWER CO.
SYMBOL: CPC

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

REFERENCE LERS:
1 255/85-013 2 255/86-011

ABSTRACT
POWER LEVEL - 000%. ON 2-25-86, WITH THE PLANT IN HOT SHUTDOWN, A REACTOR PROTECTION SYSTEM (RPS) ACTUATION OCCURRED FROM A SPIKE IN A NUCLEAR INSTRUMENT CHANNEL. THE SPIKE WAS CAUSED BY THE RE-ENERGIZATION OF A PREFERRED AC BUS DURING A MANUAL TRANSFER OF POWER SUPPLIES. NO ROD MOTION OCCURRED IN THIS EVENT. THE RPS ACTUATION CAUSED THE TURBINE GENERATOR TRIP CIRCUIT TO INITIATE AN AUTOMATIC START OF BOTH DIESEL GENERATORS. THE DIESEL GENERATORS WERE NOT LOADED ONTO ANY BUS. THE SPIKE IS A NORMAL OCCURRENCE DURING THE MANUAL TRANSFER OF POWER SUPPLIES TO THE PREFERRED BUS. THE RPS ACTUATION MAY BE PREVENTED BY PLACING A HIGH RATE TRIP CHANNEL IN BYPASS PRIOR TO THE BUS TRANSFER. THIS REQUIREMENT HAS BEEN ADDED TO OPERATING PROCEDURES. ALL EQUIPMENT OPERATED PROPERLY IN THIS EVENT. THE ACTUATION WAS NOT REQUIRED TO MITIGATE ANY ABNORMAL PLANT CONDITIONS. FOR SIMILAR OCCURRENCE, REFERENCE LERS 85-13 AND 86-11.

FORM 16 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
260	1989	021	1	9002220042	216872	07/10/89

DOCKET:260 BROWNS FERRY 2 TYPE:BWR
REGION: 2 NSSS:GE
ARCHITECTURAL ENGINEER: TVAX
FACILITY OPERATOR: TENNESSEE VALLEY AUTHORITY
SYMBOL: TVA

COMMENTS
OTHER REPORTABILITY - VOLUNTARY. STEP 3: COMP ZZZ - INTERNAL PANEL COMPONENTS.

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

REPORTABILITY CODES FOR THIS LER ARE:
21 OTHER: Voluntary report, special report, Part 21 report, etc.

ABSTRACT
POWER LEVEL - 000%. ON JULY 10, 1989, INSTRUMENT TECHNICIANS WERE PERFORMING ROUTINE NEUTRON MONITORING SYSTEM TESTING IN ACCORDANCE WITH A SURVEILLANCE INSTRUCTION (SI). AS A RESULT OF ACTIONS DURING THIS TESTING, IT WAS ORIGINALLY BELIEVED THAT AN OPERATION PROHIBITED BY TECHNICAL SPECIFICATIONS HAD OCCURRED AND THIS EVENT WAS REPORTED IN REVISION "0" OF THIS LER. FOLLOWING THE SUBMITTAL OF THAT LER, ADDITIONAL REVIEW OF THIS EVENT HAS DETERMINED THAT THIS EVENT WAS NOT REPORTABLE AS AN LER. THIS REVISION CHANGES THIS LER TO A VOLUNTARY REPORT. DURING SI TESTING, THE NUMBER OF OPERABLE INTERMEDIATE RANGE MONITOR (IRM) CHANNELS WAS LESS THAN REQUIRED BY TECHNICAL SPECIFICATION 3.1, TABLE 3.1.A. HOWEVER, THROUGHOUT THIS EVENT, UNIT 2 WAS IN COLD SHUTDOWN WITH ALL CONTROL RODS INSERTED AND NO CORE ALTERATIONS IN PROGRESS. WITH THESE CONDITIONS, THE APPLICABLE ACTION FOR TECHNICAL SPECIFICATION 3.1, TABLE 3.1.A WAS MET DURING THIS EVENT. ADDITIONALLY, THE TIME WITH LESS THAN THE MINIMUM REQUIRED OPERABLE IRM CHANNELS DURING THIS EVENT DID NOT EXCEED THE FOUR HOURS ALLOWED BY TECHNICAL SPECIFICATION 3.1 FOR REQUIRED SURVEILLANCE TESTING. DUE TO AN OPERATED FUSE, THE ELAPSED TIME WITH LESS THAN THE MINIMUM REQUIRED OPERABLE IRM CHANNELS WAS APPROXIMATELY ONE HOUR.

FORM 17 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
261	1985	021	0	8510180532	196272	09/17/85

DOCKET:261 ROBINSON 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: EBAS
FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
SYMBOL: CPL

COMMENTS
STEPS 3 & 6: EFFECT IX - VOLTAGE SPIKE.

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

ABSTRACT
POWER LEVEL - 100%. ON 9-17-85, THE REACTOR WAS AT 100% POWER. AT 1259 HRS, A REACTOR TRIP OCCURRED DUE TO A FALSE LOW REACTOR COOLANT FLOW SIGNAL. TESTING ON THE LOOP 1 REACTOR COOLANT FLOW PROTECTION CIRCUITRY WAS IN PROGRESS. ONE OF THE THREE BISTABLES FOR LOOP 1 WAS TRIPPED FOR TESTING. AN INSTRUMENT BUS #2 VOLTAGE SPIKE OCCURRED GENERATING A FALSE SECOND LOOP 1 LOW FLOW SIGNAL. THIS PROVIDED THE NECESSARY 2 OUT OF 3 SIGNALS REQUIRED FOR THE 1 LOOP LOW FLOW REACTOR TRIP. AN EXTENSIVE WALKDOWN OF IB #2 WAS PERFORMED, AND NO SPECIFIC CAUSE FOR THE VOLTAGE SPIKE WAS IDENTIFIED. A SPECIAL PLANT NUCLEAR SAFETY COMMITTEE (PNSC) MEETING WAS HELD TO REVIEW THE EVENT. THE PNSC DETERMINED THAT THE INVESTIGATION HAD BEEN THOROUGH, THAT NO OTHER ACTION COULD BE TAKEN TO DETERMINE THE CAUSE OF THE VOLTAGE SPIKE, AND THAT IT WAS SAFE TO RESTART THE UNIT. AS OF 10-8-85, VOLTAGE SPIKES ON IB#2 HAVE NOT REOCCURRED.

FORM 18 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
261	1986	005	2	8612010229	201984	01/28/86

DOCKET:261 ROBINSON 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: EBAS
FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
SYMBOL: CPL

COMMENTS
STEP 2: CAUSE AX-FOR UPGRADE. WATCH 975-LOSS OF OFF-SITE POWER OCCURRED WITH ONE DG OUT OF SERVICE. STEPS 4,5: COMP MEI-FUSE HOLDER.

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

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

ABSTRACT
POWER LEVEL - 080%. ON 1-28-86 WITH UNIT 2 AT 80% POWER, EMERGENCY BUSS E-2 WAS LOST, RESULTING IN A HIGH PRESSURIZER PRESSURE REACTOR TRIP. UNIT AUXILIARIES THEN SHIFTED TO THE STARTUP (S/U) TRANSFORMER BUT A WEST 115 KV BUSS LOCKOUT DE-ENERGIZED THE TRANSFORMER, CAUSING LOSS OF OFFSITE AC POWER. EMERGENCY BUSS E-1 WAS ENERGIZED. SI AND MSIV CLOSURE SIGNALS WERE RECEIVED FROM A HIGH STEAM LINE FLOW COINCIDENT WITH LOW TAVE, AND AN UNUSUAL EVENT WAS DECLARED. POWER WAS RESTORED TO E-2 BUT A SECOND SI SIGNAL WAS RECEIVED FROM A STEAM LINE HIGH DIFFERENTIAL PRESSURE. OFFSITE AC POWER WAS THEN RESTORED AND THE UNUSUAL EVEN WAS TERMINATED. ON 3-6-86, DURING REFUELING SHUTDOWN, TWO STATION SERVICE TRANSFORMERS WERE TAKEN OUT-OF-SERVICE FOR MAINTENANCE ON THEIR COMMON SUPPLY BREAKER. WHILE ENERGIZING E-2 FROM EMERGENCY BUSS E-1, THE SUPPLY BREAKER OPENED DUE TO DEGRADED VOLTAGE RELAY ACTUATION. INVESTIGATION FOUND THE LOSS OF E-2 AND LOSS OF OFFSITE AC POWER APPARENTLY RESULTED FROM TWO SEPARATE, INDEPENDENT CONDITIONS - SUSCEPTIBILITY OF THE S/U TRANSFORMER PRIMARY SIDE CURRENT TRANSFORMERS (CTS) TO DC SATURATION AND VULNERABILITY TO A RANDOM BLOWN FUSE IN THE EMERGENCY BUSS UNDERVOLTAGE RELAYS. HARDWARE CHANGES HAVE BEEN MADE, AND INSTALLATION OF AN IMPROVED FUSE HOLDER DESIGN HAS BEEN PLANNED.

FORM 19 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
261	1990	001	0	9002220270	216883	01/10/90

DOCKET:261 ROBINSON 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: EBAS
FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
SYMBOL: CPL

COMMENTS
STEP 1: COMP MSC - BUS RECEPTACLE.

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

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

ABSTRACT
POWER LEVEL - 100%. ON JANUARY 10, 1990, AT 0908 HOURS, POWER WAS LOST TO THE ROD POSITION INDICATION (RPI) SYSTEM WHICH RESULTED IN THE ACTUATION OF AN AUTOMATIC TURBINE RUNBACK FROM 100% POWER. THE UNIT WAS STABILIZED AT APPROXIMATELY 46% POWER FOLLOWING THE TRANSIENT. WITH THE RPI SYSTEM DE-ENERGIZED, THE ROD POSITION DEVIATION MONITORING FUNCTION WAS UNAVAILABLE. THIS FUNCTION IS PROVIDED BY THE PLANT PROCESS COMPUTER USING INPUT DATA RECEIVED FROM THE RPI SYSTEM, AND IS ONE PART OF THE CONTROL ROD MISALIGNMENT MONITOR AS REQUIRED BY TECHNICAL SPECIFICATION TABLE 3.5-2, ITEM 15. THE TECHNICAL SPECIFICATIONS ALSO REQUIRE THAT THE CONTROL ROOM ANALOG RPI BE MONITORED IF THE MINIMUM REQUIRED CHANNELS OF THE ROD POSITION DEVIATION MONITOR ARE NOT OPERABLE. HOWEVER, THE LOSS OF POWER TO THE RPI SYSTEM ALSO CAUSED THE CONTROL ROOM ANALOG RPI TO BE UNAVAILABLE. THEREFORE, IMPLEMENTATION OF TECHNICAL SPECIFICATION 3.0 WAS REQUIRED. THE CAUSE OF THE EVENT WAS THE FAILURE OF A TWO POLE, SINGLE PHASE, 120 VOLT AC CIRCUIT BREAKER WHICH SUPPLIES THE RPI SYSTEM. THE REQUIRED REPAIRS AND POST MAINTENANCE TESTING WERE COMPLETED, AND THE RPI SYSTEM WAS RETURNED TO SERVICE AT 1540 HOURS ON JANUARY 10, 1990. THIS LICENSEE EVENT REPORT IS SUBMITTED PURSUANT TO 10CFR50.73(A)(2)(I)(B).

FORM 20 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
263	1984	015	0	8405010038	189599	03/25/84

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

COMMENTS
STEP 2: COMPONENT CODE MSC - CONNECTING STAB OF BREAKER SHELF TO MOTOR CONTROL CENTER BUS BARS TRIP UNIT CAT. NO. TFK236T150

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

ABSTRACT
POWER LEVEL - 000%. THE MOTOR SOURCE BREAKER FOR THE REACTOR PROTECTION SYSTEM POWER SUPPLY MOTOR GENERATOR SET TRIPPED WHICH ISOLATED RPS BUS A LOADS. THESE LOADS CONSIST OF POWER RANGE NEUTRON MONITORS, SCRAM SOLENOID LOGIC CHANNEL A, STEAM LINE AND OFF-GAS RADIATION MONITORS. LOSS OF 120V AC POWER TO RADIATION MONITORS INITIATED A PRIMARY CONTAINMENT GROUP II ISOLATION AND START OF STANDBY GAS TREATMENT SYSTEM. POWER WAS RESTORED TO RPS BUS A FROM ALTERNATE SOURCE AND THE SYSTEM WAS RESET AND RETURNED TO NORMAL WHILE REPAIRS WERE MADE AND EQUIPMENT TESTED. THE MG SET WAS RETURNED TO SERVICE 8 DAYS AFTER THE EVENT.

FORM 21 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
265	1984	001	0	8402070303	189034	01/03/84

DOCKET:265 QUAD CITIES 2 TYPE:BWR
REGION: 3 NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
FACILITY OPERATOR: COMMONWEALTH EDISON CO.
SYMBOL: CWE

COMMENTS
STEPS 3,9: EFFECT IX = DEFECTIVE CABLE

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

ABSTRACT
POWER LEVEL - 000%. ON JAN. 3 AND 5, 1984, REACTOR SCRAMS OCCURRED WHILE THE 'A' REACTOR PROTECTION SYSTEM (RPS) WAS OUT OF SERVICE FOR CIRCUIT BREAKER MAINTENANCE. IN BOTH CASES, THE UNIT WAS SHUTDOWN FOR A REFUELING OUTAGE. NO ANNUNCIATORS OR COMPUTER ALARMS CAME UP TO EXPLAIN THE REASON FOR THE 'B' RPS CHANNEL TRIP AND RESULTANT SCRAM. THROUGHOUT THE TIME SPAN OF THE EVENTS, INTERMEDIATE RANGE MONITOR (IRM) 18 HAD BEEN SPIKING SPURIOUSLY DUE TO A FAULTY DETECTOR CABLE. IT IS POSTULATED THAT THE SPIKING IRM HAD CAUSED THE 'B' RPS CHANNEL TRIP, ALTHOUGH NO ALARMS WERE PRESENT TO VERIFY IT. THE DETECTOR CABLE FOR IRM 18 WAS REPLACED. PREVENTATIVE MAINTENANCE ON RPS BUSES IS NOT ROUTINELY ACCOMPLISHED DURING POWER OPERATION. THE CONDITIONS SURROUNDING THIS EVENT WOULD NOT EXIST DURING OPERATION; THEREFORE, NO FURTHER CORRECTIVE ACTION IS DEEMED APPROPRIATE AT THIS TIME.

FORM 22 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
265	1990	007	0	9007090056	218698	05/31/90

DOCKET:265 QUAD CITIES 2 TYPE:BWR
REGION: 3 NSSS:GE
ARCHITECTURAL ENGINEER: SLXX
FACILITY OPERATOR: COMMONWEALTH EDISON CO.
SYMBOL: CWE

COMMENTS
STEP 2: 30 AMP, BUSS MIN-30 FUSE.

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

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

REFERENCE LERS:
1 254/85-021 2 265/88-015

ABSTRACT
POWER LEVEL - 100%. ON MAY 31, 1990 AT 1615 HOURS, UNIT TWO WAS IN THE RUN MODE AT 100 PERCENT OF RATED CORE THERMAL POWER. AT THIS TIME, THE FOLLOWING ALARMS WERE RECEIVED ON THE 902-5 PANEL: A-3, ROD DRIFT; B-3, ROD WORTH MIN. BLOCK; E-3, ROD OVERTRAVEL; AND G-5, RPIS INOPERATIVE. ROD POSITION INDICATION (RPIS) HAD BEEN LOST ON THE LOWER HALF OF THE FULL CORE DISPLAY AND 4 ROD DISPLAY. AN EQUIPMENT OPERATOR (EO) WAS DISPATCHED TO THE 902-27 AND 28 PANELS TO INVESTIGATE. THE CAUSE OF THE EVENT WAS FOUND TO BE DUE TO A BLOWN POWER SUPPLY FUSE IN THE 902-27 PANEL. IMMEDIATE CORRECTIVE ACTION INVOLVED THE UNIT OPERATOR MONITORING AVERAGE AND LOCAL POWER RANGE MONITORS (APRM) (LPRM) TO ENSURE STEADY STATE POWER LEVELS WERE MAINTAINED. THE BLOWN FUSE WAS REPLACED AT 1643 HOURS WHICH RESTORED FULL ROD POSITION INDICATION. FURTHER CORRECTIVE ACTION WILL INCLUDE SUBMITTING A TECHNICAL SPECIFICATION CHANGE AND UPGRADING AND EXISTING PROCEDURE. THIS REPORT IS BEING SUBMITTED IN ACCORDANCE WITH 10 CFR 50.73(A)(2)(I)(B).

FORM 23 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
266	1985	003	0	8508080469	195786	06/26/85

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

COMMENTS
STEP 12: TURBINE RUNBACK (OCCURRED ON 7/03/85 AFTER RETURNING TO POWER).

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

ABSTRACT
POWER LEVEL - 088%. AT 0723 HRS ON 6-26-85, UNIT 1 TRIPPED FROM 88% POWER BECAUSE OF THE FAILURE OF AN INVERTER FOR THE WHITE INSTRUMENT BUS. THE FUSE IN THE INVERTER OPENED BECAUSE OF THE FAILURE OF AN INTEGRATED CIRCUIT WHICH CONTROLLED THE FIRING OF A SERIES OF SILICON CONTROLLED RECTIFIERS (SCR'S). THIS INSTRUMENT BUS FAILURE CAUSED SEVERAL INSTRUMENTATION SIGNALS TO FAIL TO ZERO. ONE SIGNAL, THE TURBINE FIRST STAGE PRESSURE (WHITE CHANNEL) INPUT INTO THE SG LEVEL CONTROL SYSTEM CAUSED FEEDWATER FLOW TO BE REDUCED WITHOUT A CORRESPONDING REDUCTION IN STEAM FLOW, CREATING A STEAM FLOW FEED FLOW MISMATCH INPUT TO THE RPS. ANOTHER SIGNAL, SG LEVEL (WHITE CHANNEL) CAUSED A LOW LEVEL INPUT INTO THE RPS. THE STEAM FLOW FEED FLOW MISMATCH COINCIDENT WITH THE LOW SG LEVEL RESULTED IN A REACTOR TRIP. ALL EQUIPMENT RESPONDED AS DESIGNED.

FORM 24 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
266	1985	004	0	8509030084	196527	07/25/85

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

COMMENTS
STEPS 2 AND 3: COMP MEI - PRESSURE TRIP DEVICE.

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

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

ABSTRACT
POWER LEVEL - NG %. AT 0604 HRS ON 7-25-85, A 20% RUNBACK WAS INITIATED FROM A ROD POSITION INDICATOR (RPI) ROD BOTTOM BISTABLE ON UNIT 1. THIS BISTABLE PROVIDED A RUNBACK SIGNAL BECAUSE OF A MOMENTARY LOSS OF POWER TO 1Y06 WHICH FEEDS THE RPI SYSTEM. THE CAUSE OF THE POWER FAILURE WAS DUE TO A LOCKOUT OF THE 1X04 LOW VOLTAGE STATION TRANSFORMER. THIS LOCKOUT WAS CAUSED BY A SUDDEN PRESSURE TRIP DEVICE ACTUATION. THE LOCKOUT OF 1X04 CAUSED A LOSS OF POWER ON THE 4.16 KV BUSES 1A03/1A04 AND THE SAFEGUARDS 4.16 KV BUSES 1A05/1A06. THE 1A05/1A06 BUSES AND ASSOCIATED LOADS WERE PICKED UP BY AN AUTO START OF THE DG'S G01 AND G02. DUE TO THE SUSTAINED LOSS OF OFFSITE AC TO THE SAFEGUARDS BUSES FOR GREATER THAN 15 MINS, AN UNUSUAL EVENT WAS DECLARED. AT 0625 HRS A SHUTDOWN WAS COMMENCED AS REQUIRED BY TECH SPECS. AT 0849 HRS, THE TRANSFORMER WAS RETURNED TO SERVICE. THE UNUSUAL EVENT WAS TERMINATED AT 0857 HRS AFTER 1X04 WAS RETURNED TO SERVICE. THE UNIT WAS STARTED BACK UP TO FULL POWER OPERATION AT 1/2% PER MINUTE AT 0858 HRS.

FORM 25 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
266	1985	006	0	8510100128	196108	09/03/85

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

COMMENTS
STEP 1 & 2: EFFECT IX - NEGATIVE VOLTAGE SPIKE.

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

ABSTRACT
POWER LEVEL - 100%. AT 1453 HRS ON 9-3-85, UNIT 1 EXPERIENCED A TURBINE RUNBACK FROM 100% TO 80% POWER. THIS RUNBACK WAS DUE TO A MOMENTARY DOWNWARD SPIKE ON THE NUCLEAR INSTRUMENTATION SYSTEM CAUSED BY A VOLTAGE SPIKE ON THE RED INSTRUMENT BUS. ALL SYSTEMS OPERATED AS DESIGNED. A RETURN TO 100% POWER WAS COMMENCED AT 1456 HOURS.

FORM 26 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
266	1985	007	0	8510220439	196274	09/11/85

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

COMMENTS
STEP 1: COMP ISL - FIRE BARRIER PACK FOR CONDUITS.

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

ABSTRACT
POWER LEVEL - 100%. AT 1315 HRS ON 9-11-85, UNIT 1 EXPERIENCED A TURBINE RUNBACK FROM 100% TO APPROX 80% POWER. THIS WAS DUE TO A MOMENTARY NEGATIVE DOWNWARD SPIKE ON THE NUCLEAR INSTRUMENTATION SYSTEM (NIS) CAUSED BY A VOLTAGE SPIKE ON THE YELLOW INSTRUMENT BUS FEEDING NIS CHANNEL 44. THE VOLTAGE SPIKE WAS CAUSED BY A CONTRACTOR PACKING FIRE BARRIER MATERIAL INTO AN ELECTRICAL CONDUIT CONTAINING THE POWER SUPPLY TO THE INVERTER SUPPLYING THE YELLOW INSTRUMENT BUS. THE PLANT WAS RETURNED TO 100% POWER A SHORT TIME AFTER THE EVENT. ALL RESPONSE TO THE TURBINE RUNBACK WAS NORMAL.

FORM 27 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
266	1985	010	0	8601290256	197681	12/20/85

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

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

ABSTRACT
POWER LEVEL - 100%. AT 0520 HRS ON 12-20-85 UNIT 1 EXPERIENCED A TURBINE RUNBACK TO APPROX 80% POWER. THIS WAS DUE TO A FAILURE IN THE YELLOW INSTRUMENT BUS WHICH CAUSED A NEGATIVE RATE RUNBACK SIGNAL FROM CHANNEL 44 OF THE NUCLEAR INSTRUMENTATION SYSTEM. THE FAILURE OF THE INSTRUMENT BUS WAS DUE TO THE FAILURE OF A CAPACITOR IN THE ISOLATION TRANSFORMER IN THE INSTRUMENTATION BUS CIRCUITRY. THE PLANT WAS RETURNED TO 100% POWER SHORTLY AFTER THE EVENT. ALL PLANT RESPONSE TO THE TURBINE RUNBACK WAS NORMAL.

FORM 28 LER SCSS DATA 08-30-91

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

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

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

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

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

REFERENCE LERS:
1 301/86-003

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

FORM 29 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
266	1986	005	0	8612240042	202117	11/17/86

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

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

REFERENCE LERS:
1 266/85-003

ABSTRACT
POWER LEVEL - 100%. ON NOVEMBER 17, 1986, AT 1808 HOURS, THE UNIT 1 REACTOR TRIPPED DUE TO A LOSS OF POWER ON THE RED INSTRUMENT BUS WHEN A CONTROL CIRCUIT DIODE IN THE BUS INVERTER FAILED. THE LOSS OF POWER RESULTED IN AN INDICATED LOW LEVEL ALARM IN THE "B" STEAM GENERATOR AND CREATED A STEAM FLOW/FEED FLOW MISMATCH CONDITION. THE COINCIDENCE OF STEAM FLOW/FEED FLOW MISMATCH AND LOW LEVEL TRIPPED THE REACTOR. POWER WAS RESTORED TO THE BUS APPROXIMATELY THREE MINUTES AFTER IT WAS LOST. WHILE THE RED INSTRUMENT BUS WAS DEENERGIZED, MANUAL CONTROL OF PRESSURIZER PRESSURE AND THE "A" ELECTRIC MOTOR-DRIVEN AUXILIARY FEEDWATER PUMP DISCHARGE PRESSURE CONTROL VALVE WAS NECESSARY TO MAINTAIN THE DESIRED PLANT CONDITIONS. ONE SOURCE RANGE AND AN INTERMEDIATE RANGE NUCLEAR FLUX INSTRUMENT FAILED AS DID THE OTHER INTERMEDIATE RANGE WHICH IS POWERED FROM THE BUS. ONE OF THE INTERMEDIATE RANGE INSTRUMENTS WAS RETURNED TO SERVICE PRIOR TO STARTUP OF THE UNIT.

FORM 30 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
266	1986	006	0	8612300366	202333	11/28/86

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

COMMENTS
STEP 4: MODEL 253-1-103.

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

REFERENCE LERS:
1 266/86-001 2 266/86-003 3 301/86-003

ABSTRACT
POWER LEVEL - 100%. AT 0752 HOURS ON NOVEMBER 28, 1986 WHILE UNIT 1 WAS OPERATING AT 100% POWER, A 2.5 SECOND TURBINE" RUNBACK TO APPROXIMATELY 95% POWER WAS EXPERIENCED. THE RUNBACK WAS DUE TO A MOMENTARY LOSS OF POWER ON THE WHITE INSTRUMENT BUS WHICH OCCURRED WHILE THE INSTRUMENT BUS NORMAL POWER SUPPLY INVERTER WAS BEING TRANSFERRED TO THE SPARE INVERTER. THE REACTOR WAS RETURNED TO 100% POWER AT 0800 HOURS. AN EVALUATION IS BEING PERFORMED TO DETERMINE THE FEASIBILITY OF PROVIDING A BUFFER BETWEEN THE INVERTER AND NEW COMPUTER LOADS WHICH ARE CAUSING VOLTAGE HARMONICS ON THE INSTRUMENT BUS. THE HARMONICS ARE CAUSING THE INVERTER PROTECTIVE CIRCUITS TO MOMENTARILY INTERRUPT OUTPUT POWER WHEN TRANSFERS OF THIS TYPE ARE MADE.

FORM 31 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
266	1987	004	1	8711300155	207319	05/15/87

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

COMMENTS
STEP 2: TYPE LC-25. STEP 6: STYLE NUMBER 130RF-400. STEP 1: CAUSE AX - MODIFICATION WORK TO UPGRADE AN APPENDIX R SRM TO MEET REG GUIDE 1.97. STEPS 8,14,19: MODEL NUMBER 125CTT 10 KVA.

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.

ABSTRACT
POWER LEVEL - 000%. ON MAY 15, 1987, WITH UNIT 1 AND UNIT 2 SHUT DOWN, THE STATION BATTERY (D05) BREAKER WAS OPENED TO ISOLATE THE STATION BATTERY FOR CELL REPLACEMENT. WHEN THE BATTERY (D05) BREAKER WAS OPENED, THE BATTERY CHARGER (D07) CAUSED A VOLTAGE SPIKE ON THE DC BUS (D01). THE VOLTAGE SPIKE AFFECTED THE ASSOCIATED INSTRUMENT BUS POWER SUPPLY INVERTERS (1DY01 AND 2DY01) FOR BOTH UNITS AND THE STANDBY (SWING) INVERTER DYOA. THIS INITIATED A REACTOR PROTECTION SYSTEM ACTUATION IN BOTH UNITS. THE VOLTAGE OSCILLATION WAS CLEARED WITHIN 10 SECONDS BY MANUAL RECLOSURE OF THE BATTERY BREAKER. THE LOSS OF VOLTAGE ON THE UNIT 1 RED INSTRUMENT BUS RESULTED IN A 2/4 POWER RANGE REACTOR TRIP SIGNAL FROM CHANNELS N41 AND N43. N41 TRIPPED WHEN ITS POWER SUPPLY WAS DEENERGIZED. N43 WAS IN TRIP DUE TO MODIFICATION WORK. IT ALSO RESULTED IN A 1/2 INTERMEDIATE RANGE REACTOR TRIP SIGNAL. THE VOLTAGE PERTURBATION ON THE UNIT 2 RED INSTRUMENT BUS RESULTED IN A 1/2 IR N35 REACTOR TRIP SIGNAL AS WELL AS A 1/2 SOURCE RANGE N31 REACTOR TRIP SIGNAL. ALL REACTOR PROTECTION SYSTEM CIRCUITRY FUNCTIONED AS DESIGNED DURING THIS EVENT. AN INVESTIGATION INTO THE CIRCUMSTANCES OF THIS EVENT HAS REVEALED THAT WITHOUT THE FILTERING EFFECT OF THE BATTERY, THE BATTERY CHARGES WILL PRODUCE VOLTAGE PERTURBATIONS ON THEIR RESPECTIVE LOADS (THE INSTRUMENT BUSES).

FORM 32 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
269	1986	004	0	8604230170	198909	03/12/86

DOCKET:269 OCONEE 1 TYPE:PWR
REGION: 2 NSSS:BW
ARCHITECTURAL ENGINEER: DKBE
FACILITY OPERATOR: DUKE POWER CO.
SYMBOL: DPC

COMMENTS
STEP 2: EFF IX - POWER TRANSIENT. STEP 5: OPERATOR MOVED FUEL WITH ONE SOURCE RANGE DETECTOR INOPERABLE. OTHER REPORTABILITY - 50.73(A)(2)(I)(B).

REPORTABILITY CODES FOR THIS LER ARE:
21 OTHER: Voluntary report, special report, Part 21 report, etc.

ABSTRACT
POWER LEVEL - 000%. ON MARCH 12, 1986, AT 1330 HOURS, WITH UNIT 1 SHUTDOWN AND REFUELING ACTIVITIES IN PROGRESS, THE REFUELING SENIOR REACTOR OPERATOR DISCOVERED THAT THE NUCLEAR INSTRUMENTATION CHANNEL NI-1 WAS NOT OPERATING. THIS EVENT, WHICH BEGAN AT 1115 HOURS, CONSTITUTES A VIOLATION OF TECHNICAL SPECIFICATION 3.8.2, WHICH REQUIRES CONTINUAL MONITORING OF CORE SUBCRITICAL NEUTRON FLUX BY AT LEAST TWO NEUTRON FLUX MONITORS WHENEVER CORE GEOMETRY IS BEING CHANGED. CONTRARY TO THIS REQUIREMENT, EIGHT FUEL ASSEMBLIES WERE INSERTED INTO THE CORE WHILE NI-1 WAS INOPERABLE. UPON THE DISCOVERY OF THE LOSS OF SIGNAL FROM NI-1, REFUELING ACTIVITIES WERE IMMEDIATELY STOPPED. SUBSEQUENT CORRECTIVE ACTIONS INCLUDED AN ASSESSMENT OF CORE GEOMETRY CHANGES WHILE NI-1 WAS INOPERABLE, A DETERMINATION OF THE CAUSE OF THE LOSS OF NI-1 SIGNAL, AND ACTION TO RETURN NI-1 TO SERVICE. REFUELING ACTIVITIES WERE RESUMED AFTER THE REFUELING REACTOR OPERATOR HAD BEEN REINSTRUCTED ON PROPER ADHERENCE TO THE REFUELING PROCEDURE REQUIREMENTS. THE CAUSE OF THIS EVENT WAS DETERMINED AS PERSONNEL ERROR BECAUSE THE REFUELING REACTOR OPERATOR FAILED TO MAINTAIN FULL REQUIREMENTS OF THE REFUELING PROCEDURE WHILE INSTRUCTING THE EXECUTION OF FUEL MOVEMENT PROCEDURE STEPS. THE HEALTH AND SAFETY OF THE PUBLIC WERE NOT AFFECTED BY THIS INCIDENT.

FORM 33 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
271	1980	004	0	8002080489	154604	01/09/80

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 L5R6-70-OVST4626.

ABSTRACT
POWER LEVEL - 095%. CAUSE - POWER SUPPLY FAN FAILURE. DURING NORMAL OPERATION, ALL ROD POSITION INDICATION WAS LOST, ACCOMPANIED BY RPIS INOP ALARM, ALL ROD DRIFT ALARMS, RWM ROD BLOCK AND OVERTRAVEL ALARM. POSITION INDICATION RETURNED FIVE MINUTES LATER. THIS SEQUENCE WAS REPEATED SIX MORE TIMES AT FIVE AT SIX MINUTE INTERVALS, WITH EACH OCCURRENCE LASTING FIVE TO SEVEN MINUTES. THE COOLING FAN IN THE POWER SUPPLY HAD FAILED CAUSING THE POWER SUPPLY TO OVERHEAT AND FAIL. WHEN THE POWER SUPPLY COOLED, IT WOULD REENERGIZE. THE IMMEDIATE SOLUTION WAS TO SLIDE THE POWER SUPPLY OUT OF THE PANEL AND REMOVE THE TOP COVER. ATMOSPHERE COOLING WAS SUFFICIENT TO PREVENT TRIPPING. THE FAN WAS SUBSEQUENTLY REPLACED.

FORM 34 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
271	1984	018	0	8409170568	191249	08/01/84

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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 3: CAUSE SE - RETURNING LENS TO NORMAL SUPPLY.

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

ABSTRACT
POWER LEVEL - 000%. ON 8-1-84, WITH THE REACTOR SHUT DOWN AND WHILE SHIFTING 480V VITAL BUSES, A VOLTAGE TRANSIENT CAUSED AN INADVERTENT HI-HI TRIP FROM APRM 'C' WHICH RESULTED IN A REACTOR SCRAM. AFTER VERIFYING THE CAUSE, THE SCRAM WAS RESET.

FORM 35 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
271	1986	011	0	8607140396	200211	06/10/86

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

COMMENTS
STEP 1: CAUSE AX - MAINTENANCE ON RPS BUS B NORMAL POWER SUPPLY.

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

ABSTRACT
POWER LEVEL - 000%. ON 6-10-86 AT 2041 HOURS WHILE THE PLANT WAS SHUTDOWN AND PERFORMING RECIRCULATION PUMP TESTING THE REACTOR PROTECTIVE SYSTEM (RPS) ALTERNATE POWER SUPPLY TRIPPED CAUSING A HALF SCRAM ON THE "B" CHANNEL. CONCURRENT WITH THIS AN AUTO SCRAM SIGNAL WAS RECEIVED ON THE "A" CHANNEL AS A RESULT OF A NEUTRON MONITORING SYSTEM A-1 TRIP. THE A-1 TRIP IS ATTRIBUTED TO AN IRM GOING "HI-HI" DUE TO NOISE IN THE CIRCUIT. THIS ADDITIONAL HALF SCRAM RESULTED IN A FULL SCRAM SIGNAL BEING RECEIVED. THERE WERE NO ADVERSE SAFETY CONSEQUENCES AS A RESULT OF THIS EVENT AND ALL SYSTEMS WERE RETURNED TO THEIR NORMAL CONDITIONS. ALTERNATE RPS SUPPLY VOLTAGE STABILITY HAS BEEN DETERMINED TO BE THE ROOT CAUSE OF THIS EVENT.

FORM 36 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
271	1987	014	0	8710140034	206713	09/08/87

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 VX - MAINTENANCE. STEPS 6,12: CAUSE SX - INADEQUATE TRAINING.

WATCH-LIST CODES FOR THIS LER ARE:
36 INADEQUATE TRAINING

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

ABSTRACT
POWER LEVEL - 000%. EVENT 1: AT 2050 HOURS ON 09/08/87 WITH THE REACTOR IN THE COLD SHUTDOWN CONDITION, THE FEEDER BREAKER (BU*) FOR 480 VAC BUS 8 (SWGR*) WAS OPENED, TO RETURN BUS 8 TO ITS NORMAL SOURCE OF POWER, AND A FULL REACTOR SCRAM OCCURRED. BUS 8 SUPPLIES POWER TO MOTOR CONTROL CENTER 8A (MCC) (SWGR*) WHICH IS THE POWER SOURCE FOR "A" REACTOR PROTECTION SYSTEM (RPS) (JE*) MG (*MG) SET AND IN TURN POWERS "A" RPS. LOSS OF POWER TO EITHER RPS (A OR B) WILL CAUSE A HALF-SCRAM. AT 2053, THE SCRAM WAS RESET AND SYSTEMS WERE RETURNED TO NORMAL. EVENT 2: AT 0257 HOURS ON 09/10/87 WITH THE REACTOR IN THE COLD SHUTDOWN CONDITION THE FEEDER BREAKER (BU*) FOR MOTOR CONTROL CENTER 8B(MCC) (SWGR*) WAS OPENED, TO FACILITATE TESTING THE BREAKER, AND A FULL REACTOR SCRAM OCCURRED. DURING THIS EVENT, THE "A" RPS WAS POWERED FROM ITS ALTERNATE POWER SUPPLY; MCC 8B. AT 0307, THE SCRAM WAS RESET AND SYSTEMS WERE RETURNED TO NORMAL. BOTH EVENTS: FOR BOTH PLANNED EVOLUTIONS, OPERATIONS INTENTIONALLY REMOVED POWER FROM "A" RPS AND THE EXPECTED HALF-SCRAM OCCURRED. THE FULL SCRAM WAS UNANTICIPATED. OPERATIONS INVESTIGATION, FOLLOWING THE EVENT ON 09/10/87 REVEALED THAT THE AVERAGE POWER RANGE MONITOR SYSTEM (APRM)(*JE) CHANNELS A AND C ALSO SHARE THEIR LOCAL POWER RANGE MONITOR (LPRM)(DETI) INPUTS WITH CHANNELS D AND F.

FORM 37 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
272	1981	100	0	8112010515	170100	10/19/81

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DOCKET:272 SALEM 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: PSEG
FACILITY OPERATOR: PUBLIC SERVICE ELECTRIC & GAS CO.
SYMBOL: PEG

ABSTRACT
WHILE PREPARING FOR A STARTUP, WITH THE TRIP BREAKERS CLOSED, THE NEUTRON LEVEL AND STARTUP RATE METERS FOR THE INTERMEDIATE RANGE NUCLEAR INSTRUMENTATION, CHANNEL 1, WERE OBSERVED SPIKING FROM 0 TO FULL SCALE. THE CHANNEL WAS DECLARED INOPERABLE. THE CAUSE OF THE SPIKING WAS A FAILED HIGH-VOLTAGE POWER SUPPLY. ALL CABLES AND CONNECTORS WERE TESTED SATISFACTORILY AND THE TRIP BREAKERS WERE OPENED. SUBSEQUENTLY, THE HIGH-VOLTAGE POWER SUPPLY WAS REPLACED, PROPERLY CALIBRATED, AND TESTED SATISFACTORILY.

FORM 38 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
272	1981	103	0	8112010490	170252	10/25/81

DOCKET:272 SALEM 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: PSEG
FACILITY OPERATOR: PUBLIC SERVICE ELECTRIC & GAS CO.
SYMBOL: PEG

ABSTRACT
THE CONTROL OPERATOR NOTICED THAT THE INTERMEDIATE RANGE DETECTOR N-36 HAD FAILED. THE LEVEL TRIP SWITCH FOR THIS CHANNEL WAS PLACED IN THE BYPASS POSITION. THE CAUSE WAS A FAILURE OF THE DETECTOR HIGH VOLTAGE POWER SUPPLY. THE POWER SUPPLY WAS REPLACED AND TESTED SATISFACTORILY.

FORM 39 LER SCSS DATA 08-30-91.

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
272	1991	008	0	9103200417	221220	02/17/91

DOCKET:272 SALEM 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: PSEG
FACILITY OPERATOR: PUBLIC SERVICE ELECTRIC & GAS CO.
SYMBOL: PEG

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 - 000%. ON 2/17/91 AT 0530 HOURS, A REACTOR PROTECTION SYSTEM (RPS) SIGNAL FROM THE NUCLEAR INSTRUMENTATION SYSTEM (NIS) WAS RECEIVED. THE OVERHEAD ANNUNCIATION, INDICATING THE CAUSE OF THE RPS SIGNAL, WAS "IR FLUX HIGH". THE UNIT WAS IN COLD SHUTDOWN (MODE 5) IN SUPPORT OF ITS NINTH REFUELING OUTAGE. THE ROOT CAUSE OF THIS EVENT IS PERSONNEL ERROR AS ATTRIBUTED TO INATTENTION TO DETAIL. AT THE TIME OF THE EVENT, THE 1N32 SOURCE RANGE NIS CHANNEL CABLE REPLACEMENT WAS IN PROGRESS. IN SUPPORT OF THIS WORK, THE SUBJECT CHANNEL'S RPS FUNCTIONS ARE BLOCKED AND THEN THE CHANNEL IS DEENERGIZED BY REMOVING ITS FUSES. THE MAINTENANCE-I&C TECHNICIAN, PERFORMING THIS WORK, HAD INADVERTENTLY PULLED THE FUSE FOR THE 1N36 INTERMEDIATE RANGE NIS CHANNEL INSTEAD OF THE 1N32 FUSE. THIS RESULTED IN THE RPS ACTUATION BY SATISFYING THE 1 OUT OF 2 SOLID STATE PROTECTION SYSTEM (SSPS) LOGIC WHEN THE HIGH FLUX BISTABLE FAILED TO ITS SAFE POSITION ON LOSS OF POWER. THE TECHNICIAN INVOLVED DID NOT APPLY GOOD WORK PRACTICES. HE DID NOT PERFORM A "SELF CHECK" TO ENSURE THAT HE WOULD REMOVE THE CORRECT FUSE. THE 1N32 CHANNEL DRAWER IS LOCATED APPROXIMATELY 6' ABOVE THE FLOOR, DIRECTLY ABOVE THE 1N36 CHANNEL DRAWER. THE FUSES OF EACH CHANNEL ARE LOCATED ON THE DRAWER OUTSIDE FACE IN THE LOWER LEFT SECTION. THIS EVENT HAS BEEN REVIEWED BY MAINTENANCE DEPARTMENT MANAGEMENT.

FORM 40 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
275	1983	010	0	8306210078	183398	05/14/83

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

COMMENTS
STEP 3: COMP. XA = RADIATION MONITOR ALARMS, SEISMIC ALARMS, AND FIRE DETECTION ALARMS ; ISYS ZY - IN IG IF.

REFERENCE LERS:
1 275/83-008

ABSTRACT
PRIOR TO FUEL LOAD, POWER TO ALL MAIN CONTROL ROOM ANNUNCIATORS WAS LOST DURING CONSTRUCTION ACTIVITY IN THE ANNUNCIATOR CABINETS. AS A RESULT, ALARM STATUS FOR VARIOUS RADIATION MONITORS, SEISMIC MONITORING INSTRUMENTATION AND FIRE DETECTION INSTRUMENTATION WAS LOST FOR A PERIOD OF 32 MINUTES. ALL APPLICABLE TECHNICAL SPECIFICATION ACTION STATEMENTS WERE SATISFIED AS LISTED IN SUPPLEMENTAL INFORMATION. REPORTABLE PER TECH SPECS SECTION 6.9.1.13.B. CONSTRUCTION ELECTRICIAN INADVERTENTLY TOUCHED HOT WIRE TO GROUND, SHORT CIRCUITING THE PANEL. POWER WAS RESTORED AND THE ANNUNCIATOR RETURNED TO SERVICE. THE WORKER INVOLVED WAS ADMONISHED REGARDING THE POSSIBLE CONSEQUENCES OF HIS ACTIONS AND TO PAY MORE CAREFUL ATTENTION TO HIS WORK ACTIVITIES. CONSTRUCTION WORKERS ON VITAL PLANT EQUIPMENT WILL RECEIVE ADDITIONAL TRAINING PRIOR TO WORK.

FORM 41 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
275	1983	024	0	8311220228	187412	10/07/83

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

COMMENTS
STEP 3: ISYS SW = UNKNOWN AREAS.

REFERENCE LERS:
1 275/83-010

ABSTRACT
PRIOR TO FUEL LOAD, POWER TO ALL MAIN CONTROL ROOM ANNUNCIATORS, WAS LOST DURING CONSTRUCTION ACTIVITY IN THE ANNUNCIATOR CABINETS. AS A RESULT, ALARM STATUS FOR VARIOUS RADIATION MONITORS, SEISMIC MONITORING, AND FIRE DETECTION INSTRUMENTATION WAS LOST FOR A PERIOD OF APPROXIMATELY 5 MINUTES. ALL APPLICABLE TECH SPEC ACTION STATEMENTS WERE SATISFIED AS LISTED IN SUPPLEMENTAL INFORMATION. A SIMILAR EVENT WAS REPORTED IN LER 83-010. REPORTABLE PER TECH SPEC SECTION 6.9.1.13B. CONSTRUCTION ELECTRICIAN INADVERTENTLY GROUNDED THE HOT WIRE, SHORT-CIRCUITING THE PANEL. POWER WAS RESTORED AND THE ANNUNCIATOR RETURNED TO SERVICE. PERSONNEL INVOLVED IN ANNUNCIATOR CABINET WORK WILL RECEIVE TRAINING IN THE IMPORTANCE OF PREVENTING RECURRENCE OF THIS EVENT.

FORM 42 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
275	1985	033	0	8512100697	197543	10/25/85

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

COMMENTS
STEP 4: COMP MEI - COMPARATOR STYLE 4111082-001; STEPS 7&8: COMP RLX - RELAY MONITORING RCP BREAKER POSITION.

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

REFERENCE LERS:
1 275/85-012 2 275/85-015

ABSTRACT
POWER LEVEL - 100%. AT 1321 PDT, 10-25-85 WHILE IN MODE 1 AT 100% POWER, AUTOMATIC REACTOR AND TURBINE TRIPS OCCURRED. TWO PLANT TECHNICIANS WERE RESTORING THE BORIC ACID STORAGE TANK LEVEL INDICATING/ALARM CIRCUIT. WHEN A FUSE WAS BEING INSTALLED WHILE RETURNING THE CIRCUIT TO OPERATION, A SHORTED CAPACITOR IN A COMPARATOR MODULE CREATED A MOMENTARY SHORT IN A 120V POWER SUPPLY BUS CIRCUIT. THE RESULTANT REDUCTION IN INVERTER VOLTAGE OUTPUT CAUSED A RELAY IN THE SOLID STATE PROTECTION RACKS, WHICH MONITORS RCP BREAKER POSITION, TO MOMENTARILY DROP OUT. SINCE THE UNIT WAS ABOVE P-8, ONLY 1 RCP BREAKER OPEN SIGNAL WAS REQUIRED TO INITIATE A REACTOR TRIP. THE COMPARATOR MODULE WAS REPLACED AND THE UNIT WAS RETURNED TO POWER IN ACCORDANCE WITH PROCEDURES. TO PREVENT RECURRENCE, PG&E IS SEEKING EXPEDITIOUS NRC APPROVAL OF A LICENSE AMENDMENT REQUEST TO CHANGE THE RCP BREAKER POSITION TRIP LOGIC. THIS WILL PREVENT A SINGLE FAILURE, SUCH AS THE FAILED COMPARATOR IN THIS CASE, FROM PUTTING THE PLANT THROUGH AN UNNECESSARY TRANSIENT.

FORM 43 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
277	1987	011	0	8708170111	205725	07/10/87

DOCKET:277 PEACH BOTTOM 2 TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: PHILADELPHIA ELECTRIC CO.
SYMBOL: PEC

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 - 000%. ON JULY 10, 1987, AT 0905 HOURS, A PRIMARY CONTAINMENT ISOLATION SYSTEM (PCIS) GROUP IIB ISOLATION OCCURRED WHILE OPERATING THE RESIDUAL HEAT REMOVAL SYSTEM IN THE SHUTDOWN COOLING MODE. THIS ACTION OCCURRED AS THE RESULT OF A BLOWN FUSE (10A-F2B) WHICH CAUSED A LOSS-OF-POWER TO THE SYSTEM IIB RESIDUAL HEAT REMOVAL SYSTEM LOGIC BUS. THE LOSS-OF-POWER RESULTED IN DE-ENERGIZATION OF RELAY 10-K114B AND SUBSEQUENT CLOSURE OF THE SHUTDOWN COOLING MODE SUCTION VALVES. THERE WERE NO ADVERSE CONSEQUENCES AS A RESULT OF THIS EVENT WHICH WOULD HAVE AFFECTED PLANT SAFETY. THERE WAS NO OBSERVABLE CHANGE IN REACTOR COOLANT TEMPERATURE. THE ROOT CAUSE FOR THE BLOWN FUSE WAS NOT DETERMINED. AS CORRECTIVE ACTIONS, THE FUSE WAS REPLACED AN THE ALARMS AND PCIS ISOLATION SIGNAL WERE RESET. THE SHUTDOWN COOLING ODE WAS REESTABLISHED BY 0930 HOURS.

FORM 44 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
277	1987	032	0	8803140361	208490	11/10/87

DOCKET:277 PEACH BOTTOM 2 TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: PHILADELPHIA ELECTRIC CO.
SYMBOL: PEC

COMMENTS
STEP 42: COMP XS - TRANSFERR SWITCH.

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

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

REFERENCE LERS:
1 277/85-023

ABSTRACT
POWER LEVEL - 000%. ON 11/10/87 WITH UNIT 2 IN THE COLD SHUTDOWN CONDITION IT WAS DETERMINED THAT ELECTRICAL CABLES INSTALLED IN THE CABLE SPREADING ROOM AS THE RESULT OF A PLANT MODIFICATION DID NOT CONFORM TO THE SEPARATION CRITERIA AS IDENTIFIED IN THE PEACH BOTTOM ATOMIC POWER STATION UPDATED FSAR SECTIONS 7.1.6.1 AND 8.4. THE MODIFICATION INVOLVED THE REMOVAL OF THE YARWAY TEMPERATURE-COMPENSATED REFERENCE COLUMN, REROUTING OF THE ASSOCIATED REACTOR LEVEL MEASUREMENT INSTRUMENT SENSING LINES AND THE ADDITION OF REACTOR PRESSURE COMPENSATION TO THE REACTOR WATER LEVEL MEASUREMENT AT PBAPS UNIT 2. THERE WERE THREE CAUSES OF THIS EVENT: 1) ENGINEERING DESIGN PERSONNEL FAILED TO PROVIDE AN ADEQUATE DESIGN TO CONSTRUCTION PERSONNEL, 2) DESIGN DOCUMENTS WERE INADEQUATE FOR FIELD INSTALLATION PERSONNEL AND 3) QUALITY CONTROL FAILED TO IDENTIFY THE NONCONFORMING CONDITION. AS CORRECTIVE ACTIONS, THE CABLES HAVE BEEN REROUTED OR WRAPPED WITH A FIRE RETARDANT BARRIER. AS ACTIONS TO PREVENT RECURRENCE, TRAINING WAS HELD FOR THE PECO ENGINEERING DESIGN GROUP, PECO PBAPS QUALITY CONTROL GROUP AND THE PECO PBAPS CONSTRUCTION GROUP WHICH REINFORCED THE ROUTING AND SEPARATION CRITERIA WHICH MUST BE INCLUDED IN THE APPLICABLE DESIGN AND INSTALLATION. IF THIS DEFICIENCY HAD REMAINED UNCORRECTED, AN INTERNALLY GENERATED ELECTRICAL FAULT IN THE AFFECTED CABLES MAY AFFECT OPERATIONS OF SEVERAL PLANT SYSTEMS.

FORM 45 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
277	1988	020	0	8809010336	210285	07/29/88

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DOCKET:277 PEACH BOTTOM 2 TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: PHILADELPHIA ELECTRIC CO.
SYMBOL: PEC

COMMENTS
STEP 7: MODEL NO. AM-4.16-250.

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.

REFERENCE LERS:
1 277/86-010

ABSTRACT
POWER LEVEL - 000%. ON JULY 29, 1988 AT 1858 HOURS, THE CAPACITORS WHICH CONNECT THE 500KV #1 BUS TIE LINE TO THE 'A' PHASE POTENTIAL TRANSFORMER FAILED. THIS FAILURE RESULTED IN A FIRE OF THE POTENTIAL TRANSFORMER AT THE NORTH SUBSTATION AND A VOLTAGE DISTURBANCE WHICH ULTIMATELY RESULTED IN SEVERAL ENGINEERED SAFETY FEATURE ACTUATIONS ON UNITS 2 AND 3 AND A PARTIAL LOSS OF TELEPHONE COMMUNICATIONS AT PBAPS. THE EVENT IS REPORTABLE UNDER 50.73(A)(2)(IV). THE CAUSE OF THE CAPACITORS TO FAIL WAS DUE TO NORMAL WEAR. ALL SYSTEMS WERE RETURNED TO NORMAL BY 2103 HOURS. THE POTENTIAL TRANSFORMER WAS REPLACED AND RETURNED TO SERVICE ON AUGUST 2, 1988. THE DURATION OF THE EVENT WAS 125 MINUTES. THERE WERE NO ADVERSE CONSEQUENCES OF THIS EVENT WHICH WOULD HAVE AFFECTED PLANT SAFETY. ALL UNIT 2 AND 3 RPS AND PCIS LOGICS FUNCTIONED AS EXPECTED. DURING THE MONTH PRIOR TO THE EVENT, THE POTENTIAL TRANSFORMER HAD BEEN IDENTIFIED AS GIVING ERRONEOUS READINGS. DUE TO THE HIGH LOAD DEMAND, THE TRANSFORMER UNITS WERE NOT TAKEN OUT OF SERVICE FOR INSPECTION. THEREFORE, NO ACTION TO PREVENT RECURRENCE WILL BE TAKEN.

FORM 46 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
280	1984	001	1	8504290512	196193	01/06/84

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

COMMENTS
STEP 4: CAUSE CODE IX - POWER SURGE; STEP 9: CAUSE CODE LX - UNDERCOMPENSATED.

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

ABSTRACT
POWER LEVEL - 100%. ON 1-6, A REACTOR TRIP OCCURRED AS A RESULT OF AN OVER TEMPERATURE DELTA-T (OT DELTA T) SIGNAL. PLANT PARAMETERS DID NOT INDICATE A VALID OT DELTA T CONDITION. AT THE TIME OF THE EVENT, INSTRUMENT TECHNICIANS WERE PERFORMING A PERIODIC TEST WHICH REQUIRED THE CH. II OT DELTA T BISTABLES TO BE IN THE TRIP MODE, AND MAINTENANCE WAS BEING PERFORMED ON THE PLANT GAITRONICS (P.A.) SYSTEM. THE GAITRONICS SYSTEM IS POWERED FROM THE UNIT I VITAL BUS I. WHEN THE GAITRONICS WAS RE-ENERGIZED, AN APPARENT POWER SURGE OCCURRED IN THE GAITRONICS SYSTEM. THE POWER SURGE IS BELIEVED TO HAVE INDUCED A VOLTAGE TRANSIENT IN VITAL BUS I WHICH RESULTED IN TRIPPING THE RELAYS FOR OT DELTA T REACTOR TRIP CH. I. SINCE CH. II WAS IN TRIP AT THE TIME IN ORDER TO SUPPORT PERFORMANCE OF P.T. 2.1, THE 2/3 MATRIX WAS COMPLETED AND AS A RESULT, A REACTOR TRIP OCCURRED. AN ANALYSIS HAS BEEN COMPLETED TO EVALUATE THE EFFECTS OF THE GAITRONICS SYSTEM ON THE VITAL INSTRUMENT BUS. MAINTENANCE PROCEDURES HAVE BEEN DEVELOPED AND HARDWARE MODIFICATIONS ARE BEING EVALUATED.

FORM 47 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
280	1984	002	0	8402220435	189161	01/18/84

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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

COMMENTS
STEP 8: COMPONENT CODE MSC - CROWBAR CIRCUIT

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

ABSTRACT
POWER LEVEL - 100%. THE UNIT WAS AT FULL POWER ON 1-18-84, AT 0834 HOURS, WHEN NUMEROUS CONTROL ROOM INDICATIONS AND ANNUNCIATORS STARTED BEHAVING ERRATICALLY. IT WAS DETERMINED THAT A VOLTAGE SPIKE WAS IN PROGRESS AND THE UNIT WAS MANUALLY TRIPPED TO PLACE IT IN A SAFE CONDITION. DURING CABLE REMOVAL FROM A NO LONGER USED HEAT TRACING BREAKER FOR A DESIGN CHANGE, A CABLE FELL OUT OF AN ADJACENT BREAKER BECAUSE OF AN APPARENT LOOSE SCREW. THIS ADJACENT BREAKER WAS THE FEEDER FOR THE SEMI VITAL BUS. THE LOOSE CABLE BEGAN ARCING, AND THIS WAS THE CAUSE OF THE ERRATIC INDICATIONS. THE SEMI VITAL BUS BREAKER WAS OPENED FOR ABOUT ONE MINUTE SO THE LOOSE CABLE COULD BE RECONNECTED.

FORM 48 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
281	1982	022	0	8206010218	173687	04/13/82

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DOCKET:281 SURRY 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
SYMBOL: VEP

ABSTRACT
THE NUCLEAR POWER RANGE INSTRUMENT 44 (N44) PANEL WAS AUTOMATICALLY DE-ENERGIZED BY IT'S PROTECTION CIRCUIT. PLANT OPERATION WAS CONTINUED AS PER TECH SPEC TABLE 3.7-1. THIS EVENT IS REPORTABLE PER TECH SPEC 6.6.2.3(2). A VOLTAGE SURGE ON VITAL BUS 4, CAUSED BY LIGHTNING ARRESTOR FAILURE AND DIFFERENTIAL LOCKOUT OF #2 AUTO-TIE TRANSFORMER, RESULTED IN THE DE-ENERGIZATION OF THE N44 POWER SUPPLY. THE POWER SUPPLY WAS RESTORED, AND N-44 WAS RETURNED TO SERVICE AS PER PT 1.2. THE #2 AUTO-TIE TRANSFORMER WAS RETURNED TO SERVICE FOLLOWING REPLACEMENT OF THE FAILED LIGHTNING ARRESTOR.

FORM 49 LER SCSS DATA. 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
281	1984	009	0	8405210244	189706	04/15/84

DOCKET:281 SURRY 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
SYMBOL: VEP

COMMENTS
STEP 2: COMPONENT CODE MEI-MULTIMETER, SYSTEM ZX=TEST EQUIPMENT

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

ABSTRACT
POWER LEVEL - 002%. AT 1607 ON 4-15-84 FOLLOWING A MAINTENANCE OUTAGE, UNIT 2 WAS AT 2% REACTOR POWER WHEN A REACTOR TRIP OCCURRED AS A RESULT OF AN INTERMEDIATE RANGE (NI-35) HIGH FLUX TRIP. PLANT PARAMETERS DID NOT INDICATE A VALID HIGH FLUX TRIP. AN ELECTRICIAN WAS CHECKING FOR CONTINUITY ACROSS THE SWITCH FOR TV-SS-201A WHEN AN ARC OCCURRED RESULTING IN A SPIKE ON VITAL BUS 1 WHICH CAUSED THE SPIKE ON NI-35. THE MULTIMETER WAS SELECTED TO RESISTANCE INSTEAD OF VOLTAGE.

FORM 50 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
281	1985	010	1	8602140213	198478	08/13/85

DOCKET:281 SURRY 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
SYMBOL: VEP

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

ABSTRACT
POWER LEVEL - 099%. ON AUGUST 13, 1985 WITH POWER STABLE AT 99.5% AND NO MAJOR PLANT EVOLUTIONS IN PROGRESS, UNIT 2 EXPERIENCED A TURBINE RUNBACK TO APPROXIMATELY 48% POWER. THIS EVENT WAS INITIATED FROM THE LOSS OF VITAL BUS 2-I, WHICH RESULTED IN A NUCLEAR INSTRUMENT SYSTEM (NIS) DROPPED ROD TURBINE RUNBACK. IN ORDER TO RESTORE POWER, VITAL BUS 2-I WAS CROSSTIED WITH ENERGIZED VITAL BUS 2-III. FOLLOWING THE EVENT, FEEDER BREAKER 24H11 FOR BUS 2H-1 AND THE FEEDER BREAKER TO VITAL BUS 2- I SOLA TRANSFORMER (4B) WERE FOUND TRIPPED. BOTH BUSES WERE EXAMINED FOR ELECTRICAL FAILURES AND NONE WERE FOUND. DURING THE UNIT 2 OUTAGE THAT FOLLOWED THIS EVENT, BREAKERS 24H11 AND 4B WERE REPLACED. IN ADDITION, BREAKERS 24H11 AND 24H16 WERE TESTED SATISFACTORILY AND SETTINGS WERE FOUND TO BE WITHIN SPECIFICATIONS. BREAKER 4B WAS EXAMINED AND NO PROBLEMS WERE FOUND.

FORM 51 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
281	1986	001	1	8606110716	199705	01/02/86

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DOCKET:281 SURRY 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
SYMBOL: VEP

COMMENTS
STEP 9: COMP XFMR - RESERVE STATION SERVICE TRANSFORMER.

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

ABSTRACT
POWER LEVEL - 100%. ON 1-2-86, AT 1458 HOURS, FOLLOWING AN AUTOMATIC TURBINE RUNBACK, NO. 2 EMERGENCY DIESEL GENERATOR (NO. 2 EDG) STARTED AS DESIGNED ON A LOSS OF "E" TRANSFER BUS. UNIT 2 EXPERIENCED A LOSS OF "E" TRANSFER BUS WHEN BREAKER 15E1 OPENED ON A PILOT WIRE DIFFERENTIAL LOCKOUT FROM "B" RESERVE STATION SERVICE TRANSFORMER. THIS WAS INITIATED DUE TO A FAILED STRESS CONE CONNECTION ON FEEDER BREAKER "252" WHICH SHORTED A CABLE TO GROUND. AN INVESTIGATION HAS FOUND IMPROPER INSTALLATION AS THE CAUSE OF THE STRESS CONE FAILURE.

FORM 52 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
281	1988	004	0	8805030238	209130	03/27/88

DOCKET:281 SURRY 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
SYMBOL: VEP

COMMENTS
STEP 1: COMP MSC - INDUCTOR. STEP 2: MODEL 120G10000FE. STEP 17: NO IDENTIFABLE CAUSE FOR LOW AUX FEED FLOW. STEP 22: MODEL 3 INCH-S350W-DD. $N/DP

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%. ON MARCH 27, 1988 AT 1621 HOURS, WITH UNIT 2 AT 100% REACTOR POWER, VITAL BUS (VB) (EIIS-ED) 2-III WAS DE-ENERGIZED DUE TO THE LOSS OF 2-III INVERTER (EIIS-INVT). A TURBINE RUNBACK WAS AUTOMATICALLY INITIATED DUE TO THE LOSS OF POWER TO THE POWER RANGE NUCLEAR INSTRUMENT NI-43 (EIIS-IG) WHICH IS POWERED FROM VB 2-III. ABNORMAL PROCEDURE AP-10.2, "LOSS OF VITAL BUS 1-III OR 2-III", WAS ENTERED AND AS REQUIRED BY THE PROCEDURE, THE REACTOR (EIIS-RCT) AND 'A' REACTOR COOLANT PUMP (RCP) (EIIS-P), WERE MANUALLY TRIPPED AT 1622 HOURS. APPROXIMATELY 30 SECONDS LATER, A HIGH STEAM FLOW/LOW REACTOR COOLANT SYSTEM (RCS) (EIIS-AB) TAVG SAFETY INJECTION (SI) (EIIS-BQ) OCCURRED. OPERATORS FOLLOWED APPROPRIATE PLANT PROCEDURES AND QUICKLY STABILIZED THE UNIT FOLLOWING THE REACTOR TRIP/SAFETY INJECTION. AN ENGINEERING EVALUATION OF THE INVERTER DETERMINED THAT AN INTERNAL INDUCTOR FAILED DUE TO AGE, THUS CAUSING A CURRENT SURGE WHICH BLEW THE FUSE AND TRIPPED THE AC OUTPUT BREAKER. ONE OF TWO OF THE STATION VITAL BUS INVERTERS PER UNIT HAVE BEEN REPLACED WITH AN UNINTERRUPTIBLE POWER SUPPLY. THE REMAINING TWO VITAL BUS INVERTERS (2-III AND 1-III) WILL BE REPLACED WITH UNINTERRUPTIBLE POWER SUPPLIES DURING THE UPCOMING REFUELING OUTAGES.

FORM 53 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
282	1980	009	1	8006300499	156030	03/10/80

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DOCKET:282 PRAIRIE ISLAND 1 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: FLPR
FACILITY OPERATOR: NORTHERN STATES POWER CO.
SYMBOL: NSP

ABSTRACT
POWER LEVEL - 100%. CAUSE - SPIKE ON INSTRUMENT BUS. DURING NORMAL OPERATION, NUCLEAR POWER RANGE CHANNEL 1N44 WAS INOPERABLE FOR A FEW MINUTES. IMMEDIATELY AFTER LOSS OF THE CHANNEL, ITS BISTABLES WERE PUT IN TRIP. REDUNDANT CHANNELS WERE OPERABLE. THE HIGH VOLTAGE POWER SUPPLY FOR THE DETECTOR "LATCHED UP" DUE TO A SPIKE ON THE YELLOW INSTRUMENT BUS. THIS IS CHARACTERISTIC OF THESE POWER SUPPLIES. REMOVAL AND REINSERTION OF THE POWER SUPPLY FUSES ALLOWED THE CIRCUITRY TO RESET.

FORM 54 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
285	1980	023	0	8010140447	160075	09/08/80

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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

COMMENTS
STEP 5: COMP RLX - SUPERVISORY RELAY.

ABSTRACT
POWER LEVEL - 100%. CAUSE - CRUD ON CONTACTS. DURING ROUTINE POWER OPERATIONS, THE "CPHS-A1 AUTO STANDBY" ANNUNCIATOR WENT INTO ALARM AND THE AMBER/SUPERVISORY LIGHT ASSOCIATED WITH THE 86A1/CPHS (CONTAINMENT PRESSURE HIGH SIGNAL) HAD EXTINGUISHED, THUS SIGNIFYING THAT POWER TO THE 86A1/CPHS LOCKOUT RELAY COIL HAD BEEN INTERRUPTED. A NORMALLY CLOSED SET OF CONTACTS (3-3T) OF THE CHANNEL "A" DERIVED SIGNAL CUTOFF SWITCH (CS/SPA) HAD ELECTRICALLY OPENED AND INTERRUPTED THE POWER FEED TO THE 86A1/CPHS RELAY, ITS ASSOCIATED SUPERVISORY LIGHT AND THE 86A1/CPHSS SUPERVISORY RELAY. THE CONTACTS WERE CLEANED AND BURNISHED AND THE PROBLEM WAS RESOLVED.

FORM 55 LER SCSS DATA 08-30-91.

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
293	1987	010	0	8711300163	207195	07/02/87

DOCKET:293 PILGRIM 1 TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: BOSTON EDISON CO.
SYMBOL: BEC

COMMENTS
STEP 3: CAUSE VX - MAINTENANCE.

WATCH-LIST CODES FOR THIS LER ARE:
14 ELECTROMAGNETIC INTERFERENCE

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

ABSTRACT
POWER LEVEL - 000%. ON JULY 2, 1987, AT 0530 HOURS, AN AUTOMATIC ACTUATION OF THE REACTOR PROTECTION SYSTEM (RPS) OCCURRED DUE TO ERRATIC OPERATION AND SUBSEQUENT SPURIOUS TRIP OF AVERAGE POWER RANGE MONITOR (APRM) "E". THE PLANT WAS IN A COLD CONDITION WITH THE REACTOR MODE SWITCH IN REFUEL AND ALL FUEL ASSEMBLIES REMOVED FROM THE REACTOR VESSEL. NO CONTROL RODS WERE WITHDRAWN AND THE REACTOR VESSEL HEAD WAS REMOVED. THE SPURIOUS TRIP OF APRM "E" INSERTED A HALF-SCRAM SIGNAL INTO CHANNEL A" OF THE RPS. THE CHANNEL "A" HALF-SCRAM SIGNAL COINCIDENT WITH AN EXISTING CHANNEL "B HALF-SCRAM RESULTED IN A FULL RPS REACTOR SCRAM TRIP SIGNAL. THE CAUSE OF THIS EVENT IS ATTRIBUTED TO A SPURIOUS TRIP OF APRM "E". ALTHOUGH THE CAUSE OF THE SPURIOUS TRIP COULD NOT BE ESTABLISHED WITH CERTAINTY, IT IS BELIEVED TO HAVE RESULTED FROM DISTURBANCE OF THE APRM CABLING AND CONNECTORS DURING EXTENSIVE UNDERVESSEL WORK THAT WAS IN PROGRESS AT THE TIME OF THIS EVENT. FOLLOWING THIS EVENT, IMMEDIATE ACTION WAS TAKEN TO PLACE APRM "E" IN BYPASS AND RESET THE RPS SCRAM SIGNAL. TESTING OF APRM "E" DID NOT IDENTIFY COMPONENT MALFUNCTION OR FAILURE. THE UNDERVESSEL WORK HAS NOW BEEN COMPLETED AND NO FURTHER OCCURRENCES OF SPURIOUS TRIPS OF APRM "E" HAVE BEEN OBSERVED.

FORM 56 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
295	1987	004	0	8703170276	203532	02/12/87

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

COMMENTS
STEP 1: CAUSE AY - LOW NOISE PREAMPLIFIER UPGRADE REPLACEMENT ACTIVITY.

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:
1 295/85-019

ABSTRACT
POWER LEVEL -.000%. ON FEBRUARY 12, 1987 AT 1520 HOURS WHILE TROUBLESHOOTING SOURCE RANGE NUCLEAR INSTRUMENTATION CHANNEL 1N31, THE INSTRUMENT POWER FUSES WERE REMOVED WITH THE LEVEL TRIP SWITCH IN THE NORMAL POSITION, RESULTING IN A REACTOR TRIP SIGNAL. SINCE THE REACTOR TRIP BREAKERS WERE CLOSED AT THE TIME, A REACTOR TRIP OCCURRED. THE ROOT CAUSE WAS DETERMINED TO BE A COMBINATION OF ERRORS IN THAT THE INITIAL CONDITIONS OF THE PROCEDURE IN USE WERE NOT RE-VERIFIED EACH TIME THE WORK WAS RESTARTED, THERE WAS MISCOMMUNICATION OF THE PLANT STATUS (I.E. RX TRIP BREAKERS CLOSED) AND INATTENTION TO THE EXPECTED RESULTS OF ACTIONS BEING TAKEN. THROUGHOUT THE EVENT, THE UNIT WAS IN COLD SHUTDOWN WITH ALL RODS FULLY INSERTED. THE IMPORTANCE OF THE STEPS TAKEN IN REGARDS TO TROUBLESHOOTING PLANT SYSTEMS AND RE-VERIFYING INITIAL CONDITIONS PRIOR TO RESUMING WORK WAS DISCUSSED WITH THE ENGINEER INVOLVED. A PREVIOUS OCCURRENCE OF THIS EVENT IS DOCUMENTED IN LER 295/85-019.

FORM 57 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
295	1988	005	0	8806070261	209455	02/24/88

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

COMMENTS
STEP 1: FAILED TO REPORT SLUGGISHNESS OF VALVE 1LCV-FW-520. STEP 7: ISYS SW - UNKNOWN STRUCTURAL AREA. STEP 9: CAUSE XX - PEN FAILED TO INK. STEP 10: TYPE 2625. $NL/EPT/1. REM: OPERATORS DISCOVERED SLUGGISH VALVE RESPONSE BUT DID NOT INITIATE CORRECTIVE ACTION.

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:
1 295/85-005 2 295/88-004

ABSTRACT
POWER LEVEL - 049%. AT APPROXIMATELY 1000 HOURS ON FEBRUARY 24, 1988, ZION UNIT 1 TRIPPED FROM 49% POWER. THE TECHNICAL STAFF HAD BEEN PERFORMING LOW PRESSURE STEAM POPPET TESTING ON 1B FEEDWATER (FW) PUMP PER TECH STAFF SPECIAL PROCEDURE (TSSP) 87-29. THE IMMEDIATE CAUSE OF THE TRIP WAS HIGH STEAM GENERATOR LEVEL CAUSED BY SLOW RESPONSE OF THE 1C FEED REGULATING VALVE AND ITS INABILITY TO FOLLOW THE SWING IN FW HEADER PRESSURE WHEN 1B FW PUMP WAS TRIPPED OFF AS PART OF THE POPPET TEST. CONTRIBUTING FACTORS WERE FAILURE OF TSSP 81-29 TO ANTICIPATE THE MAGNITUDE OF THE EFFECT OF FW PUMP SPEED ON FW FLOW TO THE STEAM GENERATORS, FALSE ALARMS ON THE ANNUNCIATOR PANEL DUE TO A SHORT CIRCUIT WHICH DIVERTED THE OPERATOR'S ATTENTION FROM THE RISING S/G LEVEL, AND FAILURE OF THE CHART RECORDER FOR CONTROL ROOM S/G LEVEL DURING THE EVENT. THE REACTOR PROTECTION SYSTEM FUNCTIONED PROPERLY IN TRIPPING THE UNIT, MINIMIZING SAFETY SIGNIFICANCE. CORRECTIVE ACTIONS INCLUDE REPAIRS TO THE FW REGULATING VALVE AND REVISIONS TO FW PUMP POPPET TESTING PROCEDURES.

FORM 58 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
295	1989	004	1	8911080061	215790	03/08/89

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

COMMENTS
STEP 4: MODEL NO. 31-16-250, PART NO. S/N: OK10.

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

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

REFERENCE LERS:
1 304/86-024

ABSTRACT
POWER LEVEL - 099%. ON 3/8/89, ALL UNIT 1 ROD POSITION INDICATORS DROPPED TO A READING OF APPROXIMATELY 220 STEPS. IT WAS FOUND THAT A LINE VOLTAGE REGULATOR, IN SERIES WITH THE POWER SOURCE FOR THE ROD POSITION INDICATION SYSTEM, HAD FAILED. ALL INDICATOR CHANNELS WERE DECLARED INOPERABLE, AND OPERATORS PREPARED TO RAMP THE UNIT DOWN AS REQUIRED BY TECH SPECS. BECAUSE OF THE UNCERTAINTY OF ACTUAL ROD POSITION, AND THE CONCERN FOR MAINTAINING ADEQUATE SHUTDOWN MARGIN, THE UNIT OPERATOR WAS INSTRUCTED TO RAMP DOWN IN POWER USING ONLY CHEMICAL SHIM. AT ONE POINT IN THE SHUTDOWN, DUE TO THE DIFFICULTIES INHERENT IN USING ONLY BORON TO CONTROL REACTIVITY, REACTOR POWER DROPPED BELOW TURBINE POWER ENOUGH TO CAUSE COOLANT PRESSURE TO FALL BELOW THE DNB OPERATING LIMIT DEFINED IN PLANT TECH SPECS. THE FAILED REGULATOR WAS REPLACED WITH A NEW ONE; THE OLD REGULATOR WAS RETURNED TO THE MANUFACTURER AND ANALYZED FOR THE CAUSE OF THE FAILURE. THIS WAS DETERMINED TO BE A FAILED CAPACITOR AND ZENER DIODE.

FORM 59 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
301	1980	001	0	8003170421	155338	02/21/80

DOCKET:301 POINT BEACH 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: WISCONSIN ELECTRIC POWER CO.
SYMBOL: WEP

COMMENTS
STEP 6: EFFECT KX - TURBINE RUNBACKS.

REFERENCE LERS:
1 301/78-018

ABSTRACT
POWER LEVEL - 100%. CAUSE - FAULTY POWER SUPPLY CAPACITOR. DURING NORMAL FULL POWER OPERATION AT 1831 HOURS, A MOMENTARY LOSS OF THE RED INSTRUMENT BUS WAS EXPERIENCED. THIS MOMENTARY NEGATIVE SPIKE CAUSED POWER RANGE CHANNEL N41 TO FAIL LOW, RESULTING IN A TURBINE RUNBACK. FAILURE OF CHANNEL N41 RESULTED IN A LOSS OF REDUNDANCY UNTIL THE BISTABLE WAS PLACED IN THE TRIPPED MODE AT 1842. THE NEGATIVE POWER SPIKE WHICH BLEW THE CHANNEL N41 FUSES WAS CAUSED BY A FAULTY CAPACITOR IN THE 2DY01 POWER SUPPLY. THE CHANNEL N41 FUSES WERE REPLACED, THE RED INSTRUMENT BUS SHIFTED TO THE ALTERNATE POWER SUPPLY AND ALL BISTABLES RETURNED TO NORMAL AT 1858. THE CAPACITOR WAS REPLACED AND THE NORMAL POWER SUPPLY RESTORED AT 1043 ON 2-22-80.

FORM 60 LER SCSS DATA 08-30-91.

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
301	1985	001	0	8506270001	194989	05/16/85

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DOCKET:301 POINT BEACH 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: WISCONSIN ELECTRIC POWER CO.
SYMBOL: WEP

COMMENTS
STEP 5: COMP BUS - HYDROGEN ANALYZER IN UNIT 1 POWERED FROM SAME BUS AS UNIT 2 POWER RANGE NUCLEAR INSTRUMENT CHANNEL.

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

ABSTRACT
POWER LEVEL - 100%. AT 1406 HOURS ON MAY 16, 1985, UNIT 2 EXPERIENCED A 20% RUNBACK FROM 100% POWER. THE POWER RANGE NUCLEAR INSTRUMENTATION SENSED A VOLTAGE SPIKE AND REACTED BY ACTIVATING THE DROPPED ROD TURBINE RUNBACK. THE VOLTAGE SPIKE OCCURRED AFTER A JUMPER WAS INADVERTENTLY GROUNDED DURING INSTRUMENT CALIBRATION ON THE INSTRUMENT BUS FEEDING THE POWER RANGE NUCLEAR INSTRUMENTATION. ALL EQUIPMENT RESPONDED AS DESIGNED.

FORM 61 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
301	1986	003	0	8607090083	199907	06/03/86

DOCKET:301 POINT BEACH 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: WISCONSIN ELECTRIC POWER CO.
SYMBOL: WEP

COMMENTS
WATCH 975 - TRANSIENTS INITIATED IN TWO UNITS AS THE RESULT OF A SINGLE FAILURE. STEPS 25-37: COMPLETE DESCRIPTION OF UNIT 1 EVENT (WHICH INCLUDED A SCRAM) IS DESCRIBED IN LER 266/86-003.

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

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

REFERENCE LERS:
1 266/86-003 2 301/85-003

ABSTRACT
POWER LEVEL - 100%. ON JUNE 3, 1986, UNIT 2 AT POINT BEACH NUCLEAR PLANT EXPERIENCED A 6 TO 8% TURBINE RUNBACK DUE TO THE LOSS OF POWER ON THE WHITE INSTRUMENT BUS. THE POWER LOSS WAS DUE TO THE TRIP OF THE WHITE INVERTER (2DY03) OUTPUT BREAKER FEEDING THE WHITE INSTRUMENT BUS. THE BREAKER TRIP WAS CAUSED WHEN THE SWING INVERTER (DYOC) WAS INCORRECTLY RESTORED TO OPERATION ON THE DC BUS FEEDING THE WHITE INVERTERS TO BOTH UNIT 1 AND UNIT 2 (1DY03 AND 2DY03 RESPECTIVELY). THE WHITE INSTRUMENT BUS SUPPLIES POWER TO A CHANNEL OF NUCLEAR INSTRUMENTATION. WHEN THE POWER WAS INTERRUPTED, THIS INSTRUMENTATION GENERATED A LOAD REFERENCE AND A LOAD LIMIT TURBINE RUNBACK FROM ITS DROPPED ROD DETECTION CIRCUITRY. THE WHITE BUS ALSO SUPPLIES POWER TO A FIRST-STAGE PRESSURE INSTRUMENT CHANNEL THAT ENABLES THE LOAD LIMIT RUNBACK, THEREFORE, WHEN POWER WAS INTERRUPTED, THE LOAD LIMIT RUNBACK WAS DEFEATED. DUE TO AN APPARENT MISMATCH BETWEEN LOAD REFERENCE AND ACTUAL FIRST STAGE PRESSURE, THE TURBINE CONTROL SYSTEM SHIFTED TO MANUAL AND STOPPED THE RUNBACK AT 6 TO 8% RATHER THAN THE EXPECTED 20%. THE UNIT STABILIZED AT APPROXIMATELY 94% POWER. THE WHITE INVERTER FOR UNIT 2 WAS RESTORED TO SERVICE AND THE UNIT WAS RETURNED TO 100% POWER. THE DC BUS TRANSIENT ALSO CAUSED THE OUTPUT BREAKER OF THE UNIT 1 WHITE INVERTER (LDY03) TO TRIP, RESULTING IN A RUNBACK AND REACTOR TRIP ON UNIT 1 (SEE LER 86-003-00, UNIT 1).

FORM 62 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
301	1986	006	0	8611120322	201874	10/02/86

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DOCKET:301 POINT BEACH 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: WISCONSIN ELECTRIC POWER CO.
SYMBOL: WEP

COMMENTS
STEP 1: EFF IX-UNKNOWN TYPE OF FAILURE. STEPS 20,21: EFF IX-VOLTAGE FLUCTUATIONS.

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.

ABSTRACT
POWER LEVEL - 000%. WITH UNIT 2 IN A REFUELING SHUTDOWN CONDITION AND REACTOR TRIP BREAKERS OPEN, REACTOR TRIP SIGNALS WERE GENERATED ON THREE OCCASIONS AS A RESULT OF WORK ACTIVITIES OR INSTRUMENT BUS VOLTAGE FLUCTUATIONS. ON OCTOBER 2, 1986, A REACTOR TRIP SIGNAL WAS GENERATED WHEN A FUSE BLEW WHILE REMOVING POWER FROM A DC MOTOR OPERATED VALVE. THIS CAUSED AN INSTRUMENT BUS VOLTAGE FLUCTUATION RESULTING IN A SOURCE RANGE REACTOR TRIP. ON OCTOBER 4, 1986, DURING A MEGGAR TEST OF A NEW APPENDIX "R" NEUTRON FLUX DETECTOR SIGNAL CABLE, A REACTOR TRIP SIGNAL WAS GENERATED WHEN THE MEGGAR TEST INDUCED AN ERRONEOUS VOLTAGE ON A NEARBY SIGNAL CABLE RESULTING IN A SOURCE RANGE REACTOR TRIP SIGNAL BEING GENERATED. OCTOBER 8, 1986, A VOLTAGE FLUCTUATION ON THE INSTRUMENT BUS CAUSED THE P7 LOGIC CIRCUITRY TO UNBLOCK RESULTING IN THE GENERATION OF A REACTOR TRIP SIGNAL. IN EACH OF THESE EVENTS, THE CAUSE WAS ATTRIBUTED TO EITHER AN OUTAGE- RELATED WORK ACTIVITY OR ERRATIC OPERATION OF AN INSTRUMENT BUS INVERTER (WHICH WAS SUBSEQUENTLY REPAIRED). PROCEDURES HAVE BEEN CHANGED AND DISCUSSIONS WILL BE HELD WITH OPERATIONS PERSONNEL, DUTY AND CALL SUPERINTENDENTS, AND DTA'S TO EMPHASIZE THE CORRECT INTERPRETATION OF REPORTING REQUIREMENTS AND THE IMPORTANCE OF ANTICIPATING ACTUATION SIGNALS CAUSED BY WORK ACTIVITIES DURING AN OUTAGE.

FORM 63 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
301	1988	001	0	8805240310	211631	04/07/88

DOCKET:301 POINT BEACH 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: WISCONSIN ELECTRIC POWER CO.
SYMBOL: WEP

COMMENTS
STEP 4: PART NO. HEK-3DT1. STEP 6: EFF IX - VOLTAGE OSCILLATIONS.

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

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

REFERENCE LERS:
1 266/85-006 2 266/86-005 3 266/87-004

ABSTRACT
POWER LEVEL - 100%. AT 0904 HOURS ON 4/7/88, A REACTOR TRIP OCCURRED FROM 100% POWER. THE TRIP WAS CAUSED BY A LOW PRESSURIZER PRESSURE SIGNAL. SAFETY INJECTION ALSO INITIATED DUE TO A LOW PRESSURIZER PRESSURE SIGNAL. THESE AND OTHER ANOMALIES WERE CAUSED BY RED INSTRUMENT BUS VOLTAGE FLUCTUATIONS RESULTING FROM THE PRIMARY AND ALTERNATE INVERTERS FEEDING THE RED INSTRUMENT BUS WITH THE INVERTERS CONNECTED IN PARALLEL. THE INVERTER PARALLEL OPERATION OCCURRED DUE TO THE FAILURE OF THE MECHANICAL INTERLOCK, WHICH IS DESIGNED TO PREVENT THE SIMULTANEOUS CONNECTION OF THE INVERTERS TO THE LOAD. DURING THE RECOVERY, WITH PRIMARY PRESSURE NEAR THE SAFETY INJECTION SET POINT AND SAFETY INJECTION RESET, SAFETY INJECTION OCCURRED A SECOND TIME DUE TO COOLING OF THE PRIMARY COOLANT SYSTEM WHEN STEAM WAS RESTORED TO THE TURBINE HALL. ALL SYSTEMS OPERATED AS EXPECTED DURING THE TRANSIENT WITH THE EXCEPTION OF ONE OF THE TWO SOURCE RANGE NUCLEAR INSTRUMENTATION CHANNELS. THIS CHANNEL FAILED TO ENERGIZE AFTER THE TRIP. THIS CHANNEL REMAINS OUT OF SERVICE AND WAS PLACED IN THE TRIP BLOCKED CONDITION AS ALLOWED BY POINT BEACH TECH SPECS. IMMEDIATE CORRECTIVE ACTION INCLUDED THE POSTING OF AN OPERATOR AID AT THE LOCATION OF THE INSTRUMENT BUS BREAKER CABINETS, WHICH PROVIDES INSTRUCTIONS TO REDUCE THE PROBABILITY OF THIS TYPE OF OCCURRENCE IN THE FUTURE.

FORM 64 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
301	1989	008	0	8912130112	216072	11/03/89

DOCKET:301 POINT BEACH 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: WISCONSIN ELECTRIC POWER CO.
SYMBOL: WEP

COMMENTS
STEP 1: CAUSE SD - MISLABELED POWER SUPPLY LEADS. STEP 8: COMP MEI - COMPUTER VIDEO MONITORS.

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:
1 266/87-004 2 301/89-002 3 301/89-006

ABSTRACT
POWER LEVEL - 000%. ON NOVEMBER 3, 1989, DURING RE-FUELING OPERATIONS, CONTRACTOR PERSONNEL GENERATED A FALSE TRIP SIGNAL WHILE INVESTIGATING A WIRING DISCREPANCY IN THE REACTOR PROTECTION SYSTEM INSTRUMENT RACKS. THE REACTOR WAS DEFUELED AND THE REACTOR TRIP BREAKERS WERE OPEN. THEREFORE, NO SAFETY RELATED EQUIPMENT STARTED. AN ORIGINAL WIRE LABELING ERROR WAS CONSIDERED THE ROOT CAUSE OF THE EVENT. FURTHER ANALYSIS INDICATED TWO REDUNDANT CHANNELS OF BORIC ACID STORAGE TANK T-6C LEVEL INSTRUMENTATION (2 OF 3 LOGIC) HAD COMMON INSTRUMENT BUS POWER SUPPLIES. CORRECTIVE ACTION INCLUDED CHANGING THE BORIC ACID STORAGE TANK LEVEL INSTRUMENT POWER SUPPLY AND RELABELING OF THE CABLE CONDUCTORS. THIS EVENT IS REPORTABLE PURSUANT TO 10 CFR 50.73(A)(2)(IV).

FORM 65 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
302	1985	023	0	8512050381	197969	10/26/85

DOCKET:302 CRYSTAL RIVER 3 TYPE:PWR
REGION: 2 NSSS:BW
ARCHITECTURAL ENGINEER: GLBT
FACILITY OPERATOR: FLORIDA POWER CORPORATION
SYMBOL: FPC

COMMENTS
SIX PREVIOUS INSTANCES WHERE LOSS OF A VITAL BAR OCCURRED DURING MODE 1 OPERATION.

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

REFERENCE LERS:
1 302/85-020

ABSTRACT
POWER LEVEL - 095%. ON OCTOBER 26, 1985, AT 1404, A TURBINE/REACTOR TRIP OCCURRED FOLLOWING A 120 VAC VITAL INVERTER FAILURE. THE INVERTER FAILURE CAUSED SEVERAL ALARMS AS WELL AS LOSS OF RPS POWERED INSTRUMENT INDICATIONS. INSTRUMENT FAILURES CAUSE A MAIN FEED PUMP TO TRIP AND AN AUTOMATIC RUNBACK. NUMEROUS ALARMS SOUNDED AND SMOKE WAS OBSERVED IN THE CONTROL ROOM. DURING THE RUNBACK, ONE OF THE OPERATORS OBSERVED THE CONTROL ROD DRIVE POSITION INDICATORS SHOWING ALL RODS "FULLY INSERTED". THIS AND OTHER ERRONEOUS INFORMATION INDICATED THAT THE REACTOR HAD TRIPPED AND HE ANNOUNCED IT. A SECOND CONTROL BOARD OPERATOR, NOTICING THAT THE TURBINE CONTROL VALVES WERE NOT CLOSED, MANUALLY TRIPPED THE MAIN TURBINE. THIS RESULTED IN AN ACTUAL ANTICIPATORY REACTOR TRIP. APPROXIMATELY 14 MINUTES AFTER THE REACTOR TRIP, THE "A" INVERTER FAILED TO ZERO VOLTAGE AND VITAL BUS DISTRIBUTION PANEL V8DP-3 SWITCHED TO THE ALTERNATE POWER SOURCE. THE INVERTER HAD BEEN IN AN UNDERVOLTAGE CONDITION PRIOR TO FAILURE AND CAUSED ERRONEOUS INDICATIONS ON THE MAIN CONTROL BOARD WHICH LED THE CONTROL BOARD OPERATOR TO TRIP THE MAIN TURBINE. THOUGH TAKEN PREMATURELY, THE ACTIONS TAKEN BY THE OPERATORS WERE CONSERVATIVE FOR THE INDICATIONS WHICH THEY SAW AND THE CONDITIONS WHICH WERE ANNOUNCED. INVESTIGATIVE MAINTENANCE DETERMINED THAT A DEFECTIVE OSCILLATOR BOARD CAUSED THE LOW VOLTAGE FAILURE AND IT WAS REPLACED.

FORM 66 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
302	1987	025	0	8712240085	207506	10/16/87

DOCKET:302 CRYSTAL RIVER 3 TYPE:PWR
REGION: 2 NSSS:BW
ARCHITECTURAL ENGINEER: GLBT
FACILITY OPERATOR: FLORIDA POWER CORPORATION
SYMBOL: FPC

COMMENTS
STEP 7: CAUSE AX - TO PERMIT TESTING OF BATTERIES. STEP 20: COMP XR - EVENTS RECORDER.

WATCH-LIST CODES FOR THIS LER ARE:
31 ACCIDENTAL ACTION
943 ALERT

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

REFERENCE LERS:
1 302/87-021

ABSTRACT
POWER LEVEL - 000%. ON OCTOBER 16, 1987, CRYSTAL RIVER UNIT 3 WAS SHUT DOWN IN A REFUELING OUTAGE. AT 2119, PERSONNEL WORKING IN THE VICINITY OF THE UNIT STARTUP TRANSFORMER RAISED A METAL POLE AND MADE ELECTRICAL CONTACT WITH A 230 KV FEEDER INTERRUPTING THE PLANT OFFSITE POWER SUPPLY. THE FOLLOWING SIGNIFICANT EVENTS RESULTED: THE ENGINEERED SAFEGUARDS SYSTEM ACTUATED, THE "B" DIESEL GENERATOR STARTED AND LOADED, NORMAL POWER WAS LOST TO THE SECURITY SYSTEMS, AND THE REACTOR BUILDING PURGE ISOLATED. ADDITIONALLY, POWER TO THE FOLLOWING WAS LOST: ONE NEUTRON MONITORING CHANNEL, THE AUXILIARY BUILDING VENTILATION SYSTEM EXHAUST FANS, THE CONTROL BOARD ANNUNCIATOR AND EVENT RECORDER, AND THE EMERGENCY NOTIFICATION SYSTEM PHONE. THIS EVENT WAS CAUSED BY ACCIDENTAL GROUNDING OF THE UNIT STARTUP TRANSFORMER 230 KV FEEDER RESULTING IN INTERRUPTION OF THE OFFSITE POWER SUPPLY. ELECTRICAL DISTRIBUTION SYSTEM LINEUPS WERE RESTORED TO THEIR PRE-EVENT STATUS AND THE DAMAGED 230 KV FEEDER WAS REPAIRED. WORK ACTIVITIES IN THE VICINITY OF THE UNIT STARTUP TRANSFORMER HAVE BEEN DISCONTINUED.

FORM 67 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
304	1986	001	0	8602060332	198307	01/03/86

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

COMMENTS
OTHER REPORTABILITY- TECH. SPEC. 6.6.3.H. STEP 1: EFF IX- POWER FLUCTATION.

REPORTABILITY CODES FOR THIS LER ARE:
21 OTHER: Voluntary report, special report, Part 21 report, etc.

ABSTRACT
POWER LEVEL - 000%. AT 1547 ON 1-3-86 UNIT 2 WAS SHUT DOWN FOR A REFUELING OUTAGE AND THE RCS WAS FILLED SOLID WITH NO BUBBLE IN THE PRESSURIZER. A MOMENTARY FLUCTUATION OF OUTPUT OF INVERTER POWER SUPPLY BUS 213 (CAUSE UNKNOWN) CAUSED THE CHARGING FLOW CONTROL VALVE, 2VC-FCV121, TO FAIL TO THE 20% DEMAND POSITION, AND ALSO CAUSED 2MOV-RH8701 THE RHR PUMP SUCTION ISOLATION VALVE TO FAIL CLOSED. THIS INCREASED CHARGING FLOW FROM 39 TO 190 GPM, AND ISOLATED LETDOWN FLOW RESULTING IN LIFTING OF THE PRESSURIZER POWER OPERATED RELIEF VALVES (PORV'S). WHILE INVESTIGATING THE CAUSE, BUS 213 WAS AGAIN DEENERGIZED AND THE PORV'S AGAIN LIFTED. THE CAUSE OF THE BUS OUTPUT FLUCTUATION IS CURRENTLY UNKNOWN. THIS EVENT IS REPORTABLE SINCE TECH SPEC 6.6.3.H REQUIRES A 30 DAY WRITTEN REPORT ON ACTUATION OF THE OVERPRESSURE PROTECTION SYSTEM.

FORM 68 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
304	1986	007	0	8602270366	198544	01/23/86

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

COMMENTS
STEP 2 - SWITCHING POWER SOURCES WHILE SCRAM BREAKERS CLOSED; STEPS 3&4: CAUSE IX - MOMENTARY INTERRUPTION IN A.C. POWER.

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

REFERENCE LERS:
1 295/85-021

ABSTRACT
POWER LEVEL - 000%. ON JANUARY 23, 1986, AT 0830, THE UNIT WAS IN HOT SHUTDOWN AND THE REACTOR TRIP BREAKERS WERE CLOSED FOR CONTROL ROD TESTING. INSTRUMENT INVERTER 211, WHICH SUPPLIES REGULATED A.C. POWER TO NUCLEAR INSTRUMENTATION SYSTEM (NIS) CHANNELS N31 AND N35, WAS OUT OF SERVICE AND THOSE CHANNELS WERE SUPPLIED WITH NONREGULATED POWER. CONTROL ROOM PERSONNEL WERE PREPARING TO SWITCH BACK FROM NONREGULATED POWER TO THE INVERTER. THE PROCEDURE WARNED THAT THIS WOULD CAUSE A MOMENTARY INTERRUPTION IN POWER TO THE NIS CHANNELS, CAUSING A REACTOR TRIP SIGNAL. AFTER SENDING AN EQUIPMENT OPERATOR TO SWITCH POWER SUPPLIES, THE SHIFT SUPERVISOR DECIDED TO HAVE THE TRIP BREAKERS OPENED MANUALLY. BEFORE HE COULD DO THIS, THE POWER SUPPLY WAS SWITCHED AND THE AUTOMATIC TRIP OCCURRED. TO PREVENT RECURRENCE, ALL LICENSED SHIFT SUPERVISORS WILL BE TRAINED AND A STANDING ORDER WILL CLARIFY THE PROPER ACTION TO TAKE WHEN AUTOMATIC ACTUATION OF AN ENGINEERED SAFETY FEATURE OR THE REACTOR PROTECTION SYSTEM IS EXPECTED.

FORM 69 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
305	1983	035	0	8401160278	188403	12/10/83

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

COMMENTS
STEPS 1 AND 2: EFFECT CODE IX = HIGH RESISTANCE CAUSING LOW OUTPUT VOLTAGE.

ABSTRACT
WITH THE REACTOR AT 100% POWER OPERATION, ALL RODS OUT, AND IN MANUAL, THE OPERATORS NOTICED THAT ALL ROD POSITION INDICATORS (RPI) WERE GRADUALLY DRIFTING DOWNWARDS. THE COMMON DRIFTING OF ALL RPI WAS DUE TO A VOLTAGE REGULTOR FAILURE, THUS THE RPI SYSTEM WAS AT NO TIME DECLARED INOPERABLE. BASED ON EXCORE INDICATIONS, WHICH REMAINED NORMAL THE ENTIRE TIME, AND NO CHANGE IN BANK DEMAND POSITION, THERE WAS NO ROD MISALIGNMENT. BECAUSE OF THE POTENTIAL SAFETY SIGNIFICANCE INVOLVED WE FEEL THIS INCIDENT IS WORTHY OF A 30 DAY REPORT. DRIFTING RPI WAS BECAUSE THE CONTACT POINT IN THE VOLTAGE REGULATOR WAS TARNISHED DUE TO AGE AND WEAR CAUSING A LOWER OUTPUT VOLTAGE. THE VOLTAGE ADJUST POT WAS WIPED THROUGH THE BAD SPOT, THE VOLTAGE READJUSTED, AND ALL RPI RETURNED TO NORMAL. LONG TERM ACTIONS INCLUDE ADDING THE OUTPUT VOLTAGE READINGS TO THE ANNUAL SURVEILLANCE TEST AND REPLACING THE POWER SUPPLY ONCE A NEW ONE CAN BE PURCHASED. NO FURTHER ACTION IS REQUIRED AT THIS TIME.

FORM 70 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
306	1990	009	0	9011130187	220038	10/07/90

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DOCKET:306 PRAIRIE ISLAND 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: FLPR
FACILITY OPERATOR: NORTHERN STATES POWER CO.
SYMBOL: NSP

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.

ABSTRACT
POWER LEVEL - 000%. ON OCTOBER 7, 1990 UNIT 2 WAS CRITICAL AT ZERO POWER AFTER REFUELING. ZERO POWER PHYSICS TESTING HAD JUST BEEN COMPLETED. THE REACTIVITY COMPUTER USED FOR PHYSICS TESTING WAS TO BE DISCONNECTED FROM NUCLEAR INSTRUMENTATION (NIS) POWER RANGE CHANNEL N41. AN INSTRUMENT AND CONTROL TECHNICIAN, WHEN ASKED TO DO THE WORK, REVIEWED THE PROCEDURE AND THE LOGIC DIAGRAMS TO DETERMINE WHAT HIS ACTIONS SHOULD BE. WITH PROCEDURE IN HAND, HE PROCEEDED TO REMOVE THE CONTROL POWER AND INSTRUMENT POWER FUSES FROM THE FRONT PANEL OF THE NIS DRAWER, CAUSING A UNIT 2 REACTOR TRIP AT 1712 BECAUSE HE HAD INADVERTENTLY REMOVED THE FUSES FROM NIS INTERMEDIATE RANGE CHANNEL N35 INSTEAD OF POWER RANGE CHANNEL N41. THE TRIP AND RECOVERY FROM THE TRIP WERE UNEVENTFUL. CAUSE OF THE EVENT WAS PERSONNEL ERROR IN REMOVING FUSES FROM THE WRONG NIS CHANNEL DRAWER. CHANNEL N35 IS IMMEDIATELY ABOVE CHANNEL N41 ON THE NIS RACK. THE TECHNICIAN FAILED TO USE SELF-CHECKING WHEN REMOVING THE FUSES.

FORM 71 LER SCSS DATA 08-30-91

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

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

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

FORM 72 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
311	1983	019	0	8306030188	182916	04/30/83

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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
STEP 1: CAUSE AX - FOR CALIBRATION.

ABSTRACT
ON APRIL 30, 1983, DURING ROUTINE SHUTDOWN OPERATIONS, THE NO. 2D VITAL INSTRUMENT BUS WAS DE-ENERGIZED AND TAGGED OUT FOR MAINTENANCE. DE-ENERGIZATION OF THE BUS RESULTED IN A LOSS OF THE NO. N-44 POWER RANGE CHANNEL. THE NO. N-42 CHANNEL WAS ALREADY DE-ENERGIZED FOR A CHANNEL CALIBRATION. LOSS OF TWO POWER RANGE CHANNELS IN TURN DE-ENERGIZED THE SOURCE RANGE CHANNELS (DUE TO PERMISSIVE P-10). A SHUTDOWN MARGIN WAS IMMEDIATELY PERFORMEND AND WAS SATISFACTORY. THE EVENT CONSTITUTED OPERATION IN A DEGRADED MODE IN ACCORDANCE WITH TECH SPEC 6.9.1.9B. INVESTIGATION REVEALED THAT IN ACCORDANCE WITH ACCEPTED PRACTICE IT WAS POSSIBLE FOR A SENIOR SHIFT SUPERVISOR TO BE UNAWARE OF THE DE-ENERGIZATION OF A NUCLEAR INSTRUMENT SYSTEM (NIS) CHANNEL FOR CALIBRATION. A NEW METHOD OF TRACKING NIS STATUS WAS INITIATED AND OPERATING SHIFTS WERE INFORMED OF THE INCIDENT.

FORM 73 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
311	1983	022	0	8306170362	183365	05/30/83

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

COMMENTS
STEP 2: IX- INVERTER CHATTERING; STEP 4: XA - UNKNOWN ALARM TYPE; STEP 7: MEI- SPRINKLERS AND FIRE HOSE STATIONS

REFERENCE LERS:
1 311/83-021

ABSTRACT
ON MAY 30, 1983, DURING ROUTINE SHUTDOWN OPERATION, THE NO. 2C VITAL INSTRUMENT INVERTER FAILED, RENDERING THE ASSOCIATED ELECTRICAL BUS TRAIN INOPERABLE. SINCE NO. 2A DIESEL GENERATOR WAS ALSO INOPERABLE AT THE TIME, ACTION STATEMENT 3.8.2.2 WAS ENTERED. CONTAINMENT INTEGRITY WAS ESTABLISHED WITHIN 8 HOURS AS REQUIRED BY THE ACTION STATEMENT. DUE TO OPERATION LESS CONSERVATIVE THAN THE LEAST CONSERVATIVE ASPECT OF A LIMITING CONDITION FOR OPERATION, THE EVENT IS REPORTABLE IN ACCORDANCE WITH TECH SPEC 6.9.1.8B. THE FACT THAT ONE SURVEILLANCE TEST NECESSARY TO ESTABLISH CONTAINMENT INTEGRITY WAS EXPIRED WAS OVERLOOKED UNTIL INSUFFICIENT TIME REMAINED TO COMPLETE THE TEST. A REVIEW OF APPLICABLE PROCEDURES AND TECH SPECS WILL BE PERFORMED TO IDENTIFY IMPROVEMENTS WHICH WILL PREVENT RECURRENCE. THE INVERTER WAS. REPAIRED AND THE ACTION STATEMENT WAS TERMINATED.

FORM 74 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
311	1984	006	0	8404240215	189305	03/18/84

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 - SURVEILLANCE REQUIREMENT.

REPORTABILITY CODES FOR THIS LER ARE:
10 10 CFR 50.73(a)(2)(i): Shutdowns or technical specification violations.
21 OTHER: Voluntary report, special report, Part 21 report, etc.

ABSTRACT
POWER LEVEL - 100%. AT 0213 HRS, MAR 18, 1984, DURING ROUTINE SURVEILLANCE TESTING, A LOSS OF 2B 4KV VITAL BUS OCCURRED WHILE PARALLELING 2B EMERGENCY DG WITH THE GRID. THE BUS DIFFERENTIAL PROTECTION RELAY ACTUATED, WHICH, IN TURN, ACTUATED THE MULTI-TRIP RELAY AND TRIPPED 2B EMERGENCY DG BREAKER AND THE 4KV VITAL BUS INFEED BREAKER. THE PLANT WAS VERIFIED TO BE IN STABLE CONDITION. ALTHOUGH THE INDIVIDUAL ROD POSITION INDICATION FAILED AT ZERO, AND THE ROD BOTTOM LIGHTS ILLUMINATED, REACTOR POWER LEVEL REMAINED STEADY AT 100%. THE PLANT WAS MAINTAINED STABLE WHILE THE IRPI AND ROD BOTTOM INDICATION WERE RESTORED. AT 0610 HRS, A UNIT SHUTDOWN WAS COMMENCED PER TECH SPECS, DUE TO THE INOPERABILITY OF 3 CONTAINMENT ISOLATION VALVES. THE EVENT WAS ATTRIBUTED TO PARALLELING THE GENERATOR OUT-OF-PHASE. TESTING VERIFIED THAT THE BUS, BREAKERS, RELAYS AND ALL EQUIPMENT WERE UNAFFECTED BY THE TRANSIENT. THE BUS WAS REENERGIZED AT 1123 HRS. THE CONTAINMENT ISOLATION VALVES WERE RESTORED TO AN OPERABLE STATUS, AND THE REACTOR SHUTDOWN WAS TERMINATED. THIS REPORT IS SUBMITTED IN ACCORDANCE WITH 10 CFR 50.73 (A)(2)(I) AND SURVEILLANCE REQUIREMENT 4.8.1.1.4.

FORM 75 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
311	1990	043	0	9101280159	220723	12/20/90

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

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

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

ABSTRACT
POWER LEVEL - 100%. ON 12/20/90 AT 0154 HOURS, DURING FULL POWER OPERATION, ALL CONTROL ROOM ANALOG ROD POSITION INDICATOR (ARPI) INDICATION WAS LOST. SUBSEQUENTLY, TECH. SPEC. 3.1.3.2.1. WAS REVIEWED. THE ACTION STATEMENTS DO NOT ADDRESS INOPERABILITY OF MORE THAN ONE ARPI; THEREFORE, TECH. SPEC. ACTION STATEMENT 3.0.3 WAS ENTERED. SEVERAL OVERHEAD ALARMS WERE RECEIVED IN THE CONTROL ROOM WHEN THIS EVENT OCCURRED. THE ROOT CAUSE OF THIS EVENT IS EQUIPMENT FAILURE. A CHART RECORDER'S RIBBON CABLE INSULATION WORE THROUGH TO ITS WIRE, SUBSEQUENTLY SHORTING THE EXPOSED WIRE TO GROUND. THIS RESULTED IN THE OPENING OF THE BREAKER (NO. CB-1, A 2 AMP BREAKER) WHICH REMOVED POWER TO THE ARPI INDICATORS. AT THE TIME OF THE EVENT, A MAINTENANCE-I&C TECHNICIAN WAS INSERTING THE CHART RECORDER (LOCATED ON THE CONTROL ROOM CONSOLE) INTO ITS CHASSIS. THE CUT CABLE SUPPLIES POWER FROM THE NO. 21 MISCELLANEOUS AC (MAC) 115 VAC DISTRIBUTION CABINET NO. 34 BREAKER (15 AMPS) TO THE RECORDER. WHEN THE SHORT OCCURRED, THE NO. 34 BREAKER DID NOT TRIP OPEN; HOWEVER, THE CB-1 BREAKER, LOCATED IN THE ARPI CABINET 87, TRIPPED OPEN RESULTING IN THE LOSS OF ALL ARPI INDICATION. THE POWER SOURCE TO THE CB-1 BREAKER COMES FROM BREAKER NO. 41 (15 AMPS) ALSO LOCATED IN THE NO. 21 MAC CABINET. THE CB-1 BREAKER WAS RESET AND CLOSED TO RESTORE POWER TO THE ARPI INDICATORS AND TECH. SPEC. ACTION STATEMENT 3.0.3 WAS THEN EXITED.

FORM 76 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
315	1985	057	1	8602100448	198498	10/25/85

DOCKET:315 COOK 1 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: AEPS
FACILITY OPERATOR: INDIANA & MICHIGAN ELECTRIC CO.
SYMBOL: IME

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

ABSTRACT
POWER LEVEL - 000%. THIS LER IS BEING RESUBMITTED TO CORRECT THE DESCRIPTION OF THE SEQUENCE OF EVENTS LEADING TO THE REACTOR TRIP. ON OCTOBER 25, 1985, AT 0850 HOURS WITH THE UNIT IN HOT SHUTDOWN TWO OF FOUR POWER RANGE INSTRUMENTS WERE TAKEN FROM SERVICE BY REMOVING THE FUSES (IEEE/FU) TO ALLOW FOR INSTALLATION OF AN APPROVED DESIGN CHANGE. THIS SATISFIED THE 2/4 COINCIDENCE REQUIRED TO DE-ENERGIZE THE DETECTOR HIGH VOLTAGE IN BOTH SOURCE RANGE CHANNELS THUS RENDERING THEM INOPERABLE. TECHNICAL SPECIFICATION 3.3.1.1 TABLE 3.3-1 ITEM 6.B REQUIRES AT LEAST ONE CHANNEL OPERABLE. COMPLIANCE WITH SHUTDOWN MARGIN REQUIREMENTS WAS VERIFIED PER THE ASSOCIATED ACTION STATEMENT. WITH 2/4 POWER RANGE CHANNELS INOPERABLE, A REACTOR TRIP SIGNAL WAS GENERATED ALTHOUGH THE REACTOR TRIP BREAKERS WERE OPEN AND NO EQUIPMENT WAS ACTUATED. AT 0852 HOURS, THE FUSES WERE RE-INSTALLED IN THE POWER RANGE DRAWERS AND BOTH SOURCE RANGE CHANNEL DETECTOR HIGH VOLTAGES WERE RE-ENERGIZED. THE INCIDENT WAS DUE TO PERSONNEL ERROR ON THE PART OF THE TECHNICIANS AND THE UNIT SUPERVISOR. TO PREVENT RECURRENCE, ALL OF THE PERSONNEL INVOLVED HAVE BEEN COUNSELED ON THE IMPORTANCE OF THOROUGHLY RESEARCHING ALL POSSIBLE CONSEQUENCES OF THEIR ACTIONS. THE HEALTH AND SAFETY OF THE PUBLIC WERE NOT AFFECTED.

FORM 77 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
315	1988	011	0	8900000000	213655	10/19/88

DOCKET:315 COOK 1 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: AEPS
FACILITY OPERATOR: INDIANA & MICHIGAN ELECTRIC CO.
SYMBOL: IME

COMMENTS
STEP 1: COMP XI - SSPS INSTRUMENT BUS #1 POWER AVAILABILITY INDICATOR BULB AND SOCKET ASSEMBLY; MODEL 37-1362-0335-216.

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:
1 315/88-013

ABSTRACT
POWER LEVEL - 000%. ON 10/19/88 AT 1522 HOURS, UNIT ONE EXPERIENCED AN ENGINEERED SAFETY FEATURES ACTUATION (REACTOR TRIP) FROM THE LOSS OF REACTOR FLOW LOGIC CIRCUIT OF THE PLANT PROTECTION SYSTEM, ALTHOUGH NO ACTUAL LOSS OF REDUCTION OF REACTOR COOLANT FLOW EXISTED. THE REACTOR TRIP SIGNAL WAS THE ULTIMATE RESULT OF THE FAILURE OF AN INDICATING LIGHT ASSEMBLY CONNECTED DIRECTLY TO ONE OF THE CLASS 1-E INSTRUMENT AND UNINTERRUPTABLE POWER SOURCES WHICH FEED THE SOLID STATE PROTECTION SYSTEM (SSPS). THE FAILURE CREATED A SHORT CIRCUIT, RESULTING IN EXCESSIVE CURRENT DEMAND ON THE POWER SOURCE. THE INLINE PROTECTIVE FUSE OPENED AS REQUIRED, RESULTING IN LOSS OF POWER IN ONE SSPS INPUT BAY. THE RELAYS WITHIN THE AFFECTED INPUT BAY THEN DE-ENERGIZED TO THE FAIL-SAFE POSITION. ONE OF THESE RELAYS IS ASSOCIATED WITH THE REACTOR COOLANT PUMP (RCP) BREAKER POSITION LOGIC CIRCUIT. BECAUSE THIS CIRCUIT HAS A ONE OUT OF FOUR COINCIDENCE WHEN REACTOR POWER IS ABOVE 50%, A REACTOR TRIP RESULTED. THE FAULTED LAMP AND SOCKET ASSEMBLY WAS REPLACED AND UNIT STARTUP WAS ACCOMPLISHED.

FORM 78 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
316	1986	008	0	8600000000	202548	03/11/86

DOCKET:316 COOK 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: AEPS
FACILITY OPERATOR: INDIANA & MICHIGAN ELECTRIC CO.
SYMBOL: IME

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

ABSTRACT
POWER LEVEL - 000%. ON 3-11-86, AT 1305 HOURS WITH UNIT 2 IN MODE 5 (COLD SHUTDOWN), AN ESF REACTOR TRIP SIGNAL WAS RECEIVED CAUSED BY CONTROL POWER WIRES PULLING FREE FROM A POWER RANGE NUCLEAR INSTRUMENT (NI) DRAWER AND SHORTING OUT DURING PREVENTIVE MAINTENANCE. ESF SIGNALS WERE ALSO GENERATED WHEN THE SHORTED WIRES WERE DISCONNECTED AT 1317 HOURS AND WHEN RESTORING POWER AT 1355 HOURS, THE WRONG BREAKER WAS CYCLED. THERE WAS NO AUTOMATIC ACTUATION OF PLANT EQUIPMENT AS THE SIGNALS ARE BLOCKED WHEN IN MODE 5. IT WOULD HAVE BEEN POSSIBLE FOR THIS EVENT TO HAVE OCCURRED DURING POWER OPERATIONS AS THE NI DRAWERS WERE PULLED OUT ON OCCASION. THIS WOULD HAVE RESULTED IN A REACTOR TRIP. THE CAUSE WAS DUE TO A FAULTY ELECTRICAL CONNECTOR (IEEE/CON) AND MISLABELED POWER SUPPLY DOORS (DOORS WERE INTERCHANGED). THE ELECTRICAL CONNECTOR HAS BEEN REPAIRED AND THE CABINETS LABELED PROPERLY AND PAINTED DIFFERENT COLORS TO PREVENT INTERCHANGING DOORS.

FORM 79 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
316	1986	016	0	8605290252	199418	04/29/86

DOCKET:316 COOK 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: AEPS
FACILITY OPERATOR: INDIANA & MICHIGAN ELECTRIC CO.
SYMBOL: IME

COMMENTS
STEP 2: COMP CON - 3 PIN 120 V AC CONNECTOR; STEP 6: EFF ID - MOMENTARY POWER LOSS DURING AUTOMATIC SWITCH TO BACKUP POWER

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

REFERENCE LERS:
1 316/86-008

ABSTRACT
POWER LEVEL - 000%. ON 4-29-86, AT 0229 HOURS WITH UNIT 2 IN MODE 6 (REFUELING) WITH THE CORE UNLOADED, ESF AND REACTOR TRIP SIGNALS WERE RECEIVED CAUSED BY SHORTED CONTROL POWER WIRES TO POWER RANGE NUCLEAR INSTRUMENT (NI) DRAWER N-41B. THE WIRES SHORTED OUT WHILE A TECHNICIAN WAS PULLING THE NI DRAWER OUT FOR A SURVEILLANCE TEST. AN ELECTRICAL CONNECTOR FAILED ALLOWING THE WIRES TO PULL FREE. THERE WAS NO WATER INJECTED INTO THE REACTOR COOLANT SYSTEM OR ACTUATION OF PLANT EQUIPMENT AS THE SIGNALS ARE BLOCKED WHILE IN MODE 6. IT WOULD HAVE BEEN POSSIBLE FOR THIS EVENT TO HAVE OCCURRED DURING POWER OPERATIONS WHICH COULD HAVE RESULTED IN A REACTOR TRIP AND SAFETY INJECTION. TO PREVENT RECURRENCE, INSPECTIONS ARE BEING CONDUCTED OF ALL ELECTRICAL CONNECTORS IN THE NUCLEAR INSTRUMENT CABINETS (BOTH UNIT 1 AND 2). THE PURPOSE IS TO REPAIR OR REPLACE CONNECTORS AS REQUIRED AND ARRANGE THE CABLES TO ENSURE FREE MOVEMENT. THESE ACTIONS WILL BE COMPLETED BY 6-1-86. PREVIOUS SIMILAR EVENTS - 316/86-008.

FORM 80 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
316	1989	014	0	8909220109	215257	08/14/89

DOCKET:316 COOK 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: AEPS
FACILITY OPERATOR: INDIANA & MICHIGAN ELECTRIC CO.
SYMBOL: IME

COMMENTS
STEPS 2,8: MODEL NO. SV25075 (7.5 KVA). STEP 5: EFF AM - AUTO-TRANSFERRED TO ALTERNATE POWER SOURCE. STEP 7: EFF AM - TRANSFERRED BACK TO CLASS 1E POWER SOURCE. STEPS 41,42,43,45,66,67,68 CHANNEL X - 10,11,12,13,14,15,16, RESPECTIVELY.

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%. ON 8/14/89 AT 1601 HOURS, A REACTOR PROTECTION SYSTEM (RPS) ACTUATION (REACTOR TRIP) OCCURRED WHEN OPERATORS TRANSFERRED THE CONTROL ROOM INSTRUMENTATION DISTRIBUTION (CRID) IV (VITAL BUS) INVERTER TO ITS NORMAL CLASS 1E POWER SUPPLY AND THE INVERTER FAILED. WHEN THE CRID IV INVERTER FAILED, A REACTOR TRIP SIGNAL WAS INITIATED DUE TO THE REACTOR COOLANT PUMP (RCP) CIRCUIT BREAKER POSITION INDICATION OPEN (FED FROM CRID IV). PRIOR TO THE TRIP (AT APPROXIMATELY 1540 HOURS), THE CRID INVERTER HAD TRANSFERRED TO ITS ALTERNATE NON-CLASS 1E POWER SUPPLY AT THE SAME TIME THAT A CONTROL POWER FUSE HAD BLOWN ON POWER RANGE NUCLEAR INSTRUMENTATION SYSTEM (NIS) CHANNEL IV (N-44). SUBSEQUENT INVESTIGATION DETERMINED THAT THE CRID INVERTER FAILURE WAS DUE TO A FAILED SILICON CONTROLLED RECTIFIER (SCR) IN THE STATIC TRANSFER SWITCH. THIS ALSO RESULTED IN THE FAILURE OF FUSES AND POWER SUPPLIES IN VARIOUS COMPONENTS FED FROM THE CRID. THE FAULTED SCR'S WERE REPLACED AND THE CRID INVERTER DECLARED OPERABLE. ALL COMPONENTS FED FROM THE CRID WERE INSPECTED AND, WHERE NECESSARY, FUSES AND/OR POWER SUPPLIES WERE REPLACED.

FORM 81 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
317	1983	036	1	8402080353	188612	06/18/83

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

REFERENCE LERS:
1 317/83-008 2 318/82-022

ABSTRACT
DURING STEADY STATE OPERATION AT 83% POWER, REED SWITCH POSITION INDICATION (RSPI) WAS LOST FOR ALL CONTROL ELEMENT ASSEMBLIES (CEA) (TECH SPEC 3.1.3.3). ACTION WAS TAKEN TO PLACE REACTOR IN MODE 3 PER TECH SPEC 3.0.3. TROUBLESHOOTING INDICATED A SHORT ON CEA 56 REED STACK. LEADS TO CEA 56 WERE LIFTED, RESTORING PROPER INDICATION ON THE OTHER REED STACK CHANNELS. ALL CEA PULSE COUNTING POSITION CHANNELS AND UPPER ELECTRICAL LIMIT SWITCHES REMAINED OPERABLE THROUGHOUT EVENT. SIMILAR EVENTS: 83-08, 50-318/82-22. THE RSPI POWER SUPPLY WAS OVERLOADED WHEN CEA 56'S REED STACK POSITION TRANSMITTER (RSPT) (ELECTRO-MECHANICS, PART #N9027, REV. 1) SHORTED. THE CMI FEATURE WAS RETAINED VIA A TEMPORARY MODIFICATION UNTIL THE RSPT WAS REPLACED DURING THE UNIT'S REFUELING OUTAGE. THE FAILED RSPT WAS REPAIRED FOLLOWING THE VENDOR'S ROOT CAUSE INSPECTION.

FORM 82 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
322	1989	002	0	8904140508	213574	03/09/89

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

COMMENTS
STEP 1: CAUSE AX - TESTING.

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 - 000%. ON 3/9/89 AT 2037, A FULL RPS ACTUATION OCCURRED WHILE ATTEMPTING TO RESTORE POWER TO THE "B" RPS BUS DURING THE PERFORMANCE OF AN OPERATIONS SURVEILLANCE TEST. THE PLANT WAS IN OPERATIONAL CONDITION 4 (COLD SHUTDOWN) WITH THE MODE SIWTCH IN SHUTDOWN AND ALL RODS INSERTED IN THE CORE. AFTER EMERGENCY BUS 102 WAS DEENERGIZED DURING A SIMULATED LOSS OF OFFSITE POWER (LOOP) BY PROCEDURE SP (24.307.02) AND REENERGIZED BY ITS ASSOCIATED DIESEL (EDG 102), OPERATORS ATTEMPTED TO REENERGIZE THE "B" RPS BUS. THE BUS DEENERGIZATION WAS AN EXPECTED RESPONSE, RESULTING IN A 1/2 REACTOR TRIP SIGNAL. HOWEVER, THE "B" RPS MG SET OUTPUT BREAKER WOULD NOT RESET AND REMAIN CLOSED. DURING THE COURSE OF TROUBLESHOOTING, THE WATCH ENGINEER INADVERTENTLY DOWNPOWERED AN APRM INVERTER ON THE "A" SIDE, THEN REPOWERED IT CAUSING A FALSE HIGH FLUX SIGNAL RESULTING IN AN "A" SIDE REACTOR TRIP. SINCE THE "B" SIDE REACTOR TRIP SIGNAL WAS ALREADY PRESENT DURING THE TROUBLESHOOTING, A FULL REACTOR TRIP OCCURRED. PLANT MANAGEMENT WAS NOTIFIED AND THE NRC WAS NOTIFIED AT 2215 PER 10CFR50.72. INVESTIGATION REVEALED THAT TRANSIENTS RESULTING FROM THE LOADING OF THE "B" RPS BUS CAUSED A PEAK VOLTAGE OF 135 VAC. THE OVERVOLTAGE TRIP SETPOINT OF THE MG SET OUTPUT BREAKER WAS SET AT 129.3 VAC. ADJUSTMENTS WERE MADE TO THE VOLTAGE REGULATOR AND THE OUTPUT BREAKER WITH SATISFACTORY RESULTS.

FORM 83 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
323	1988	020	0	8901040394	212250	11/28/88

DOCKET:323 DIABLO CANYON 2 TYPE:PWR
REGION: 5 NSSS:WE
ARCHITECTURAL ENGINEER: PGEC
FACILITY OPERATOR: PACIFIC GAS & ELECTRIC CO.
SYMBOL: PGE

WATCH-LIST CODES FOR THIS LER ARE:
941 REPORT ASSOCIATED WITH 10 CFR 50.72
60 SPURIOUS/ UNKNOWN CAUSE

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

REFERENCE LERS:
1 275/86-014 2 275/88-006

ABSTRACT
POWER LEVEL - 000%. ON 11/28/88 AT 2008 PST, A CONTAINMENT VENTILATION ISOLATION OCCURRED AND THE FUEL HANDLING BUILDING VENTILATION SYSTEM SHIFTED TO THE IODINE REMOVAL MODE. THIS RESULTED FROM A TEMPORARY LOSS OF POWER IN VITAL INSTRUMENT AC DISTRIBUTION PANEL PY-22 TO THE RADIATION MONITORS WHICH CAUSED THE ESF ACTUATIONS WHEN THE AFFECTED RADIATION MONITORS SWITCHED TO ALARM UPON LOSS OF POWER. IN ADDITION TO THE ESF ACTUATIONS, SYSTEMS RESPONSES INCLUDED: MAIN STEAM ISOLATION SIGNAL (NO VALVES CLOSED BECAUSE THE SIGNAL WAS OF INSUFFICIENT DURATION); LETDOWN ISOLATION; PRESSURIZER HEATERS TRIPPED; STEAM DUMPS CLOSED; FCV-128 STARTED TO FAIL OPEN (5% DEMAND TO 25% DEMAND), RM-28A PUMP TRIPPED; FCV-111A FAILED CLOSED; FLUX RATE TRIP ON POWER RANGE N42; AND NUMEROUS OTHER ALARMS. THE FOUR HOUR NONEMERGENCY REPORT REQUIRED BY 10 CFR 50.72 WAS COMPLETED BY 2227 PST. A REVIEW OF PLANT RECORDS INDICATES THAT NO EVOLUTION WAS IN PROGRESS THAT WOULD HAVE PRODUCED A VOLTAGE TRANSIENT OF SUFFICIENT MAGNITUDE TO HAVE CAUSED THIS EVENT.

FORM 84 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
323	1990	003	0	9005080252	218123	04/04/90

DOCKET:323 DIABLO CANYON 2 TYPE:PWR
REGION: 5 NSSS:WE
ARCHITECTURAL ENGINEER: PGEC
FACILITY OPERATOR: PACIFIC GAS & ELECTRIC CO.
SYMBOL: PGE

COMMENTS
STEP 3: EFF IX - ELECTRICAL TRANSIENT.

WATCH-LIST CODES FOR THIS LER ARE:
941 REPORT ASSOCIATED WITH 10 CFR 50.72
60 SPURIOUS/ UNKNOWN CAUSE

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

REFERENCE LERS:
1 275/86-014 2 323/86-010 3 323/88-020

ABSTRACT
POWER LEVEL - 000%. ON 4/4/90, AT 1258 PDT, WITH UNIT 2 IN MODE 5 (COLD SHUTDOWN), A CONTROL ROOM VENTILATION SYSTEM TRANSFER FROM MODE 1 (NORMAL) TO MODE 4 (PRESSURIZATION) OCCURRED AND A FUEL HANDLING BUILDING VENTILATION SYSTEM TRANSFER TO THE IODINE REMOVAL MODE OCCURRED. THESE ARE ENGINEERED SAFETY FEATURE ACTUATIONS, AND WERE CAUSED BY AN ELECTRICAL TRANSIENT IN VITAL INSTRUMENT AC DISTRIBUTION PANEL PY-21A WHICH SUPPLIES A NUMBER OF VITAL LOADS, INCLUDING TWO RADIATION MONITOR SYSTEM RACKS AND THE CONTROL ROOM VENTILATION SYSTEM ISOLATION AUXILIARY RELAYS. A FOUR-HOUR, NON-EMERGENCY REPORT WAS MADE IN ACCORDANCE WITH 10 CFR 50.72(B)(2)(II) ON 4/4/90, AT 1535 PDT. A REVIEW OF THE UNIT 2 OUTAGE WORK IN PROGRESS AT THE TIME OF THE EVENT INDICATED THAT MANY OF THE WORK ACTIVITIES COULD HAVE PRODUCED AN ELECTRICAL TRANSIENT OF SUFFICIENT MAGNITUDE TO HAVE CAUSED THIS EVENT. HOWEVER, INTERVIEWS WITH THE WORK FOREMEN AND AN INVESTIGATION OF THE EVENT DID NOT IDENTIFY A ROOT CAUSE FOR THE EVENT. THUS, NO SPECIFIC CORRECTIVE ACTIONS TO PREVENT RECURRENCE WERE DETERMINED FOR THIS EVENT.

FORM 85 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
324	1981	109	0	8111100414	169624	10/07/81

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DOCKET:324 BRUNSWICK 2 TYPE:BWR
REGION: 2 NSSS:GE
ARCHITECTURAL ENGINEER: UECX
FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
SYMBOL: CPL

COMMENTS
STEP 1: COMPONENT BX - SWITCH HOUSING.

ABSTRACT
HPCI SYSTEM STEAM LEAK DETECTION AMBIENT TEMPERATURE HIGH AND HPCI LOGIC POWER FAILURE ANNUNCIATORS WERE RECEIVED. AN IMMEDIATE INVESTIGATION REVEALED THE HPCI SYSTEM ISOLATION LOGIC POWER SUPPLY FUSE, LOCATED IN DISTRIBUTION PANEL P614, WAS BLOWN. THE HPCI SYSTEM WAS THEN DECLARED INOPERABLE AND WAS ISOLATED. ELECTRICAL SHORTING TO GROUND OF HPCI STEAMLINE TUNNEL TEMPERATURE SWITCH, 2-E41-TS-3314, MODEL NO. 170002-40, DUE TO MOISTURE ACCUMULATION IN THE SWITCH HOUSING RESULTING FROM CORROSION OF THE SWITCH HOUSING CAUSED THE EVENT. A NEW TEMPERATURE SWITCH AND LOGIC POWER SUPPLY FUSE WERE INSTALLED WHICH RETURNED THE HPCI LEAK DETECTION SYSTEM TO NORMAL. THE HPCI SYSTEM WAS DECLARED OPERABLE.

FORM 86 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
324	1987	004	0	8704170194	204119	03/11/87

DOCKET:324 BRUNSWICK 2 TYPE:BWR
REGION: 2 NSSS:GE
ARCHITECTURAL ENGINEER: UECX
FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
SYMBOL: CPL

COMMENTS
STEP 34: CAUSE HX - REVERSE FLOW.

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

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 - 100%. AT 0307 ON 3/11/87, A UNIT 2 REACTOR SCRAM OCCURRED DUE TO A LOW LEVEL IN THE REACTOR VESSEL. THE LOW VESSEL LEVEL WAS CAUSED BY LOSS OF THE UNINTERRUPTIBLE POWER SUPPLY (UPS) WHICH CAUSED THE SIGNAL TO THE FEED PUMP CONTROL SYSTEM TO RAMP BACK TO MINIMUM SPEED OF APPROXIMATELY 2800 RPM. AT THIS SPEED, THE PUMPS WERE NOT ABLE TO MAINTAIN AN ADEQUATE FLOW RATE INTO THE VESSEL, THUS CREATING THE LOW LEVEL CONDITION. FOLLOWING THE SCRAM RECOVERY, DURING A SUBSEQUENT HPCI SYSTEM LINEUP VERIFICATION, IT WAS ALSO NOTED THAT THE HIGH PRESSURE COOLANT INJECTION (HPCI) SYSTEM WAS INOPERABLE. THE HPCI SYSTEM DID PERFORM AS REQUIRED DURING THE SCRAM. AT THE TIME OF THIS EVENT, UNIT 2 WAS AT 100% POWER. THE LOSS OF THE UPS SYSTEM STEMMED FROM FAILURE TO FOLLOW PROCEDURES WHILE ATTEMPTING TO TRANSFER INPUT POWER TO UPS FROM THE RESERVE BUS TO THE STANDBY INVERTER. THE HPCI SYSTEM INOPERABILITY WAS DUE TO A FAILED MOTOR ON THE HPCI (E41) PUMP DISCHARGE VALVE E41.F007 WITH THE VALVE IN THE CLOSED POSITION. THE MOTOR WAS REPLACED PRIOR TO STARTUP AND THE HPCI SYSTEM RETURNED TO OPERABLE STATUS.

FORM 87 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
324	1988	018	0	8812210111	211569	11/16/88

DOCKET:324 BRUNSWICK 2 TYPE:BWR
REGION: 2 NSSS:GE
ARCHITECTURAL ENGINEER: UECX
FACILITY OPERATOR: CAROLINA POWER & LIGHT CO.
SYMBOL: CPL

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%. AT 1026 HOURS ON NOVEMBER 16, 1988, THE UNIT 2 REACTOR SCRAMMED DUE TO TURBINE CONTROL VALVE FAST CLOSURE ON A HIGH LEVEL TURBINE TRIP. THE UNIT WAS OPERATING AT 100% POWER. THE EMERGENCY CORE COOLING SYSTEMS WERE OPERABLE AND IN STANDBY READINESS. DURING THE EVENT, GROUPS 1, 2, 3, 6, AND 8 ISOLATIONS WERE RECEIVED. THE D OUTBOARD MAIN STEAM LINE ISOLATION VALVE (MSIV) EXHIBITED DUAL POSITION INDICATION. HPCI AND RCIC RECEIVED INITIATION SIGNALS AND THE RCIC SYSTEM INJECTED; HOWEVER, THE HPCI SYSTEM RECEIVED A TRIP SIGNAL AND THE INJECTION VALVE IMMEDIATELY CLOSED UPON REACHING FULL OPEN. THE OPERATOR MANUALLY OPENED THE HPCI INJECTION VALVE AND RESTORED LEVEL. REACTOR PRESSURE WAS CONTROLLED BY AUTO AND MANUAL SAFETY RELIEF VALVE ACTUATION. BY 1052 HOURS THE OPERATOR HAD RESET THE GROUP 1 AND 3 ISOLATIONS, AND REESTABLISHED THE CONDENSER AS A HEAT SINK. THE HIGH REACTOR LEVEL WAS DUE TO A FEEDWATER LOGIC CONTROL TOPAZ INVERTER TRIPPING ON HIGH INPUT VOLTAGE. THE MSIV DUAL INDICATION WAS DUE TO A LIMIT SWITCH PROBLEM. HPCI IS BELIEVED TO HAVE TRIPPED ON LOW SUCTION PRESSURE (LSP). THE INVERTER HAS BEEN RECALIBRATED, THE MSIV LIMIT SWITCH HAS BEEN READJUSTED AND THE HPCI LSP TRIP HAS BEEN DISABLED. THIS EVENT HAD MINIMAL SAFETY SIGNIFICANCE.

FORM 88 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
325	1988	023	0	8811290031	213662	10/21/88

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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
STEPS 3,4: PART NO. 11500-100. STEP 8: EFF ED - HIGH CONDUCTIVITY. STEP 11: PART NO. 112C3144. STEP 12: PART NO. 175A9746P001. STEP 14: PART NO. 885D701G006. STEP 15: PART NO. 209A5034P003. STEP 16: PART NO. 112C2346P002. STEPS 21,22: TYPE CR120. STEP 29: MODEL NO. MIN-1.

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 - 027%. AT 1243 HOURS ON 10/21/88, UNIT 1 AUTOMATICALLY SCRAMMED, WHILE AT APPROXIMATELY 27% POWER, DUE TO A MAIN TURBINE TRIP/TURBINE STOP VALVE CLOSURE CAUSED BY A HIGH REACTOR LEVEL OF </= 208 INCHES. THIS OCCURRED AFTER SHIFTING FROM THREE-ELEMENT TO ONE-ELEMENT FEEDWATER CONTROL DURING A PLANNED POWER REDUCTION FOR A DRYWELL ENTRY TO REPAIR REACTOR WATER CLEANUP (RWCU) SYSTEM (G31) INBOARD PRIMARY CONTAINMENT ISOLATION VALVE G31-F001. NO PRIMARY CONTAINMENT ISOLATIONS OCCURRED AND THE HIGH PRESSURE COOLANT INJECTION SYSTEM, AUTOMATIC DEPRESSURIZATION SYSTEM, RESIDUAL HEAT REMOVAL/LOW PRESSURE COOLANT INJECTION SYSTEM, THE A AND B CORE SPRAY SUBSYSTEMS, AND THE REACTOR CORE ISOLATION COOLING SYSTEM REMAINED IN STANDBY READINESS. THIS EVENT HAD MINIMAL IMPACT ON PLANT SAFETY. THE HIGH LEVEL RESULTED FROM A FALSE LOW LEVEL SIGNAL TO FEEDWATER (C32) MASTER LEVEL CONTROLLER, C32-R600, WHICH INCREASED FEEDWATER FLOW TO THE REACTOR. THE FALSE LOW LEVEL SIGNAL RESULTED FROM HIGH ELECTRICAL RESISTANCE ACROSS CONTACTS 3 AND 4 OF THE FEEDWATER CONTROL THREE-ELEMENT TO ONE-ELEMENT CONTROL TRANSFER RELAY, C32-K3. THE FAILURE MECHANISM OF K3 WILL BE FURTHER INVESTIGATED BY 3/15/89. K3 WAS REPLACED AND THE FEEDWATER CONTROL SYSTEM WAS RETURNED TO SERVICE. G31-F001 WAS REPAIRED AND THE RWCU SYSTEM WAS RETURNED TO SERVICE AT 1218 HOURS ON 10/23/88.

FORM 89 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
327	1980	005	0	8004150533	156124	03/11/80

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

ABSTRACT
POWER LEVEL - 000%. CAUSE - MAINTENANCE ERROR. WHILE PERFORMING SI-247.605 (RESPONSE TIME SI ON SAFEGUARDS RELAY K605), THE REACTOR SOLID STATE PROTECTION SYSTEM WAS PLACED IN THE "INPUT INHIBIT" MODE. THIS REMOVED THE HIGH VOLTAGE FROM THE SOURCE RANGE CHANNEL N31. ONLY ONE SOURCE RANGE CHANNEL WAS THEN IN SERVICE. UNIT WAS IN MODE 6 BUT NO CORE ALTERATIONS WERE TAKING PLACE. THE SOURCE RANGE HIGH VOLTAGE WAS REMOVED BECAUSE OF THE ABNORMAL STATUS OF A SOURCE RANGE VOLTAGE CUT OUT RELAY. FUSES L19 AND L20 HAD BEEN REMOVED WHICH PREVENTED OPERATION OF THIS RELAY. THE FUSES WERE REPLACED.

FORM 90 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
327	1982	050	0	8205180393	173358	04/13/82

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

COMMENTS
STEP 2: COMPONENT XA - ANNUNCIATOR HORN.

ABSTRACT
AT 0040 ON 04/13/82, WITH UNIT 1 IN MODE 1, DIESEL GENERATOR (D/G) 1A-A WAS DECLARED INOPERABLE WHEN POWER FUSES BLEW IN THE CONTROL CIRCUITRY. THE ACTION STATEMENT OF LCO 3.8.1.1 WAS COMPLIED WITH. INVESTIGATION REVEALED A BROKEN LEAD ON THE ANNUNCIATOR HORN HAD SHORTED TO THE CASE, CAUSING THE FUSES TO BLOW. THE HORN WAS REPLACED AND THE D/G WAS DECLARED OPERABLE AT 0716 ON 04/13/82. THE PRESENT SURVEILLANCE FREQUENCY IS EVERY 31 DAYS.

FORM 91 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
327	1983	009	0	8302240266	189874	01/31/83

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

COMMENTS
STEP 2 AND 3: EFFECT IX - REDUCED VOLTAGE

ABSTRACT
UNIT 1 IN MODE 1 AT 100% POWER. AT 1226 HRS DURING THE PERFORMANCE OF SPECIAL TEST INSTRUCTION 82-06, THE CONTROL ROD POSITION INDICATION SYSTEM WAS INOPERABLE WHEN THE INDICATED POSITION FOR ALL RODS DEVIATED GREATER THAN 12 STEPS FROM ACTUAL ROD POSITION. THIS EVENT CAUSED ENTRY INTO LCOS 3.1.3.2 AND 3.0.3. SPECIAL TEST INSTRUCTION 82-06 WAS BEING RUN UNDER DEGRADED VOLTAGE CONDITIONS. WHEN THE 480 V SHUTDOWN BOARD VOLTAGE WAS REDUCED TO 410 VOLTS, THIS CAUSED THE ROD POSITION INDICATION SYSTEM TO INDICATE ERRONEOUS POSITIONS. AT 1228 HRS, 480 V BOARD VOLTAGE WAS RAISED AND ALL ROD POSITIONS INDICATED NORMAL. EMPHASIS WAS PLACED ON A MORE DETAILED EVALUATION OF DEGRADED VOLTAGE TESTS, IF REQUIRED, IN THE FUTURE.

FORM 92 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
327	1985	009	0	8503070005	193361	01/28/85

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

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

ABSTRACT
POWER LEVEL - 100%. ALL ROD POSITION INDICATION SIMULTANEOUSLY LOWERED APPROX 20 STEPS RESULTING IN MISALIGNMENT FROM THE STEP COUNTER OF GREATER THAN 12 STEPS ALLOWED BY TECH SPECS. ALL POWER PARAMETERS REMAINED UNCHANGED INDICATING FALSE ROD POSITION INDICATION READINGS. ALL ROD POSITION INDICATORS GRADUALLY RETURNED TO NORMAL IN 9 MINS. IT WAS DETERMINED THAT THE ONLY FAILURE WHICH COULD CAUSE ALL OF THE RPI'S TO FAIL WOULD BE AN INTERRUPTION OR REDUCTION IN 120V AC POWER. AFTER IT WAS DETERMINED THAT NO BREAKER SWITCHING HAD OCCURRED, A CHECK WAS MADE OF THE SOLATRON LINE VOLTAGE REGULATOR IN THE CABLE SPREADING ROOM. THIS CHECK REVEALED SMALL (2-3 INCH DIAMETER) PUDDLES OF WATER BENEATH THE SOLATRON. THE MOST LIKELY SEQUENCE OF EVENTS WAS WETTING OF THE SOLATRON INDUCTION CIRCUITRY RESULTING IN VOLTAGE REDUCTION. AS THE MOISTURE DISSIPATED DUE TO THE HEAT GENERATED BY THE UNIT, THE NORMAL VOLTAGE WAS REESTABLISHED, AND THE RPI'S GRADUALLY RETURNED TO NORMAL. NO DAMAGE TO THE SOLATRON WAS NOTED. THE ACTUAL MEANS OF WATER ENTERING THE SOLATRON COULD NOT BE DETERMINED.

FORM 93 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
327	1987	061	1	8803040223	208435	08/31/87

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

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

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

REFERENCE LERS:

1 327/84-046	2 327/84-049	3 327/84-051	4 327/84-057
5 327/84-059	6 327/84-063	7 327/84-067	8 327/84-074
9 327/85-002			

ABSTRACT
POWER LEVEL - 000%. THIS LER IS BEING REVISED IN ITS ENTIRETY TO PROVIDE ADDITIONAL INFORMATION RELATING TO PREVIOUSLY REPORTED 10 CFR 50 APPENDIX R DEFICIENCIES, TO UPDATE THE CORRECTIVE ACTIONS TAKEN BY TVA, AND TO CLARIFY THE CONTROLS THAT ARE CURRENTLY IN PLACE TO PREVENT THE RECURRENCE OF THIS EVENT. ON 8/31/87, WITH UNITS 1 AND 2 IN MODE 5 (COLD SHUTDOWN), IT WAS DETERMINED THAT A FAULT IN APPENDIX R ASSOCIATED CIRCUITS COULD HAVE CAUSED A REQUIRED CIRCUIT ON THE 125-VOLT DC VITAL BATTERY BOARDS AND/OR THE 480-VOLT SHUTDOWN BOARDS TO BE INTERRUPTED. THE CONDITIONS ON THE 125-VOLT BATTERY BOARDS WERE CAUSED BY INADEQUATE DESIGN PROCEDURES WHILE THE CONDITIONS ON THE SHUTDOWN BOARDS WERE CAUSED BY AN INADEQUATE DESIGN CHANGE CONTROL PROCESS. THE DESIGN PROCEDURES THAT WERE USED TO CALCULATE SELECTIVE COORDINATION BETWEEN FUSE AND BREAKER COMBINATIONS IN CIRCUITS POWERED BY THE 125-VOLT BATTERY BOARDS DID NOT REQUIRE ACTUAL CONSTRUCTED CABLE LENGTHS TO BE USED. THE DESIGN CHANGE CONTROL PROCESS THAT WAS FOLLOWED WHEN MODIFICATIONS WERE MADE TO THE CIRCUITS POWERED BY THE 480-VOLT SHUTDOWN BOARDS DID NOT REQUIRE SELECTIVE COORDINATION CALCULATIONS TO BE PERFORMED. THE IDENTIFIED CIRCUITS HAVE BEEN EVALUATED, AND CORRECTIVE ACTIONS TO OBTAIN PROPER SELECTIVE COORDINATION (OR DELETE THE REQUIREMENT FOR SAME) HAS BEEN COMPLETED.

FORM 94 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
327	1988	002	0	8802080125	208231	01/05/88

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

COMMENTS
STEP 4: COMP RA - INSTRUMENT MALFUNCTION ALARM. STEP 8: FAILURE TO SAMPLE SERVICE WATER TRAIN B WHILE BOTH MONITORS WERE INOPERABLE. $A/PT

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

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

ABSTRACT
POWER LEVEL - 000%. ON JANUARY 5, 1988, WITH UNITS 1 AND 2 IN MODE 5 (0 PERCENT POWER, 4 PSIG, 120 DEGREES F AND 0 PERCENT POWER, 100 PSIG, 128 DEGREES F, RESPECTIVELY), AT APPROXIMATELY 1730 EST IT WAS DISCOVERED THAT A LIMITING CONDITION FOR OPERATION (LCO) WAS NOT COMPLIED WITH AS REQUIRED BY SEQUOYAH NUCLEAR PLANT (SQN) TECH SPECS. ON JANUARY 4, 1988, AT APPROXIMATELY 1630 EST OPERATIONS PERSONNEL DECLARED RADIATION MONITORS (RMS) 0-RM-90-134 AND 0-RM-90-141 INOPERABLE, HOWEVER, OPERATIONS PERSONNEL DID NOT COMPLY WITH ACTION STATEMENT 32 OF LCO 3.3.3.9 FOR AN INTERVAL OF APPROXIMATELY 13 HOURS. AN INVESTIGATION INTO THIS EVENT CONCLUDED THAT A SUFFICIENT DESCRIPTION TO DETERMINE THE MINIMUM CHANNELS OF MONITORING REQUIRED TO ENSURE COMPLIANCE FOR THE LCO DID NOT EXIST. THIS RESULTED IN OPERATIONS PERSONNEL INCORRECTLY INTERPRETING THE REQUIREMENTS FOR COMPLIANCE OF THE LCO. AS A RESULT, THE ACTION OF THE LCO WAS NOT ENTERED. AS IMMEDIATE CORRECTIVE ACTION UPON DISCOVERY OF THE NONCOMPLIANCE, OPERATIONS NOTIFIED CHEMISTRY TO INITIATE THE LCO ACTION STATEMENT. TO PREVENT RECURRENCE A TECH SPEC INTERPRETATION IS BEING ISSUED TO STATE THAT ONE CHANNEL FOR EACH ERCW EFFLUENT LINE DISCHARGE HEADER IS REQUIRED TO BE OPERABLE DURING RELEASE THROUGH THESE PATH WAYS.

FORM 95 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
327	1989	005	1	8906270186	214406	02/10/89

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

COMMENTS
STEP 12: COMP XA - TURBINE OVERSPEED FIRST-OUT ANNUNCIATOR. STEP 15: COMP MSC - POSITIONER FEEDBACK ARM.

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

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

REFERENCE LERS:
1 327/84-054 2 327/88-036 3 328/88-023 4 328/88-027

ABSTRACT
POWER LEVEL - 100%. ON 2/10/89 WITH UNIT 1 IN MODE 1, A REACTOR TRIP OCCURRED AT 2036 EST. THE TRIP SIGNAL WAS A RESULT OF A STEAM GENERATOR (SG) STEAM FLOW TO FEEDWATER FLOW MISMATCH OF GREATER THAN 40% OF THE NOMINAL VALUE OF STEAM FLOW AT FULL POWER COINCIDENT WITH A LOW SG LEVEL (25%) SIGNAL ON SG LOOP 3. TWO INSTRUMENT MAINTENANCE (IM) TECHNICIANS WERE IMPLEMENTING WORK REQUEST (WR)-B238429 ON FLOW RECORDER (FR)-2-200/201, "CONDENSER BYPASS/MAKEUP FLOW." THE RECORDER PEN NEEDED TO BE RESTRUNG WHICH REQUIRED IT TO BE REMOVED FROM THE CASE. THE TECHNICIANS FULLY REMOVED THE RECORDER IN ITS CASE WHICH REQUIRED LIFTING THE POWER SUPPLY LEADS. AFTER REINSTALLATION, THE TECHNICIANS RETERMINATED THE POWER SUPPLY LEADS, AT WHICH TIME ONE TECHNICIAN DETERMINED THE TERMINATING LEADS WERE TOO CLOSE TO EACH OTHER. THE TECHNICIAN INADVERTENTLY SHORTED A SCREWDRIVER BETWEEN THE TERMINALS, TRIPPING OPEN BREAKER NO. 39 ON 120-VAC VITAL INSTRUMENT BOARD I-II WHICH IS THE POWER SUPPLY TO A PLUG MOLD SUPPLYING THE RECORDER. THE PLUG MOLD IS ALSO THE COMMON POWER SUPPLY TO THE FLOW INDICATING CONTROLLERS (FIC)-3-35, -90, AND -103 WHICH CONTROL MAIN FEEDWATER REGULATING VALVES (MFWRVS) FCV-3-35, -90, AND -103 FOR SG LOOPS 1, 3, AND 4. ROOT CAUSE OF THE REACTOR TRIP SIGNAL WAS PERSONNEL ERROR, IN THAT, APPROPRIATE PRECAUTIONS WERE NOT TAKEN IN PERFORMING TERMINATIONS OF ENERGIZED EQUIPMENT.

FORM 96 LER SCSS DATA 08-30-91.

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
327	1990	021	0	9010230284	219736	09/14/90

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

COMMENTS
STEP 28: COMP MSC - INERTIA LATCH.

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

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

ABSTRACT
POWER LEVEL - 098%. ON SEPTEMBER 14, 1990, WITH UNIT 1 IN MODE 1, A REACTOR TRIP OCCURRED AT 1613 EASTERN DAYLIGHT TIME. THE TRIP WAS GENERATED FROM A LOW-LOW STEAM GENERATOR WATER LEVEL SIGNAL IN LOOP 2. THE LOW LEVEL WAS THE RESULT OF A FEEDWATER TRANSIENT INITIATED BY THE FAILURE OF A VITAL INVERTER. THE INVERTER FAILURE OCCURRED AFTER THE COMPLETION OF MAINTENANCE ACTIVITIES ON THE INVERTER AND DURING THE TRANSFER OF THE INVERTER FROM ITS MAINTENANCE POWER SUPPLY TO ITS NORMAL POWER SUPPLY. DURING THE TRANSFER, THE INVERTER OUTPUT VOLTAGE DROPPED TO ZERO BECAUSE OF THE RANDOM FAILURE OF THE INVERTER'S SILICON-CONTROLLED RECTIFIERS. THIS DEENERGIZED THE 1-II VITAL INSTRUMENT POWER BOARD. THE LOSS OF POWER RESULTED IN THE MAIN FEEDWATER REGULATOR VALVES CLOSING AND THE MAIN FEEDWATER PUMPS DROPPING TO MINIMUM SPEED. THIS REDUCED FEEDWATER FLOW TO ALL FOUR STEAM GENERATORS. PLANT SYSTEMS RESPONDED PROPERLY AND THE SHUTDOWN POSED NO DANGER TO PLANT EMPLOYEES OR THE GENERAL PUBLIC. THE UNIT WAS STABILIZED IN ACCORDANCE WITH PLANT PROCEDURES. THE VITAL INVERTER WAS REPAIRED AND RETURNED TO SERVICE ON SEPTEMBER 15, 1990.

FORM 97 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
331	1985	024	1	8509040038	197927	07/07/85

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

COMMENTS
STEP 2: COMP MSC - DAMPING SPRING; STEP 3: MODEL - ITE TYPE OD - 4;
REFERENCE LER DESCRIBES APRM SPIKING PROBLEMS SIMILAR TO STEPS 8 AND 14.

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

REFERENCE LERS:
1 331/85-034

ABSTRACT
POWER LEVEL - 000%. ON JULY 7, 1985 TWO REACTOR PROTECTION SYSTEM (RPS) TRIPS OCCURRED DUE TO AN UNATTACHED TRIP COIL INSIDE DAMPING SPRING ON AN ESSENTIAL BUS BREAKER. AT 1142 HOURS, WITH THE REACTOR IN COLD SHUTDOWN MODE AND REFUELED WITH ALL CONTROL RODS FULLY INSERTED, A FULL REACTOR PROTECTION SYSTEM TRIP OCCURRED. THE RECENTLY MODIFIED (DURING THE CURRENT REFUELING OUTAGE) FEEDER BREAKER FOR ESSENTIAL BUS 1B42 WHICH POWERS THE "B" RPS MOTOR-GENERATOR SET TRIPPED OPEN WHILE BEING LOADED, AND A CONCURRENT "E" AVERAGE POWER RANGE MONITOR (APRM) MOMENTARY UPSCALE SIGNAL OCCURRED. BOTH STANDBY FILTER UNITS INITIATED AS DESIGNED. THE STANDBY GAS TREATMENT SYSTEM AND GROUP II THROUGH V ISOLATIONS HAD PREVIOUSLY BEEN INITIATED. THE 1B42 FEEDER BREAKER WAS FOUND TO HAVE A LOW SUSTAINED CURRENT TRIP SETTING, WHICH WAS THEN ADJUSTED. AT 2230 HOURS, THE 1B42 FEEDER BREAKER AGAIN TRIPPED OPEN DURING LOADING, AND THE "A" RPS LOGIC TRIPPED ON TOO FEW INPUTS TO THE "A" APRM, AS PER DESIGN. THE FEEDER BREAKER WAS FURTHER EXAMINED AND FOUND TO HAVE AN UNATTACHED TRIP COIL INSIDE DAMPING SPRING. THIS WAS DETERMINED TO HAVE BEEN THE CAUSE OF BOTH RPS TRIPS. THE SPRING WAS REATTACHED AND OTHER BREAKERS INSPECTED FOR SIMILAR PROBLEMS. THE "E" APRM CIRCUITRY WAS INSPECTED AND MINOR ADJUSTMENTS COMPLETED.

FORM 98 LER SCSS DATA 08-30-91.

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
331	1985	031	0	8509040369	196080	08/02/85

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

COMMENTS
STEP 1: OIL LEAKED FROM A CAPACITOR INSIDE AN INVERTER; STEP 2: MODEL 125-GW-125-60-115, MOD. R.

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 - 093%. AT 1108 HRS ON 8-2 THE RCIC TURBINE/PUMP INITIATION AND CONTROL POWER STATIC INVERTER WAS REMOVED FROM SERVICE, RENDERING THE RCIC SYSTEM INOPERABLE. PER TECH SPEC 3.5.E.2, A 7 DAY LCO WAS ENTERED, CONTINGENT UPON THE OPERABILITY OF THE HPCI. THE HPCI SYSTEM SATISFACTORILY COMPLETED ITS OPERABILITY TEST ON 8-2-85. THE RCIC SYSTEM STATIC INVERTER PROVIDES 115V AC POWER TO THE RCIC TURBINE/PUMP INITIATION AND CONTROL INSTRUMENTATION. IT RECEIVES ITS INPUT POWER FROM 125V DC SYSTEM I. ON 8-2, THE '125V DC SYSTEM I TROUBLE' ALARM WAS RECEIVED IN THE CONTROL ROOM, FOLLOWED A FEW SECONDS LATER BY THE CONTROL ROOM PANEL 1C04 SMOKE ALARM AND AN INDICATION ON THE CONTROL ROOM FIRE SYSTEM ANNUNCIATOR PANEL. AN OPERATOR QUICKLY INVESTIGATED, AND FOUND THE RCIC STATIC INVERTER WAS EMITTING SMOKE. A REACTOR LEVEL INDICATOR POWERED OFF THE INVERTER, FAILED DOWNSCALE WHEN THE INVERTER POWER WAS SECURED. THE SOURCE OF THE SMOKE WITHIN THE RCIC STATIC INVERTER WAS OIL WHICH HAD LEAKED FROM A CAPACITOR. THE INVERTER IS A TOPAZ ELECTRONICS MODEL 125-GW-125-60-115, MOD. R. THE INVERTER WAS REPLACED AND THE RCIC SYSTEM RETURNED TO SERVICE ON 8-2-85 AT 1825 HRS, ENDING THE 7 DAY LCO. A PREVENTIVE MAINTENANCE PROCEDURE IS BEING DEVELOPED AND WILL BE SCHEDULED ONCE PER REFUEL OUTAGE.

FORM 99 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
331	1987	013	0	8706150125	204857	05/08/87

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

COMMENTS
STEP 9: TYPE CR120A .

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:
1 331/84-008 2 331/85-024

ABSTRACT
POWER LEVEL - 000%. ON MAY 8 AND 9, 1987, WITH ALL FUEL REMOVED FROM THE VESSEL, TWO FULL REACTOR PROTECTION SYSTEM (RPS) TRIPS WERE RECEIVED. AN INTERMEDIATE CAUSE OF EACH EVENT IS TOO FEW INPUTS TO THE AVERAGE POWER RANGE MONITORING (APRM) SUBSYSTEM. ON MAY 8, 1987, A FULL RPS TRIP OCCURRED WHEN MOTOR CONTROL CENTER 1B42 WAS DE-ENERGIZED FOR PREPLANNED MAINTENANCE. POWER WAS LOST TO THE 'B' RPS LOGIC AS EXPECTED (RESULTING IN A 'B' RPS TRIP). HOWEVER, DUE TO OTHER PREPLANNED MAINTENANCE ON THE LOCAL POWER RANGE MONITORING SYSTEM (LPRM), TOO FEW INPUTS WERE AVAILABLE TO APRM C AND AN APRM INOP TRIP OCCURRED IN THE 'A' RPS. AS A CORRECTIVE ACTION, 1B42 WAS RE-ENERGIZED AND THE FULL RPS TRIP WAS RESET. THE ROOT CAUSE OF THE EVENT WAS INADEQUATE PRE-WORK REVIEW OF THE CURRENT SYSTEM STATUS. ON MAY 9, 1987, A FULL RPS TRIP OCCURRED WHEN THE 'A' RPS MOTOR GENERATOR (MG) SET TRIPPED DUE TO A FAULTY RELAY AND TOO FEW INPUTS WERE AVAILABLE TO APRM D BECAUSE OF LPRM MAINTENANCE. AS A CORRECTIVE ACTION, THE RELAY WAS REPLACED ON MAY 12, 1987. THE ROOT CAUSE OF THE RELAY FAILURE IS UNKNOWN. IN BOTH EVENTS THE CONTROL ROD DRIVE HYDRAULIC CONTROL UNITS WERE ELECTRICALLY DISABLED AND NO CONTROL ROD MOTION OCCURRED. THERE WAS NO AFFECT ON THE HEALTH AND SAFETY OF THE PUBLIC. THESE EVENTS ARE BEING REPORTED PURSUANT TO 10 CFR 50.73(A)(2)(IV).

FORM 100 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
333	1989	016	0	8910250321	215682	09/18/89

DOCKET:333 FITZPATRICK TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: POWER AUTHORITY OF THE STATE OF NY
SYMBOL: PNY

COMMENTS
STEPS 2,7: EFF IX - TRANSFER FROM NORMAL TO ALTERNATE POWER SUPPLY.

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.

REFERENCE LERS:
1 333/84-004 2 333/85-020 3 333/86-004 4 333/87-006
5 333/87-021 6 333/88-012

ABSTRACT
POWER LEVEL - 000%. ON SEPTEMBER 18, 1989 WITH THE PLANT SHUTDOWN FOR A PLANNED MAINTENANCE OUTAGE, THE POWER SUPPLY FOR THE REACTOR PROTECTION SYSTEM (RPS)(VC) BUS WAS TRANSFERRED FROM NORMAL POWER SUPPLY FROM THE RPS MOTOR GENERATOR SETS (MG)(MG) TO THE ALTERNATE POWER SUPPLY IN ACCORDANCE WITH AN APPROVED PROCEDURE. THE TRANSFER WAS NECESSARY TO PERMIT PLANNED MAINTENANCE WORK ON THE RPS MG SETS. ALTHOUGH THE CONTROL RODS WERE ALREADY FULLY INSERTED, A SCRAM SIGNAL WAS AUTOMATICALLY INITIATED DURING THE BUS TRANSFER. THE PROCEDURE PROVIDES FOR TRANSFER OF THE A RPS POWER WHICH GENERATES A HALF SCRAM DUE TO THE MOMENTARY LOSS OF POWER. THIS IS FOLLOWED BY MANUAL RESET OF THE A SIDE HALF SCRAM AND THEN TRANSFER OF THE B RPS POWER FOLLOWED BY MANUAL RESETTING OF THE RESULTANT B SIDE HALF SCRAM. THE PROCEDURE DID NOT PROVIDE GUIDANCE ON THE TIME INTERVAL TO BE ALLOWED BETWEEN BUS TRANSFER. THE RESET OF THE A SIDE WAS COMPLETED WITHIN FOUR SECONDS OF THE TRANSFER. IN THE NEXT FOUR SECONDS THE B SIDE WAS TRANSFERRED AND A FULL SCRAM RESULTED. THE MAIN STEAM LINE RADIATION MONITOR POWERED FROM THE A RPS BUS WAS NOT YET STABILIZED FOLLOWING THE TRANSFER AND INITIATED A FALSE HALF SCRAM SIGNAL LESS THAN A TENTH OF A SECOND BEFORE THE B SIDE WAS TRANSFERRED. THE COMBINATION OF SCRAM SIGNALS ON BOTH THE A AND B RPS CHANNELS RESULTED IN FULL SCRAM.

FORM 101 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
334	1980	043	0	8007090338	158678	06/05/80

DOCKET:334 BEAVER VALLEY 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: DUQUESNE LIGHT CO.
SYMBOL: DUQ

ABSTRACT
POWER LEVEL - 000%. CAUSE - FAILED POWER SUPPLY. ONE SOURCE RANGE CHANNEL WAS LOST DUE TO FAILED HIGH VOLTAGE POWER SUPPLY. A NEW POWER SUPPLY WAS INSTALLED AND THE SOURCE RANGE CHANNEL WAS TESTED SUCCESSFULLY. BOTH SOURCE RANGE AND INTERMEDIATE RANGE POWER SUPPLIES HAVE FAILED PREVIOUSLY.

FORM 102 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
334	1980	085	0	8012120535	161838	11/24/80

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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

ABSTRACT
POWER LEVEL - 000%. CAUSE - NOT DETERMINED. TWO OUT OF FOUR NUCLEAR POWER RANGE INSTRUMENTS WERE INDICATING ZERO PERCENT POWER. IT WAS FOUND THAT THE HIGH VOLTAGE PROTECTION CIRCUIT HAD ACTUATED, DEENERGIZING THE DETECTORS. CONSIDERING THAT THE CIRCUIT IS FOR HIGH VOLTAGE PROTECTION, THERE HAD TO HAVE BEEN A VOLTAGE SPIKE TO ACTUATE THE CIRCUIT. THERE IS NO TRACEABLE INFORMATION TO INDICATE A VOLTAGE INCREASE. A CHANGE WAS MADE TO THE SHIFT TURNOVER CHECKLIST TO ADDRESS CHECKING THE INSTRUMENTS EVERY SHIFT.

FORM 103 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
334	1980	096	0	8012230538	161841	11/21/80

DOCKET:334 BEAVER VALLEY 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: DUQUESNE LIGHT CO.
SYMBOL: DUQ

ABSTRACT
POWER LEVEL - 020%. CAUSE - CONTROL SYSTEM FAILURE. DURING A POWER INCREASE FROM REACTOR CRITICALITY, A CONTROL PROBLEM WITH THE BYPASS AND MAIN FEED REGULATING VALVES CAUSED A TRANSIENT IN THE REACTOR COOLANT SYSTEM (RCS) THAT COULD NOT BE CONTROLLED WITHIN LIMITS WITH THE PRESSURIZER PRESSURE CONTROL IN MANUAL. AUTO CONTROL WAS INOPERABLE. PRESSURIZER PRESSURE WAS BELOW THE TECH SPEC LIMIT OF 2220 PSIA FOR ABOUT EIGHT MINUTES AND RCS TAVG WAS LESS THAN THE TECH SPEC LIMIT OF 541F FOR ABOUT TWO MINUTES. NEW CONTROL MODIFICATION FOR FEED BYPASS VALVES WAS NOT PROPERLY TUNED. A BAD POWER SUPPLY FUSE CONNECTOR FOR FEED FLOW INPUT TO THE 1B STEAM GENERATOR LEVEL CONTROLLER CAUSED MAIN FEED VALVE TO FULLY OPEN IN AUTO. AUTO-MANUAL STATION FOR THE "B" PRESSURIZER SPRAY VALVE FAILED. CONNECTIONS AT THE AUTO-MANUAL STATION FOR THE "A" PRESSURIZER SPRAY VALVE WERE DIRTY. CONTROL SYSTEMS WERE REPAIRED, TUNED.

FORM 104 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
334	1985	017	1	8704060198	203808	09/26/85

DOCKET:334 BEAVER VALLEY 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: DUQUESNE LIGHT CO.
SYMBOL: DUQ

COMMENTS
STEP 1: MODEL POW01. STEP 2: EFFECT LX - CALIBRATION MODE FAILURE; MODEL AIM-00. STEPS 7,8: MODEL 1140.

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

ABSTRACT
POWER LEVEL - 100%. ON 9/26/85 AT 1023 HOURS, WHILE OPERATING AT 100% POWER, THE PLANT VARIABLE COMPUTER (PVC) WAS RETURNED TO SERVICE AFTER HAVING A POWER SUPPLY REPLACED (BAILEY MODEL NUMBER POW01) IN DATA INPUT NODE (DIN) 3. AT THIS TIME, THE DELTA-FLUX-OUT-OF-BAND ALARM CAME IN. THIS WAS DUE TO A FAULT WITHIN THE PVC CAUSING THE NUCLEAR INSTRUMENTATION SYSTEM (NIS) CHANNELS N42 AND N43 DATA INPUTS TO THE PLANT'S P250 COMPUTER TO READ APPROXIMATELY 20% LOW. THE COMPUTER ENGINEER IMMEDIATELY BEGAN TROUBLESHOOTING AND, AT 1115 HOURS, DETERMINED THE PROBLEM TO BE IN THE ANALOG INPUT MODULE (BAILEY MODEL AIM-00) IN SLOT 12 OF DIN 3. AT 1120 HOURS, THE OPERATORS ALSO DISCOVERED THAT CONTROL BANKS C AND D ANALOG ROD POSITION INDICATORS (RPI'S WERE INDICATING INCORRECT ROD POSITION (200 STEPS INDICATED AS OPPOSED TO 228 AND 225 STEPS ACTUAL). THE COMPUTER ENGINEER IMMEDIATELY DEENERGIZED DIN 3 AT 1125 HOURS. THIS CAUSED THE RPI'S AND THE NIS DATA TO THE P250 TO RETURN TO NORMAL. THE FAULTED MODULE WAS REPLACED AND THE DIN RETURNED TO SERVICE. IT WAS DETERMINED THAT WHILE THE PVC IS ISOLATED FROM SAFETY RELATED EQUIPMENT/PROTECTION INSTRUMENTATION, IT IS NOT ISOLATED FROM SOME NON-SAFETY RELATED BUT TECH SPEC REQUIRED EQUIPMENT. AN INVESTIGATION HAS IDENTIFIED WHICH STATION COMPONENTS COULD BE AFFECTED BY A PVC FAULT. CORRECTIVE ACTION HAS BEEN INITIATED TO PREVENT A WORST CASE PVC FAULT FROM AFFECTING REQUIRED COMPONENTS.

FORM 105 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
334	1985	018	0	8511180511	198231	10/04/85

DOCKET:334 BEAVER VALLEY 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: DUQUESNE LIGHT CO.
SYMBOL: DUQ

COMMENTS
STEP 2: PSYS HF - NORMAL SWITCHGEAR ROOM; STEP 5: EFFECT KX - IMPROPER FIRING SEQUENCE; STEP 14: COMP XA - PROTECTION CHANEL III BISTABLE LIGHTS.

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

ABSTRACT
POWER LEVEL - 040%. ON 10-4-85 AT 1402 HRS, NUMEROUS ALARMS ANNUNCIATED, INCLUDING SEVERAL FIRST OUT ANNUNCIATORS AND A VITAL BUS III INVERTER TROUBLE ALARM. AT THIS TIME, THE REACTOR HAD NOT TRIPPED AND THE OPERATORS, CHECKING THE CONTROL BOARD INDICATIONS, VERIFIED THAT VITAL BUS III HAD FAILED. PRIOR TO THE VITAL BUS FAILURE, ALL SG LEVEL CONTROLLERS WERE IN AUTO. THE 'A' STEAM GENERATOR LEVEL CONTROLLER REMAINED IN AUTO AND WENT FULL OPEN IN RESPONSE TO THE LEVEL ERROR SIGNAL. THE 'B' SG LEVEL CONTROLLER WENT INTO MANUAL IN RESPONSE TO THE LOSS OF POWER TO THE CONTROLLER. THE 'C' SG LEVEL CONTROLLER WENT INTO THE AUTO-HOLD MODE DUE TO A LOSS OF POWER TO THE AUTO/MANUAL STATION. THE VALVE POSITIONS OF THE B AND C SG'S DID NOT CHANGE. WHILE ATTEMPTING TO RESTORE SG LEVELS, THE 'A' SG REACHED THE HI-HI LEVEL SETPOINT CAUSING A TURBINE TRIP, REACTOR TRIP, AND A FEEDWATER ISOLATION. THE OPERATORS FOLLOWED THE EMERGENCY PROCEDURES AND STABILIZED THE PLANT. THE VITAL BUS WAS LOST WHEN THE INPUT FUSE TO THE #3 INVERTER FAILED. IT HAS BEEN DETERMINED THAT THE FUSE FAILED AS THE RESULT OF A MISFIRING SILICON CONTROL RECTIFIER. THE RECTIFIER WAS MISFIRING BECAUSE OF HIGH AMBIENT TEMPERATURES PRESENT THAT DAY DUE TO AN OFF-NORMAL VENTILATION ARRANGEMENT IN THE SWITCHGEAR ROOMS.

FORM 106 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
334	1986	001	0	8603170525	199192	02/10/86

DOCKET:334 BEAVER VALLEY 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: DUQUESNE LIGHT CO.
SYMBOL: DUQ

COMMENTS
STEP 1: COMP RK- INVERTER CABINET. STEP 2: CONTROL MODULE CARD 9549-51.
STEP 4: EFF IX- MISFIRING.

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.

ABSTRACT
POWER LEVEL - 100%. ON 2/10/86, AT 1926 HOURS, 120 VAC VITAL BUS III DE-ENERGIZED. THE LOSS OF THE VITAL BUS CAUSED THE 'A' STEAM GENERATOR CONTROLLER TO OVERFEED, RESULTING IN A HIGH-HIGH STEAM GENERATOR (75%) TURBINE TRIP, REACTOR TRIP, AND FEEDWATER ISOLATION AT 1927 HOURS. THE PLANT WAS STABILIZED IN HOT STANDBY BY 1950 HOURS. THE CAUSE OF THE VITAL BUS LOSS WAS A FAILED INPUT FUSE TO THE INVERTER. THE VENDOR BELIEVES THE FAILURE TO HAVE BEEN CAUSED BY A MISFIRING SILICON RECTIFIER CARD EXPOSED TO HIGH TEMPERATURE. FOLLOWING THE TRIP, SOURCE RANGE DETECTOR N-31 FAILED AND WAS DECLARED INOPERABLE. DURING REPLACEMENT, THE INTERMEDIATE RANGE DETECTOR N-35 WAS PLACED ON CLEARANCE. WHILE REMOVING THE INSTRUMENT FUSES, THE OPERATORS FAILED TO BYPASS THE HIGH FLUX TRIP SIGNAL AND THE REACTOR TRIPPED AT 1727 HOURS ON 2/11/86. PROCEDURES WILL BE CHANGED TO PERMIT A MORE RAPID CHANGE TO VITAL BUS ALTERNATE SUPPLY, AND CAUTION TAGS WILL BE POSTED ON FLUX DETECTORS TO REMIND OPERATORS OF THE TRIP LOGIC. THE REACTOR RETURNED TO CRITICALITY AT 1430 HOURS ON 2/12/86.

FORM 107 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
334	1987	007	0	8705150325	204407	04/09/87

DOCKET:334 BEAVER VALLEY 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: DUQUESNE LIGHT CO.
SYMBOL: DUQ

COMMENTS
STEP 5: COMP XA - EVACUATION ALARM.

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 4/9/87 AT 0940 HOURS, DURING NORMAL FULL POWER OPERATION, A MAIN FILTER BANK ACTUATION OCCURRED. WHILE PERFORMING MAINTENANCE ON A MULTIPOINT RADIATION RECORDER, A METER AND CONTROL REPAIRMAN (MCR) MOMENTARILY SHORTED THE RECORDER POWER SUPPLY CAUSING A 120VAC VITAL BUS 2 SPIKE. THIS CAUSED A SPIKE ON THE 'A' TRAIN AUXILIARY BUILDING VENTILATION RADIATION MONTOR, INITIATING FLOW THROUGH THE MAIN FILTER BANK. THE VENTILATION OPERATORS RESET THE RADIATION MONITOR AND INITIATED ACTIONS TO RETURN THE SYSTEM TO NORMAL OPERATION. THE CAUSE FOR THIS EVENT WAS PERSONNEL ERROR BECAUSE BOTH INSTRUMENT AND CONTROL (I&C) AND OPERATIONS PERSONNEL FAILED TO REALIZE THAT RECORDER DEENERGIZATION COULD HAVE BEEN EASILY ACCOMPLISHED PRIOR TO MAINTENANCE INITIATION. THIS EVENT IS REPORTABLE IN ACCORDANCE WITH 10 CFR 50.72.B.2.II AND 10 CFR 50.73.A.2.IV. TO PREVENT FUTURE OCCURRENCES OF THIS TYPE, BOTH I&C AND OPERATIONS PERSONNEL WILL BE TRAINED ON THE PROPER USE OF THE TERMINAL BLOCK POWER DISCONNECT PINS AVAILABLE FOR RECORDER DEENERGIZATION. TERMINAL BLOCK POWER DISCONNECT PIN LOCATIONS WILL ALSO BE POSTED AT THE REAR OF THE RADIATION MONITOR RACKS CONTAINING THE RECORDERS. THERE WERE NO SAFETY IMPLICATIONS TO THE PUBLIC BECAUSE THE SYSTEM FUNCTIONED AS DESIGNED UPON RECEIPT OF A HIGH-HIGH RADIATION SIGNAL FOR THE AUXILIARY BUILDING VENTILATION SYSTEM.

FORM 108 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
334	1987	018	1	8712010026	207264	10/22/87

DOCKET:334 BEAVER VALLEY 1 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: DUQUESNE LIGHT CO.
SYMBOL: DUQ

COMMENTS
STEP 3: CAUSE AX - CHART PAPER REPLACEMENT ACTIVITY FOR THE WATT RECORDER; COMP MSC - CHART PAPER DRIVE UNIT ELECTRICAL POWER CORD PLUG. STEP 4: MODEL KF-44.

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

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

ABSTRACT
POWER LEVEL - 100%. ON 10/22/87 AT 0457 HOURS, DURING NORMAL FULL POWER OPERATION, A MAIN FILTER BANK AND CONTROL ROOM PRESSURIZATION ACTUATION OCCURRED. WHILE CHANGING THE GENERATOR WATT RECORDER CHART PAPER, THE REACTOR OPERATOR MOMENTARILY SHORTED THE RECORDERS POWER SUPPLY CAUSING A 120 VAC VITAL BUS 2 SPIKE. THIS CAUSED A SPIKE ON THE "A" TRAIN AUXILIARY BUILDING VENTILATION RADIATION MONITOR INITIATING FLOW THROUGH THE MAIN FILTER BANK AND A SPIKE ON THE "B" CONTROL ROOM RADIATION MONITOR INITIATING CONTROL ROOM PRESSURIZATION. THE OPERATORS RESET THE RADIATION MONITORS AND INITIATED ACTIONS TO RETURN THE SYSTEMS TO NORMAL OPERATION. THIS EVENT WAS CAUSED BY THE DESIGN OF THE RECORDERS' PAPER DRIVE PLUG WHICH HAS INSUFFICIENT PROTECTION AGAINST THE PLUG CONTACT TOUCHING GROUND. THERE WERE NO SAFETY IMPLICATIONS RESULTING FROM THIS EVENT SINCE THE SYSTEMS FUNCTIONED AS DESIGNED ON RECEIPT OF A HIGH-HIGH RADIATION SIGNAL.

FORM 109 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
335	1980	058	0	8012020567	161710	10/19/80

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

ABSTRACT
POWER LEVEL - 100%. CAUSE - OPEN BREAKER DUE TO BACKFIT WORK ERROR. TARGET A-16 ALARMED (DG 1B FAILURE TO START). THE PYROMETER THAT GIVES THE ALARM WAS FOUND DEENERGIZED. DURING INVESTIGATION, THE DG LOCKOUT ALARM WAS INADVERTENTLY ACTUATED. THE LOCKOUT ALARM WAS RESET AND THE DIESEL WAS STARTED TO VERIFY OPERABILITY. WHILE TROUBLESHOOTING THE PYROMETER POWER LOSS, THE FEEDER BREAKER FROM MCC-1B7 WAS FOUND OPEN. MCC-1B7 SUPPLIES POWER PANEL 112 WHICH SUPPLIES POWER TO VARIOUS COMPONENTS. THE FEEDER BREAKER WAS CLOSED. THE OPEN FEEDER BREAKER TO PP-112 HAS BEEN ATTRIBUTED TO BACKFIT WORK BEING PERFORMED IN THE VICINITY OF THE BREAKER.

FORM 110 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
338	1980	047	0	8006090361	158645	05/23/80

DOCKET:338 NORTH ANNA 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
SYMBOL: VEP

COMMENTS
STEP 2: CAUSE XX - NORMAL OPERATION. STEP 7: CAUSE XX - REQUIRED FOR TESTING.

ABSTRACT
POWER LEVEL - 000%. CAUSE - LOSS OF VITAL BUS. AT 0146, WITH THE UNIT AT HOT STANDBY, ACTUATION OF THE EMERGENCY CORE COOLING SYSTEM WAS INITIATED ON HIGH STEAM LINE FLOW SIGNAL COINCIDENT WITH LO-LO T-AVE. THIS WAS AN INADVERTENT ACTUATION (EQUIPMENT PERFORMED THE INTENDED INJECTION FUNCTION) AND THE REACTOR WAS ALREADY SHUTDOWN. THE HIGH STEAM FLOW SIGNAL RESULTED FROM A LOSS OF VITAL BUS 1-III. THE LO-LO T-AVE SIGNAL RESULTED FROM THE TRIPPING OF ALL THREE REACTOR COOLANT PUMPS WHICH WAS REQUIRED DUE TO THE LOSS OF VITAL BUS 1-III. CORRECTIVE ACTION WAS FOR THE CONTROL ROOM OPERATORS TO PERFORM THE APPLICABLE EMERGENCY PROCEDURE AND RETURN THE PLANT TO STABLE CONDITIONS.

FORM 111 LER SCSS DATA 08-30-91.

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
338	1980	078	1	8010140436	163519	09/08/80

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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 7: ISYS SW - UNKNOWN STRUCTURES; COMP MEI - FLOW ORIFICE. REFERENCE LER 338/80-080 DESCRIBES EVENTS RELATED TO INVERTER FAILURE.

REFERENCE LERS:
1 338/80-080 2 338/80-087

ABSTRACT
POWER LEVEL - 000%. CAUSE - INCORRECT GOVERNOR SETTING. THE GOVERNOR VALVE FOR THE STEAM DRIVEN AUXILIARY FEEDWATER PUMP WAS FOUND TO BE IN THE TRIPPED CONDITION RENDERING THE PUMP INOPERABLE. THE GOVERNOR VALVE APPARENTLY TRIPPED DUE TO PUMP OVERSPEED FOLLOWING A UNIT TRIP. THE CAUSE OF THE OVERSPEED WAS APPARENTLY AN INCORRECT GOVERNOR SETTING. THE GOVERNOR VALVE WAS RESET, THE GOVERNOR VALVE SETTING ADJUSTED TO ITS PROPER SETTING AND THE PERIODIC TEST ON THE AUXILIARY FEEDWATER PUMP WAS COMPLETELY SATISFACTORILY.

FORM 112 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
338	1980	080	1	8010140423	163521	09/08/80

DOCKET:338 NORTH ANNA 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
SYMBOL: VEP

COMMENTS
REFERENCE LER 338/80-078 DESCRIBES EVENTS SUBSEQUENT TO THE SCRAM.

REFERENCE LERS:
1. 338/80-078

ABSTRACT
POWER LEVEL - 100%. CAUSE - UNKNOWN. POWER TO THE 120 VOLT A.C. VITAL BUS 1-IV WAS LOST CONTRARY TO TECH SPEC. THE SUPPLY BREAKER FOR THE INVERTER WHICH SUPPLIES POWER TO VITAL BUS IV WAS FOUND IN THE OPEN POSITION. HOW THE BREAKER BECAME OPEN COULD NOT BE DETERMINED. POWER TO THE VITAL BUS WAS RESTORED VIA THE INSTALLED TRANSFORMER. POWER SUPPLY TO THE VITAL BUS WAS LATER SWITCHED TO THE INVERTER.

FORM 113 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
338	1986	009	0	8606250041	199801	05/31/86

DOCKET:338 NORTH ANNA 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
SYMBOL: VEP

COMMENTS
STEP 1: EFF IX-VOLTAGE AND CURRENT FLUCTUATIONS. STEP 10: CAUSE LX-UNDERCOMPENSATION. STEP 4: COMP RLX-RELAY WHICH SENSES BREAKER POSITION (FOR RCS PUMP).

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

ABSTRACT
POWER LEVEL - 100%. AT 2131 HOURS ON MAY 31, 1986, UNIT 1 TRIPPED FROM 100% POWER (MODE 1) AS A RESULT OF A LOSS OF POWER TO THE 120 VAC VITAL BUS (VB) 1-1. VITAL BUS 1-1 POWERS THE RELAY WHICH SENSES THE BREAKER POSITION OF 'A' REACTOR COOLANT PUMP (RCP). WHEN THIS RELAY WAS DE-ENERGIZED, A REACTOR TRIP SIGNAL WAS GENERATED AS A RESULT OF THE REACTOR PROTECTION SYSTEM SENSING THE 'A' RCP BREAKER OPEN COINCIDENT WITH REACTOR POWER GREATER THAN 30% (P-8). REACTOR COOLANT PUMP 'A' DID NOT ACTUALLY TRIP DURING THIS EVENT. TWO PARALLEL 480/120 VAC TRANSFORMERS WERE BEING USED AS AN ALTERNATE POWER SUPPLY TO VB 1-1 DUE TO VOLTAGE AND CURRENT FLUCTUATIONS ON THE BATTERY CHARGER. VITAL BUS 1-1 WAS DE-ENERGIZED WHEN ONE OF THE 480/120 VAC TRANSFORMERS FAILED. POWER WAS RESTORED TO VB 1-I BY TRANSFERRING BACK TO THE NORMAL POWER SUPPLY (INVERTER). THE REACTOR WAS RETURNED TO CRITICALITY AT 0743 HOURS ON JUNE 1, 1986 AND PLACED ON LINE AT 0432 HOURS ON JUNE 2, 1986. THIS EVENT IS REPORTABLE PURSUANT 10CFR50.73(A)(2)(IV).

FORM 114 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
339	1983	036	0	8305250384	183213	04/29/83

DOCKET:339 NORTH ANNA 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: VIRGINIA ELECTRIC POWER CO.
SYMBOL: VEP

ABSTRACT
ON APRIL 29, 1983, WITH UNIT 2 IN MODE 6, A LOSS OF VITAL BUS 2-1 RESULTED IN LOSING RESIDUAL HEAT REMOVAL (RHR) FLOW FOR LESS THAN ONE MINUTE WHEN ONE OF TWO IN SERIES RHR SUCTION VALVES (MOV-2700) CLOSED. IN ADDITION, ONE OF TWO SOURCE RANGE CHANNELS (N-31) AND THE CONTAINMENT PARTICULATE AND GASEOUS RADIATION MONITORS (RM-259 AND 260) WERE DE-ENERGIZED. SINCE THE VITAL BUS WAS PROMPTLY REENERGIZED AND THE DE-ENERGIZED EQUIPMENT PROMPTLY RESTORED. THIS EVENT IS REPORTABLE PURSUANT TO TECH SPEC 6.9.1.9.B. THIS EVENT OCCURRED AS MAINTENANCE PERSONNEL WERE PERFORMING A GROUND ISOLATION PROCEDURE FOR 125 VOLT D.C. BUS W-I AND SHORTED THE TEST LEADS AS LOADS WERE BEING TRANSFERRED TO ANOTHER D.C. BUS. THIS EVENT CAUSED THE INPUT BREAKER TO 2-1 120 VOLT A.C. VITAL BUS TO OPEN AND DE-ENERGIZED THE ABOVE LISTED EQUIPMENT. THE VITAL BUS AND DE-ENERGIZED EQUIPMENT WERE RESTORED AND NORMAL OPERATION RESUMED.

FORM 115 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
341	1987	048	9	8812200285	211535	10/08/87

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

COMMENTS
STEP 38: DI X - 10. STEP 44: DI X-11. STEP 48: DI X - 12. STEP 49: COMP XI - LOOSE PARTS MONITOR. STEP 51: DI X-13. STEP 54: DI X - 14. STEP 58: DI X - 15. STEP 62: DI X - 16. STEP 64: DI X - 17.

WATCH-LIST CODES FOR THIS LER ARE:
40 PROCEDURAL DEFICIENCY
942 UNUSUAL EVENT
913 UPDATE NEEDED

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

REFERENCE LERS:

1 341/85-018	2 341/85-036	3 341/85-037	4 341/85-040
5 341/86-004	6 341/86-008	7 341/86-010	8 341/86-022
9 341/86-039	10 341/87-029	11 341/87-044	

ABSTRACT
POWER LEVEL - 000%. DETROIT EDISON COMMITTED TO PERFORM A REVIEW OF TECH SPEC SURVEILLANCES AS PART OF ITS TECH SPEC IMPROVEMENT PROGRAM. LER 87-048 DESCRIBES THE REPORTABLE FINDINGS OF THIS ONGOING PROGRAM WHICH CONSTITUTE VIOLATIONS OF THE TECH SPECS; THIS LER IS UPDATED ON AN AS REQUIRED BASIS. IT WAS DETERMINED THAT THE LOW PRESSURE COOLANT INJECTION (LPCI) LOGIC FUNCTIONAL TEST SURVEILLANCE PROCEDURE DID NOT SPECIFY TESTING OF EIGHT TIME DELAY RELAYS. THE RELAYS WERE RECALIBRATED AND ROUTINE CALIBRATION OF THESE RELAYS IN ACCORDANCE WITH THE PREVENTIVE MAINTENANCE PROGRAM WILL BE ESTABLISHED BY DECEMBER 31, 1988. IT WAS DETERMINED THAT THE SERVICE, TURBINE AND RADWASTE BUILDING VENTILATION RADIATION MONITORING SYSTEMS CHANNEL FUNCTIONAL TEST SURVEILLANCE PROCEDURES DID NOT SPECIFY TESTING OF NON-RUNNING SUPPLY AND EXHAUST FANS. THE SYSTEMS WERE SUCCESSFULLY TESTED AND SURVEILLANCE PROCEDURES WERE REVISED. IT WAS DETERMINED THAT AN ELECTRICALLY SUPERVISED FIRE DOOR AND THE ALARM SET POINTS FOR THE OFF-GAS RADIATION MONITORS WERE NOT ADDRESSED IN THEIR ASSOCIATED SURVEILLANCE PROCEDURES. THE ABOVE EQUIPMENT WAS RETESTED AND ASSOCIATED SURVEILLANCE PROCEDURES WILL BE REVISED BY DECEMBER 31, 1988.

FORM 116 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
346	1980	013	0	8003110685	155444	02/08/80

DOCKET:346 DAVIS-BESSE 1 TYPE:PWR
REGION: 3 NSSS:BW
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: TOLEDO EDISON CO.
SYMBOL: TEC

ABSTRACT
POWER LEVEL - 000%. CAUSE - BLOWN FUSE. AT 2300 HOURS WITH A REACTOR STARTUP IN PROGRESS, IT WAS NOTED THAT CONTROL ROD 5-11'S ABSOLUTE POSITION INDICATION (API) WAS NOT RESPONDING. THE REACTOR STARTUP WAS TERMINATED AND ALL GROUP 5 CONTROL RODS WERE DRIVEN IN. THE REACTOR STARTUP WAS TERMINATED BECAUSE THE UNIT COULD NOT MEET THE LIMITING CONDITIONS OF T.S. THE CONTROL ROD NEVER DEVIATED FROM ITS INTENDED POSITION IN THE GROUP, ONLY THE API WAS FAULTY. FUSE F14 IN THE POSITION REFERENCE PANEL FOR CONTROL ROD 5-11'S VAC API SUPPLY WAS BLOWN. FUSE F14 WAS REPLACED AND THE API MODULE VOLTAGES WERE CHECKED SATISFACTORILY. CONTROL ROD 5-11 WAS WITHDRAWN TO VERIFIY THE API WAS TRACKING. THE API WAS DECLARED OPERABLE AND THE REACTOR STARTUP WAS COMMENCED.

FORM 117 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
346	1980	029	0	8005060178	158860	04/19/80

DOCKET:346 DAVIS-BESSE 1 TYPE:PWR
REGION: 3 NSSS:BW
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: TOLEDO EDISON CO.
SYMBOL: TEC

COMMENTS
WATCH 975 - RHR PUMP SUCTION TRANSFERRED TO EMERGENCY SUMP DURING SAFETY INJECTION. THIS LED TO AIR BINDING OF PUMP. ALSO GRAVITY FEED OF RWST WATER TO SUMP OCCURRED.

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

REFERENCE LERS:
1 346/79-005

ABSTRACT
POWER LEVEL - 000%. CAUSE - BREAKER OPENS DUE TO HIGH VIBRATION. BREAKER HBBF2 WAS OPENED BY A GROUND FAULT RELAY WHICH PROBABLY ACTUATED FROM MECHANICAL VIBRATION DUE TO CONSTRUCTION PERSONNEL IN THE ROOM. TWO ESSENTIAL BUSES WERE LOST DUE TO THE ELECTRICAL LINEUP FOR MAINTENANCE. SAFETY FEATURES ACTUATION RESULTED. THE DECAY HEAT PUMP HAD TO BE SHUTDOWN TO STOP THE INJECTION. AIR IN THE PIPING DELAYED THE PUMP RESTART. REACTOR COOLANT TEMPERATURE ROSE ABOVE THE 140F SPECIFICATION. THE DECAY HEAT PUMP WAS VENTED AND RESTARTED AT A MAXIMUM REACTOR COOLANT SYSTEM TEMPERATURE OF 170F.

FORM 118 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
346	1980	064	1	8012120512	160365	08/22/80

DOCKET:346 DAVIS-BESSE 1 TYPE:PWR
REGION: 3 NSSS:BW
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: TOLEDO EDISON CO.
SYMBOL: TEC

COMMENTS
SUBSEQUENT EVENT OCCURRED 08/23/80.

REFERENCE LERS:
1 346/79-009 2 346/80-056

ABSTRACT
POWER LEVEL - 000%. CAUSE - FUSE FAILURES. ON 8/22/80 AT 1446 HOURS AND ON 8/23/80 AT 0922 HOURS, THE STATION EXPERIENCED A LOSS OF ESSENTIAL INSTRUMENT AC PANEL Y2. THE RESULT WAS THE DE-ENERGIZATION OF SAFETY FEATURES ACTUATION SYSTEM (SFAS) CHANNEL 2, REACTOR PROTECTION SYSTEM (RPS) CHANNEL 2 AND STEAM AND FEEDWATER RUPTURE CONTROL SYSTEM (SFRCS) CHANNEL 2 WHICH CAUSED THE CONTAINMENT RADIATION STRING FOR SFAS CHANNEL 2 TO FAIL. THE CAUSE WAS THE FAILURE OF THE YV-2 INVERTER OUTPUT FUSE, HOWEVER, THE EXACT CAUSE OF THE FUSE FAILURE HAS NOT BEEN DETERMINED.

FORM 119 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
346	1982	029	0	8207190259	175395	06/08/82

DOCKET:346 DAVIS-BESSE 1 TYPE:PWR
REGION: 3 NSSS:BW
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: TOLEDO EDISON CO.
SYMBOL: TEC

ABSTRACT
THE ESSENTIAL INVERTER YV2 FAILED WHICH DEENERGIZED 120VAC ESSENTIAL BUS Y2 AND SUBSEQUENTLY SOURCE RANGE DETECTOR NI-1. SINCE NI-2 HAD ALREADY BEEN DEENERGIZED FOR DETECTOR REPLACEMENT, THE STATION WAS LEFT WITHOUT AN OPERABLE SOURCE RANGE DETECTOR. THE STATION ENTERED THE ACTION STATEMENT OF TECH SPEC 3.3.1. THE SHUTDOWN MARGIN WAS CALCULATED AND FOUND TO STILL BE WITHIN ACCEPTABLE LIMITS. THE CAUSE OF THE OCCURRENCE WAS A COMPONENT FAILURE WITHIN THE REGULATED RECTIFIER YRF2 WHICH NORMALLY SUPPLIES DC POWER TO INVERTER YV2. Y2 WAS ENERGIZED FROM ITS ALTERNATE SOURCE AND NI1 WAS RETURNED TO OPERABILITY BY 1500 HOURS. WORK REVEALED THAT THE VOLTAGE CONTROL MODULE YRF2 HAD FAILED IN SUCH A WAY THAT THE RECTIFIER COULD ONLY CARRY THE LOADED INVERTER WITH THE AID OF THE ALTERNATE DC SUPPLY.

FORM 120 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
346	1982	046	1	8301240081	178922	09/09/82

DOCKET:346 DAVIS-BESSE 1 TYPE:PWR
REGION: 3 NSSS:BW
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: TOLEDO EDISON CO.
SYMBOL: TEC

REFERENCE LERS:
1 346/81-011 2 346/81-027

ABSTRACT
OPERATORS RECEIVED A HIGH DECAY HEAT (DH) FLOW ALARM. THE DH FLOW INDICATOR FOR DH PUMP 2 READ GREATER THAN 4200 GPM. IT WAS VERIFIED THAT DH PUMP 2 WAS NOT RUNNING. HIGH PRESSURE INJECTION (HPI) FLOW INDICATION FOR HPI PUMP 2 ALSO SHOWED HIGH FLOW WITH NO PUMP RUNNING. HPI AND LPI/DH FLOW INDICATION FOR TRAIN 2 WAS DECLARED INOPERABLE, AND THE STATION ENTERED THE ACTION STATEMENT OF TECH SPECS 3.5.2. THE -24 VDC POWER SUPPLY FOR THE BUFFER CARDS FAILED CAUSING THE INDICATION TO FAIL HIGH. THE CAUSE OF THE POWER SUPPLY FAILURE IS UNKNOWN AT THIS TIME. THE POWER SUPPLY WAS REPLACED UNDER MWO IC-414-82. HPI AND LPI TRAIN 2 FLOW INDICATION WAS DECLARED OPERABLE AT 1544 HOURS ON 9/9/82, REMOVING THE STATION FROM THE ACTION STATEMENT. THE POWER SUPPLY WILL BE RETURNED TO THE MANUFACTURER FOR FAILURE ANALYSIS.

FORM 121 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
346	1983	045	1	8507120154	195425	08/27/83

DOCKET:346 DAVIS-BESSE 1 TYPE:PWR
REGION: 3 NSSS:BW
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: TOLEDO EDISON CO.
SYMBOL: TEC

REFERENCE LERS:
1 346/80-056

ABSTRACT
ON 8-27-83 AT 0955 HRS, WHILE HOOKING UP LEADS FOR ST 5030.09, 'RPS RESPONSE TIME TEST', AN I&C TECHNICIAN SHORTED TEST LEADS TOGETHER CAUSING AN ESSENTIAL BUS FUSE TO BLOW, DEENERGIZING 120V AC ESSENTIAL Y1 BUS. THIS MADE SOURCE RANGE FLUX MONITOR NI-2 INOPERABLE, PLACING THE UNIT IN THE ACTION STATEMENT OF TECH SPEC 3.9.12. REDUNDANT MONITOR NI-1 WAS OPERABLE THROUGHOUT THIS OCCURRENCE. DUE TO THE CLOSE CONFINEMENT OF THE TERMINAL BOARD LOCATIONS, THE I&C TECHNICIAN INADVERTENTLY SHORTED THE TEST LEADS TOGETHER. NI-2 WAS DECLARED OPERABLE AT 1250 HRS ON 8-27-83. DESIGN MODIFICATIONS HAD PREVIOUSLY BEEN MADE TO THESE TERMINALS TO PRECLUDE RECURRENCE. A PROCEDURE MODIFICATION WAS MADE TO ST 5030.09 TO MAKE I&C TECHNICIANS MORE CONSCIOUS OF THE POTENTIAL OF SHORTING OUT ESSENTIAL BUSES.

FORM 122 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
348	1980	029	0	8006050036	158641	04/30/80

DOCKET:348 FARLEY 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: BESS
FACILITY OPERATOR: ALABAMA POWER CO.
SYMBOL: APC

ABSTRACT
POWER LEVEL - 100%. CAUSE - LOOSE CIRCUIT BREAKER TERMINAL SCREW. AT 1546, INTERMEDIATE RANGE NIS CHANNEL N-35 WAS DECLARED INOPERABLE DUE TO LOSS OF POWER. WHILE PERFORMING A WIRING VERIFICATION, POWER TO N-35 WAS INADVERTENTLY INTERRUPTED DUE TO A LOOSE TERMINAL SCREW ON A 120 VOLT VITAL AC PANEL 1A MOLDED CASE BREAKER. THE WIRE WAS RECONNECTED AND N-35 WAS RETURNED TO SERVICE AT 1551. ALL OTHER CONNECTIONS IN THE PANEL WERE VERIFIED SECURE.

FORM 123 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
348	1983	021	0	8306100270	183268	05/06/83

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DOCKET:348 FARLEY 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: BESS
FACILITY OPERATOR: ALABAMA POWER CO.
SYMBOL: APC

ABSTRACT
AT 0739 ON 5/6/83, THE DIGITAL ROD POSITION INDICATION (DRPI) SYSTEM WAS DECLARED INOPERABLE WHEN POWER SUPPLY BREAKER HBL7R OPENED. TECH SPEC 3.1.3.2, IN PART, REQUIRES THE DRPI SYSTEM TO BE OPERABLE. TECH SPEC ACTION STATEMENT REQUIREMENTS WERE MET. NO DEFINITIVE CAUSE COULD BE DETERMINED. THE BREAKER MAY HAVE BEEN INADVERTENTLY TRIPPED BY PERSONNEL OPENING A CLOTHING LOCKER IN CLOSE PROXIMITY TO THE BREAKER. FOLLOWING A SHIFT TO AN ALTERNATE POWER SUPPLY, THE DIGITAL ROD POSITION INDICATION WAS RESTORED AT 0747 ON 5/6/83. THE LOCKER WAS MOVED TO AN AREA NOT IN PROXIMITY TO THE SUBJECT BREAKER. THE INCIDENT WAS DISCUSSED WITH PERSONNEL WHO WERE ASSIGNED DUTIES IN THE VICINITY OF THE BREAKER AT THE TIME OF OCCURRENCE. AN INSPECTION OF OTHER AREAS IN THE PLANT FOR SITUATIONS WHERE A SIMILAR EVENT COULD OCCUR REVEALED NO POTENTIAL PROBLEMS.

FORM 124 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
348	1987	004	0	8702260585	202834	01/22/87

DOCKET:348 FARLEY 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: BESS
FACILITY OPERATOR: ALABAMA POWER CO.
SYMBOL: APC

COMMENTS
STEP 1: CAUSE AX - CALIBRATION AND FUNCTIONAL TESTING OPERATIONS. STEP 7: MODEL - 5 KVA, 60 HZ.

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

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

REFERENCE LERS:
1 364/85-012

ABSTRACT
POWER LEVEL - 100%. AT 1218 ON 1-22-87, WITH THE UNIT OPERATING AT 100% POWER, A REACTOR TRIP OCCURRED DUE TO HIGH FLUX RATES INDICATED BY POWER RANGE NUCLEAR INSTRUMENTATION CHANNELS N-41 AND N-42. THE HIGH FLUX RATE ON N-42 WAS DUE TO TESTING WHICH WAS IN PROGRESS AT THE TIME. THE HIGH FLUX RATE ON N-41 WAS CAUSED BY THE FAILURE OF THE 1A INVERTER WHICH SUPPLIES POWER TO N-41. TESTING OF N-42 WAS COMPLETED AND N-42 WAS RETURNED TO SERVICE. THE BACKUP POWER SUPPLY FOR N-41 WAS PLACED INTO SERVICE. THE UNIT RETURNED TO POWER OPERATION ON 1-23-87. SUBSEQUENTLY, THE 1A INVERTER WAS TESTED AND FOUR BLOWN FUSES WERE REPLACED. NO CAUSE FOR THE BLOWN FUSES COULD BE FOUND. THE INVERTER WAS RETURNED TO SERVICE.

FORM 125 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
348	1987	007	0	8704290331	204233	04/05/87

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DOCKET:348 FARLEY 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: BESS
FACILITY OPERATOR: ALABAMA POWER CO.
SYMBOL: APC

COMMENTS
STEP 5: PART NO. WL23706.

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 - 000%. AT 2238 ON 4-5-87, WITH THE UNIT IN MODE 3 (HOT STANDBY) AND THE FULL LENGTH CONTROL RODS INSERTED, A REACTOR TRIP SIGNAL WAS GENERATED WHEN SOURCE RANGE NUCLEAR INSTRUMENT N-31 FAILED HIGH. THE SHUTDOWN BANKS INSERTED ON THE REACTOR TRIP SIGNAL. UPON INVESTIGATION, IT WAS FOUND THAT THE DETECTOR FOR N-31 HAD FAILED. THE DETECTOR WAS REPLACED AND, FOLLOWING TESTING, N-31 WAS RETURNED TO SERVICE.

FORM 126 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
352	1984	039	0	8502010074	192700	12/21/84

DOCKET:352 LIMERICK 1 TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: PHILADELPHIA ELECTRIC CO.
SYMBOL: PEC

COMMENTS
STEP 1: CAUSE AX - FOR TESTING.

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

REFERENCE LERS:
1.352/84-005

ABSTRACT
POWER LEVEL - 000%. ON 12-21-84, A TEMPORARY LOSS OF POWER TO AN UNINTERRUPTIBLE AC ELECTRICAL PANEL CAUSED THE REACTOR WATER CLEANUP SYSTEM AND THE REACTOR ENCLOSURE AND REFUEL FLOOR VENTILATION SYSTEMS TO ISOLATE. THE LOSS OF POWER ('B' RPS LOGIC), COMBINED WITH CONCURRENT SURVEILLANCE TESTING ON THE 'A' RPS LOGIC, ALSO RESULTED IN THE GENERATION OF A FULL SCRAM SIGNAL. THE CAUSE OF THE EVENT WAS AN OVERVOLTAGE CONDITION FROM THE 'B' RPS STATIC INVERTER. AFTER THE EVENT, THE SCRAM SIGNAL WAS RESET AND ALL AFFECTED SYSTEMS WERE RETURNED TO NORMAL OPERATION.

FORM 127 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
353	1991	003	0	9104250285	221862	03/24/91

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DOCKET:353 LIMERICK 2 TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: PHILADELPHIA ELECTRIC CO.
SYMBOL: PEC

COMMENTS
STEP 4: COMP 1XZ - REDUNDANT REACTIVITY CONTROL SYSTEM SELF TEST SYSTEM.
STEP 5: COMP XA - RRCS OUT OF SERVICE AND CHANNEL ACTIVATED ANNUNCIATORS.

WATCH-LIST CODES FOR THIS LER ARE:
35 HUMAN ERROR
40 PROCEDURAL DEFICIENCY
32 COMMUNICATION PROBLEM
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:
1 352/84-002 2 352/85-046 3 352/86-011 4 352/86-020
5 352/90-026

ABSTRACT
POWER LEVEL - 000%. ON 3/24/91, AN INADVERTENT REDUNDANT REACTIVITY CONTROL SYSTEM (RRCS) ALTERNATE ROD INSERTION (ARI) ACTUATION WAS INITIATED FROM DIVISION I LOGIC DURING THE APPLICATION OF A TEMPORARY CIRCUIT ALTERATION (TCA) TO SUPPORT UNIT 2 OUTAGE WORK ON DIVISION I AND III INSTRUMENTATION. THE ARI INITIATION CAUSED THE SCRAM INLET AND OUTLET VALVES TO OPEN, AND CAUSED THE SCRAM DISCHARGE VOLUME (SDV) VENT AND DRAIN VALVES TO CLOSE. REPOSITIONING OF THESE VALVES CAUSED LEVEL IN THE SDV TO INCREASE TO ITS HIGH LEVEL TRIP SETPOINT, CAUSING A REACTOR PROTECTION SYSTEM (RPS) FULL SCRAM ACTUATION. THERE WAS NO CONTROL ROD MOTION DURING THIS EVENT SINCE ALL CONTROL RODS WERE FULLY INSERTED PRIOR TO THE EVENT. THE ARI AND THE RPS ACTUATED AS DESIGNED DURING THIS EVENT. THE CAUSE OF THIS EVENT WAS PERSONNEL ERROR RESULTING IN LESS THAN ADEQUATE COMMUNICATION DURING INSTALLATION OF THE TCA; AN RRCS RESET WAS REQUESTED WHEN BOTH RRCS AND ARI RESETS WERE REQUIRED. PROCEDURAL GUIDANCE WILL BE DEVELOPED TO ENSURE BOTH RRCS AND ARI RESETS ARE PERFORMED FOR THESE ROUTINE DIVISIONAL TCAS THAT ARE APPLIED DURING OUTAGES. THE LICENSED OPERATOR REQUALIFICATION TRAINING MODULE FOR RRCS WILL BE REVISED TO INCLUDE MORE DETAILED INFORMATION ON RRCS AND ARI LOGIC RESETS.

FORM 128 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
354	1986	025	0	8607080014	199997	05/30/86

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: EFFECT IX- UNSPECIFIED ELECTRICAL FAILURE.

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

ABSTRACT
POWER LEVEL - 000%. ON 5-30-86 AT 0525, THE CONTROL ROOM CONSOLE INDICATION FOR THE IN-SERVICE "A" SERVICE WATER PUMP, "A" SAFETY AUXILIARY COOLING (SACS) PUMP AND THE "A" EMERGENCY DIESEL GENERATOR WAS LOST. IN ADDITION THE "A" SACS LOOP TRIPPED ON AN ERRONEOUS EXPANSION TANK LOW LEVEL SIGNAL AND THE "A" TECHNICAL SUPPORT CENTER (TSC) CHILLER, THE "A" CONTROL ROOM CHILLER, AND THE "C" TURBINE BUILDING CHILLER TRIPPED ON LOW COOLING WATER FLOW. THIS RESULTED IN THE AUTO START OF THE "B" TSC CHILLER AND "B" CONTROL ROOM CHILLER. THE ROOT CAUSE OF THE EVENT WAS A HUMAN FACTORS DESIGN DEFICIENCY INVOLVING THE ELECTRICAL CABINET WHICH HELD COMPONENTS THAT CONTROLLED CONSOLE AND EXPANSION TANK LEVEL INDICATIONS. AT THE TIME OF THE INCIDENT, 2 I&C TECHNICIANS WERE INSTALLING A NEW POWER SUPPLY DIRECTLY ABOVE AN IN-SERVICE SUPPLY. ALTHOUGH CARE WAS TAKEN TO AVOID GROUNDING OR "BUMPING" OF SUPPLIES, 1 TECHNICIAN HEARD A BREAKER TRIP AND SAW THE LED EXTINGUISH ON THE IN-SERVICE SUPPLY. THE IMMEDIATE RESPONSE BY THE OPERATORS WAS TO STABILIZE THE ASSOCIATED EQUIPMENT. CORRECTIVE ACTIONS WILL INCLUDE THE REVIEW OF WORK PRACTICES AND THE CONSIDERATION OF A DESIGN CHANGE TO THE ELECTRICAL CABINETS.

FORM 129 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
354	1987	015	1	8710020168	206510	02/13/87

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 4: COMP XA - EXCESSIVE PUMP OPERATING TIME ALARM.

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.

REFERENCE LERS:
1 354/86-012 2 354/86-016 3 354/86-017 4 354/86-047
5 354/86-074 6 354/86-075

ABSTRACT
POWER LEVEL - 000%. AN AUTO-ISOLATION OF THE CONTROL ROOM VENTILATION (CRV) SYSTEM OCCURRED WHEN A SPURIOUS CHANNEL D HIGH RADIATION SIGNAL WAS RECEIVED. WHEN CRV ISOLATED, THE "B" CONTROL ROOM EMERGENCY FILTRATION (CREF) UNIT AUTO-STARTED. A CHECK OF THE RADIATION MONITORING SYSTEM (RMS) DETERMINED THAT RADIATION LEVELS WERE NORMAL AT THE TIME THE SIGNAL WAS GENERATED. AS A RESULT THE SIGNAL WAS CONSIDERED SPURIOUS AND THE CRV SYSTEM WAS RETURNED TO SERVICE AND "B" CREF UNIT WAS STOPPED. SUBSEQUENT INVESTIGATION REVEALED THAT AN I&C FUNCTIONAL TEST (FT) WAS BEING PERFORMED ON THE DRYWELL LEAK DETECTION MONITORING SYSTEM AT THE TIME THE ISOLATION OCCURRED AND THAT THE ISOLATION PROBABLY RESULTED FROM A VOLTAGE SPIKE GENERATED DURING THE PERFORMANCE OF THE FT. ATTEMPTS TO REPEAT THE CIRCUMSTANCES WHICH CAUSED THE CRV RADIATION MONITOR TO ALARM HAVE PROVEN UNSUCCESSFUL, AND AS A RESULT, NO DEFINITE CORRECTIVE ACTIONS CAN BE ASSIGNED.

FORM 130 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
361	1986	029	3	8909120059	215156	12/10/86

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: COMP XS - STATIC TRANSFER SWITCH. STEP 8: MODEL NO. 14071B. STEP 15: GAMMA-METRICS NO. 87.

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

ABSTRACT
POWER LEVEL - 100%. ON 12/10/86 AT 1037, WITH UNIT 2 AT 93% POWER, THE TURBINE TRIPPED DURING A POWER INTERRUPTION TO THE TURBINE GOVERNOR CONTROL SYSTEM (TGCS), CAUSING A REACTOR TRIP. THE STEAM BYPASS CONTROL SYSTEM (SBCS) DID NOT INITIALLY ACTUATE AND A MAIN STEAM SAFETY VALVE BRIEFLY ACTUATED. THE TRIP RECOVERY PROCEEDED NORMALLY, ALTHOUGH START-UP CHANNEL 'B' FAILED, AND PLANT PROTECTION SYSTEM (PPS) CHANNEL 'A' DID NOT TRIP. ALL OTHER REQUIRED SAFETY RELATED EQUIPMENT FUNCTIONED AS DESIGNED, AND THERE WERE NO SAFETY CONSEQUENCES. THE NON-1E 120 VAC LOAD WAS BEING TRANSFERRED FROM THE NON-1E UNINTERRUPTIBLE POWER SUPPLY (UPS) INVERTER TO THE ALTERNATE SOURCE. A PROCEDURAL STEP TO DEFEAT THE AUTOMATIC RETRANSFER CIRCUIT WAS NOT PERFORMED, CAUSING THE LOAD TO TRANSFER BACK TO THE PRIMARY SOURCE. WHEN THE UPS INVERTER WAS DISCONNECTED UNDER LOAD, THE AUTOMATIC TRANSFER TO THE ALTERNATE SOURCE DID NOT OCCUR IN TIME TO PREVENT THE TRIP. THE UPS IS EQUIPPED WITH AN AUTOMATIC TRANSFER SWITCH WHICH AUTOMATICALLY TRANSFERS THE LOAD TO THE ALTERNATE SOURCE ON LOSS OF INVERTER OUTPUT VOLTAGE. THE TRANSFER SWITCH WAS FOUND TO OPERATE CORRECTLY; HOWEVER, THE ENSUING TRANSIENT IS BELIEVED TO HAVE CAUSED THE TRIP. THE EVENT RESULTED FROM THE FAILURE TO FOLLOW THE PROCEDURE; ADDITIONALLY, THE JOB DID NOT RECEIVE THE CORRECT LEVEL OF ATTENTION BY OPERATIONS PERSONNEL.

FORM 131 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
362	1982	003	0	8301170367	181744	11/27/82

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

ABSTRACT
WITH THE PLANT IN MODE 6, CHANNEL 2 STARTUP MONITOR 3JI-006 WAS OBSERVED TO HAVE LOST VISUAL INDICATION AND WAS DECLARED INOPERABLE. THE REDUNDANT MONITOR REMAINED OPERABLE AND NO CORE ALTERATIONS OR POSITIVE REACTIVITY CHANGES TOOK PLACE DURING THIS EVENT. THE MONITOR INOPERABILITY WAS ATTRIBUTABLE TO LOSS OF POWER WHEN MOTOR CONTROL CENTER (MCC) 3BN, WAS TAKEN OUT OF SERVICE. THE MCC AND THE MONITOR WERE RETURNED TO SERVICE ON NOVEMBER 27, 1982. RESPONSIBLE OPERATIONS PERSONNEL HAVE BEEN DIRECTED TO PERFORM A MORE DETAILED REVIEW OF THE IMPACT OF DE-ENERGIZING MCC'S. ADDITIONALLY, THE INFORMATION SUCH AS LOAD LISTS FOR MCC'S WILL BE REVIEWED FOR ADEQUACY OF DETAIL AND REVISED IF NECESSARY.

FORM 132 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
362	1985	026	2	8703060082	202871	10/16/85

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

COMMENTS
STEP 1: CAUSE AX - CALIBRATION AND MODIFICATIONS. STEP 8: D-COL N - CALIFORNIA OFFICE OF EMERGENCY SERVICES RECEIVED AN ALARM, "EMERGENCY COOLING SYSTEM" AND NOTIFIED PLANT OPERATORS. STEPS 13,27: COMP XA - STATUS ALARMS FOR RADIATION MONITORS.

REPORTABILITY CODES FOR THIS LER ARE:
9 10 CFR 50.36(c)(2): Limiting conditions for operation.
10 10 CFR 50.73(a)(2)(i): Shutdowns or technical specification violations.

ABSTRACT
POWER LEVEL - 000%. ON 10/16/85 AT APPROXIMATELY 1104, WITH UNIT 3 IN MODE 6 AND A CONTAINMENT PURGE IN PROGRESS, CONTAINMENT PURGE ISOLATION SYSTEM (CPIS) TRAIN 'A' MONITOR 3RE-7804 WAS ISOLATED FROM THE CONTAINMENT BY CLOSURE OF THE SAMPLE ISOLATION VALVES TO THE MONITOR. THIS CLOSURE WAS CAUSED BY DE-ENERGIZATION OF THE POWER SUPPLY TO THE ENGINEERED SAFETY FEATURE ACTUATION SYSTEM (ESFAS), TRAIN 'A' AUXILIARY RELAYS. TECHNICAL SPECIFICATIONS REQUIRE THE MONITOR TO BE IN SERVICE DURING CONTAINMENT PURGE AND ONE TRAIN OF CPIS TO BE OPERABLE DURING REFUELING OPERATIONS IN THE CONTAINMENT. DUE TO THE ISOLATION OF 3RE-7804, A PORTION OF CPIS TRAIN 'A' WAS NOT IN SERVICE FROM 1104 UNTIL 1345 WHEN POWER WAS RESTORED TO THE RELAYS. NORMALLY TWO DC POWER SUPPLIES ARE OPERATED IN PARALLEL AND SUPPLY POWER TO HALF OF THE ESFAS TRAIN 'A' AUXILIARY RELAYS; ONLY ONE OF THE TWO SUPPLIES IS REQUIRED FOR OPERATION. IT IS POSTULATED ONE OF THE POWER SUPPLIES HAD BEEN DE-ENERGIZED DURING MODIFICATION WORK, WHEN WORK WAS LATER CONTINUED ON 10/16/85, THE REMAINING POWER SUPPLY WAS DE-ENERGIZED CAUSING A LOSS OF POWER TO THE AUXILIARY RELAYS. ONE HALF OF THE TRAIN 'A' ESFAS AUXILIARY RELAYS DE-ENERGIZED, ACTUATING THOSE COMPONENTS WHICH HAD NOT BEEN REMOVED FROM SERVICE FOR THE OUTAGE.

FORM 133 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
362	1987	011	2	8806100192	209515	06/21/87

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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
WATCH 975 - BECAUSE OF THE LOW PRESSURIZER LEVEL AND THE LOW RCS TEMPERATURE/PRESSURE, A SMALL STEAM BUBBLE MAY HAVE EXISTED IN THE RPV HEAD FOR ABOUT 30 SECONDS. STEPS 4,5: COMP XA - REACTOR TRIP OVERRIDE ALARM. STEP 33: MODEL NE13DH.

WATCH-LIST CODES FOR THIS LER ARE:
20 EQUIPMENT FAILURE
35 HUMAN ERROR
975 POSSIBLE SIGNIFICANT EVENT

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

REFERENCE LERS:
1 361/85-049 2 362/85-006

ABSTRACT
POWER LEVEL - 100%. ON JUNE 21, 1987 AT 0258, WITH UNIT 3 IN MODE 1 AT 100% POWER, THE REACTOR AUTOMATICALLY TRIPPED ON LOW STEAM GENERATOR (SG) WATER LEVEL. THE LOW SG WATER LEVEL WAS CAUSED BY AN INTERMITTENT LOSS OF POWER IN ONE PHASE OF A 120 VAC NON-1E INSTRUMENT BUS WHICH RESULTED IN THE INABILITY TO CONTROL MAIN FEEDWATER AND THE CONSEQUENT REDUCTION IN SG WATER LEVEL. LEVEL CONTINUED TO DECREASE TO THE LOW LEVEL REACTOR TRIP AND EMERGENCY FEEDWATER ACTUATION SET POINT. FOLLOWING THE REACTOR TRIP, 120 VAC NON-1E POWER RETURNED AND MAIN FEEDWATER FLOW RESUMED. THE WATER LEVEL IN SG E088 INCREASED FROM THE LOW LEVEL TRIP SET POINT TO ABOVE THE HIGH LEVEL ALARM SET POINT AS OPERATORS WERE IMPLEMENTING THEIR IMMEDIATE POST-TRIP ACTIONS IN ACCORDANCE WITH EMERGENCY OPERATING INSTRUCTIONS (EOIS). THIS RESULTED IN COOLING DOWN OF THE REACTOR COOLANT SYSTEM (RCS) TO BELOW THE SAFETY INJECTION ACTUATION SIGNAL (SIAS) SET POINT. THE 120 VAC POWER MALFUNCTION WAS DETERMINED TO BE DUE TO A LOOSE BOLT CONNECTING THE "B" PHASE OF INSTRUMENT BUS #1 TO THE MAIN BUS BARS OF THE NON-1E UNINTERRUPTABLE POWER SUPPLY (UPS) MAIN DISTRIBUTION SWITCHBOARD, WHICH RESULTED IN INTERMITTENT LOSS OF CIRCUIT CONTINUITY. THIS WAS EVIDENCED BY ARCING AND PITTING AT THE CONNECTION, AND CONFIRMED BY SUBSEQUENT DUPLICATION OF POWER INTERRUPTIONS WHEN THE ASSEMBLY WAS MANUALLY MOVED.

FORM 134 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
362	1989	001	3	8912260017	216246	01/06/89

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

COMMENTS
STEP 6: ITEM NO. TX801, PART NO. 312744. STEP 16: CAUSE AX - FOR TESTING.
STEP 7: PART NUMBER 23778. STEP 5: COMP MSC - IRON CORE.

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

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

REFERENCE LERS:
1 361/87-004 2 362/87-011

ABSTRACT
POWER LEVEL - 100%. AT 2335 ON 1/6/89 WITH UNIT 3 AT 98% POWER, REACTOR TRIPPED ON LOW SG LEVEL AFTER A PARTIAL LOSS OF NON-1E UNINTERRUPTIBLE POWER SUPPLY (UPS) POWER OCCURRED WHICH CAUSED FEEDWATER REGULATING VALVES TO REDUCE FLOW TO SG E089 AND RESULTED IN ACTUATION OF EMERGENCY FEEDWATER TO SG E089. EMERGENCY FEEDWATER TO SG E088 ALSO ACTUATED DUE TO THE RESULTING LEVEL "SHRINK" IN SG E088, WHICH IS EXPECTED FOLLOWING A TRIP FROM HIGH POWER. SINCE STEAM BYPASS CONTROL SYSTEM WAS IN MANUAL TO PERFORM TURBINE VALVE TESTING, HEAT REMOVAL FROM THE SGS WAS GREATER THAN NORMAL. AT 2336, AS A RESULT OF LOWER SG TEMPERATURE, RCS PRESSURE DECREASED BELOW SIAS SETPOINT (1806 PSIA), RESULTING IN AN SIAS ACTUATION. THERE WAS NO SAFETY INJECTION FLOW INTO RCS SINCE RCS PRESSURE REMAINED ABOVE SHUTOFF HEAD OF INJECTION PUMPS. 2 OF 3 NON-1E UPS PHASES WERE LOST BECAUSE OF A COMMON FAULT IN THE ASSOCIATED INVERTER'S CONSTANT VOLTAGE TRANSFORMER (CVT) OUTPUT WINDINGS. A TEMPORARY JUMPER, WHICH HAD NOT BEEN PROPERLY REMOVED DURING PREVIOUS MAINTENANCE, WAS FOUND BETWEEN UPS UNGROUNDED NEUTRAL AND GROUND. THERE WERE 2 PRIOR FAILURES OF A CVT IN THE SAME INVERTER AFTER INSTALLATION OF THE TEMPORARY JUMPER, BUT NEITHER RESULTED IN A SAFETY SYSTEM ACTUATION. CAUSE OF TRANSFORMER FAILURE WAS THE BREAKDOWN OF INSULATION BETWEEN ENERGIZED WINDINGS AND GROUNDED IRON CORE.

FORM 135 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
364	1981	004	0	8104200314	165203	03/14/81

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DOCKET:364 FARLEY 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: BESS
FACILITY OPERATOR: ALABAMA POWER CO.
SYMBOL: APC

ABSTRACT
AUDIBLE COUNT RATE IN THE CONTAINMENT WAS LOST AS A RESULT OF A BLOWN FUSE IN THE 2D INVERTER. THE 120 VOLT VITAL INSTRUMENT PANEL 2D WAS TRANSFERRED TO AN ALTERNATE SUPPLY AND THE BLOWN INVERTER FUSE WAS REPLACED.

FORM 136 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
366	1984	030	3	8507160039	196055	11/15/84

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

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

ABSTRACT
POWER LEVEL - 099%. ON 11-15-84 THE PLANT'S SURVEILLANCE COORDINATOR DETERMINED THAT THE MONTHLY CHANNEL FUNCTIONAL TEST HAD NOT BEEN PERFORMED ON THE MAIN STEAM LINE INSTRUMENTATION FOR THE MONTHS OF SEPT AND OCT. THIS MONTHLY TEST IS REQUIRED BY TECH SPECS TABLE 4.3.2-1, ITEM D., AS WELL AS THE 'MAIN STEAM LINE TUNNEL TEMPERATURE INSTRUMENT FT&C' PROCEDURE (HNP-2-3107). THIS TEST WAS PREVIOUSLY REQUIRED EVERY 18 MONTHS; HOWEVER, TECH SPECS AMENDMENT NUMBER 39 CHANGED THE 18 MONTH INTERVAL TO A 30 DAY INTERVAL. THE PLANT'S SURVEILLANCE COORDINATOR DID NOT ADJUST THE SURVEILLANCE FREQUENCY; CONSEQUENTLY, THIS EVENT IS THE RESULT OF PERSONNEL ERROR. ON 11-29-84 DURING A QA AUDIT, PLANT PERSONNEL DETERMINED THAT REACTOR VESSEL PRESSURE INSTRUMENTATION AND REACTOR VESSEL SHROUD WATER LEVEL INSTRUMENTATION WERE NOT RECEIVING MONTHLY CHANNEL CHECKS AND QUARTERLY CHANNEL CALIBRATIONS PER TECH SPECS TABLE 4.3.6.4-1, ITEM 1 AND 4.3.6.4-1, ITEM 2, RESPECTIVELY. ON 3-13-85 IT WAS DETERMINED THAT THE 'PRIMARY CONTAINMENT HYDROGEN RECOMBINER FUNCTIONAL TEST (HEATUP TO 1200 DEG F) SURVEILLANCE PROCEDURE DID NOT MEET THE ACCEPTANCE CRITERIA OF TECH SPECS SECTION 4.6.6.2.B.4. REFER TO THE NARRATIVE FOR ADDITIONAL ITEMS ADDED VIA REV 3.

FORM 137 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
368	1980	088	1	8407260034	162054	12/01/80

DOCKET:368 ARKANSAS NUCLEAR 2 TYPE:PWR
REGION: 4 NSSS:CE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: ARKANSAS POWER AND LIGHT CO.
SYMBOL: APL

COMMENTS
STEP 3:MODEL NO. 9262.

ABSTRACT
POWER LEVEL - 060%. CAUSE - MAINTENANCE PERSONNEL SHORTED POWER SUPPLIES. CPC A AND CEAC #1 FAILED. I&C MAINTENANCE PERSONNEL WERE WORKING ON 2F1-8229-1 IN CABINET 2C33. THE I&C PERSONNEL SHORTED THE SIGMA FLOW INDICATOR POWER SUPPLY LEADS TOGETHER TRIPPING BREAKER 12 ON 2RS1 AND CAUSING A VOLTAGE TRANSIENT ON 2Y11 AND 2Y13. CPC A FAILED ON LOW SUPPLY VOLTAGE AND CEAC NO. 1 FAILED BECAUSE OF THE LOSS OF REED SWITCH POSITIVE INDICATION. THE A.C. POWER TO SIGMA INDICATOR 2FI-8229-1 AND OTHER INSTRUMENTS IN 2C33 CANNOT BE FEASIBLY DE-ENERGIZED. THE INSTRUMENTS CANNOT BE REMOVED WITHOUT DISCONNECTING THE POWER SUPPLY LEADS, MAKING IT NECESSARY TO PERFORM MAINTENANCE WITH THE SYSTEM ENERGIZED. SIGMA INDICATORS ARE SCHEDULED TO BE REPLACED WITH ANOTHER TYPE.

FORM 138 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
368	1989	024	0	9002080162	216686	12/31/89

DOCKET:368 ARKANSAS NUCLEAR 2 TYPE:PWR
REGION: 4 NSSS:CE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: ARKANSAS POWER AND LIGHT CO.
SYMBOL: APL

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

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

ABSTRACT
POWER LEVEL - 100%. ON 12/31/89, A REACTOR TRIP OCCURRED FROM 100% OF RATED THERMAL POWER WHEN 'B' STEAM GENERATOR (SG) WATER LEVEL REACHED A HIGH LEVEL SETPOINT AND THE REACTOR PROTECTION SYSTEM GENERATED A REACTOR TRIP SIGNAL. DURING THE TRANSIENT ONE OF THE RUNNING CONDENSATE PUMPS WHICH WAS EXPECTED TO TRIP DID NOT TRIP. OTHERWISE, THE PLANT RESPONDED PROPERLY WHEN THE REACTOR TRIP OCCURRED. THE OPERATIONS STAFF RESPONDED APPROPRIATELY AND IN A TIMELY MANNER TO THE REACTOR TRIP. OF PRIMARY CONCERN WAS THE POTENTIAL FOR REACTOR COOLANT SYSTEM OVERCOOLING OR A SG OVERFILL EVENT, HOWEVER, PROPER SYSTEM OPERATION PREVENTED EITHER FROM OCCURRING. NO SIGNIFICANT SAFETY CONCERNS WERE IDENTIFIED. THE ROOT CAUSE OF THIS EVENT IS BELIEVED TO BE A LOOSE TERMINAL ON AN ELECTRICAL MODULE IN THE 'B' FEEDWATER CONTROL SYSTEM (FWCS) CABINET. THE TERMINAL WAS NOT PROPERLY RETERMINATED WHEN MAINTENANCE ACTIVITIES WERE PERFORMED DURING 2R7 REFUELING OUTAGE. THE LOOSE TERMINAL WAS ON AN ELECTRICAL MODULE IN THE 'B' MAIN FEEDWATER (MFW) FLOW LOOP TO THE 'B' FWCS. TO VERIFY THAT THE LOOSE TERMINAL COULD CAUSE A TRANSIENT SIMILAR TO THIS EVENT, SIMULATED SIGNALS FOR 100% POWER CONDITIONS FOR THE INPUTS TO THE 'B' FWCS WERE INPUT AND THE CONNECTION ON THE TERMINAL LOOSENED. A VERY SIMILAR RESPONSE TO THE TRANSIENT WHICH INITIATED THE REACTOR TRIP OCCURRED.

FORM 139 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
369	1981	154	0	8110190252	169954	09/08/81

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

COMMENTS
STEP 5: MODEL NO. AA840A. STEP 6: MODEL NO. 02T-H1855.

ABSTRACT
AN INSTRUMENTATION AND CONTROL POWER BREAKER WAS TAGGED OUT TO ALLOW WORK TO BE DONE ON THE GAG ACTUATOR ON A UHI BLOCK VALVE. THIS RESULTED IN THE INSIDE CONTAINMENT ISOLATION VALVES FOR (EFFLUENT MONITORING CHANNELS) EMF'S 38, 39, AND 40 FAILING CLOSED. THE THREE EMF'S WERE DECLARED INOPERABLE. THE VALVE'S FAILING CLOSED WENT UNDETECTED BECAUSE A VACUUM RELIEF VALVE (GAST #AA840A) APPARENTLY OPENED BEFORE THE "LOSS OF SAMPLE FLOW" ALARM SETPOINT WAS REACHED. SAMPLING OF THE CONTAINMENT ATMOSPHERE WAS PERFORMED, AND A PERIODIC TEST WAS MODIFIED TO INCLUDE VERIFICATION OF THE ISOLATION VALVES POSITION. DUKE POWER CO. WILL CONTINUE TO TROUBLESHOOT THE EMF'S TO ENSURE RELIABLE OPERATION.

FORM 140 LER SCSS DATA 08-30-91

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

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

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

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

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

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

FORM 141 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
370	1984	034	0	8502010483	192823	12/21/84

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

COMMENTS
STEP 1: MAINTENANCE PERSONNEL MISTOOK UNIT 2 EQUIPMENT FOR UNIT 1 EQUIPMENT.

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

ABSTRACT
POWER LEVEL - 100%. ON 12-21-85, UNIT 2 TRIPPED FROM 100% POWER WHEN PREVENTIVE MAINTENANCE ON UNIT 1 125V AC VITAL I&C POWER RESULTED IN A UNIT 2 INVERTER BEING ERRONEOUSLY REMOVED FROM SERVICE, INSTEAD OF THE ADJACENT UNIT 1 INVERTER. THE RESULTING LOSS OF POWER TO THE ANALOG CONTROLLERS FOR SG LEVEL, FEEDWATER FLOW, AND STEAM FLOW RESULTED IN A FEEDWATER TRANSIENT, WHICH WAS CORRECTED BY SWITCHING TO MANUAL CONTROL AND TRANSFERRING THE CONTROLLERS TO ANOTHER CHANNEL. HOWEVER, THE TRANSFER TO ANOTHER CHANNEL WAS DONE INCOMPLETELY, IN THAT 1 OF 13 CONTROLLER SWITCHES WAS NOT MOVED TO THE ALTERNATE CHANNEL. WHEN CONTROL WAS RETURNED TO THE AUTOMATIC MODE, THE CONTRIBUTION OF THIS INOPERABLE INPUT TO AUTOMATIC CONTROL CAUSED THE LEVEL IN SG C TO FALL TO THE LOW-LOW TRIP SETPOINT. THE CAUSE OF THE EVENT WAS PERSONNEL ERROR BECAUSE AN OPERATOR AND AN INDEPENDENT VERIFIER FAILED TO IDENTIFY PROPERLY THE EQUIPMENT TO BE REMOVED FROM SERVICE. IN ADDITION, THE TRANSFER OF THE SG PROGRAM TO AN ALTERNATE CHANNEL WAS PERFORMED INCORRECTLY. CORRECTIVE ACTION WILL INCLUDE A RE-EMPHASIS WITH OPERATORS ON THE IMPORTANCE OF FOLLOWING PROCEDURES, AND VERIFICATION. ALSO, THE SG LOW-LOW LEVEL TRIP SETPOINT WILL BE LOWERED TO ALLOW OPERATORS MORE TIME TO DIAGNOSE AND COMPENSATE FOR SG LEVEL TRANSIENTS.

FORM 142 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
370	1985	026	0	8512100425	197373	10/24/85

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

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

REFERENCE LERS:
1 370/84-034

ABSTRACT
POWER LEVEL - 100%. ON OCTOBER 24, 1985, A REACTOR TRIP OCCURRED AS A RESULT OF LOW LEVEL IN STEAM GENERATOR (S/G) "C". THE INADVERTENT OPENING OF THE OUTPUT BREAKER ON THE CHANNEL II VITAL INSTRUMENTATION AND CONTROL INVERTER INITIATED THE EVENT. THE ANALOG CONTROLLERS FOR THE S/G'S AND PRESSURIZER WERE BEING SUPPLIED BY CHANNEL I POWER SUPPLY AND WERE UNAFFECTED BY THE LOSS OF POWER. THE S/G LEVEL PROGRAM SELECTOR SWITCH FOR THE NUCLEAR POWER CONTRIBUTION WAS IN THE N41 - N42 (CHANNEL I, CHANNEL II) POSITION AT THE TIME OF THE INCIDENT. THE N42 CHANNEL HAD FAILED DUE TO THE LOSS OF POWER AND WAS CAUSING AN ERRONEOUS S/G LEVEL SIGNAL WHICH WAS CLOSING THE FEEDWATER CONTROL VALVES FOR S/G'S "B" AND "C". THE DECREASING S/G LEVELS WERE NOT NOTICED BY THE OPERATORS UNTIL THE LOW LEVEL ALERT WAS RECEIVED AT APPROXIMATELY 45 PERCENT LEVEL. ATTEMPTS TO MANUALLY RECOVER LEVEL WERE UNSUCCESSFUL AND REACTOR TRIP FROM 100 PERCENT POWER OCCURRED. THIS INCIDENT IS ATTRIBUTED TO PERSONNEL ERROR DUE TO THE UNINTENTIONAL TRIPPING OF THE INVERTER BREAKER. SYSTEMS RESPONDED AS EXPECTED FOR THE TRANSIENT. MODIFICATIONS ARE BEING CONSIDERED TO ALLOW OPERATORS MORE TIME TO CORRECT OR PREVENT THIS TYPE OF TRANSIENT.

FORM 143 LER SCSS DATA 08-30-91

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

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

COMMENTS
STEPS 2,3: MODEL NO. 9L11MHA264.

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

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

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

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

FORM 144 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
382	1985	042	0	8511070012	197229	10/02/85

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

COMMENTS
STEP 1: COMP MOT - DIESEL GENERATOR AIR DRYER MOTOR; STEP 2: EFFECT IX - VOLTAGE SPIKE.

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

ABSTRACT
POWER LEVEL - 003%. AT 2032 HRS ON 10-2-85, THE WATER LEVEL IN SG #2 INCREASED TO THE HIGH LEVEL REACTOR TRIP SETPOINT. JUST PRIOR TO THE TRIP CONTROL ROOM OPERATORS RECEIVED NUMEROUS ALARMS/ANNUNCIATIONS WHEN A SHORT IN THE EMERGENCY DG AIR DRYER MOTOR (NON-SAFETY) CAUSED A SPIKE ON THE STATIC UNINTERRUPTIBLE POWER SUPPLY 'A' (SAFETY). SINCE THE FEEDWATER CONTROL SYSTEM WAS IN THE MANUAL MODE OF OPERATION, THE ALARMS/ANNUNCIATIONS DISTRACTED THE CONTROL BOARD OPERATOR'S ATTENTION LONG ENOUGH FOR THE WATER LEVEL IN SG #2 TO INCREASE TO THE REACTOR TRIP SETPOINT. THE AIR DRYER MOTOR HAS BEEN REPLACED. A STATION MODIFICATION HAS BEEN INITIATED TO CHANGE THE POWER SUPPLY FOR ALL 4 EMERGENCY DG AIR DRYERS. UNTIL THIS MODIFICATION IS COMPLETE, POWER FOR ALL 4 AIR DRYERS IS BEING TEMPORARILY SUPPLIED FROM A NON-SAFETY SOURCE.

FORM 145 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
387	1985	009	0	8504190522	193981	03/10/85

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

COMMENTS
STEPS 2,12,17: CAUSE LD - WELDING WORK. STEPS 10,15: HALF-SCRAM SIGNAL PRESENT FOR MODIFICATION WORK IN PROGRESS.

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

ABSTRACT
POWER LEVEL - 000%. ON 3-10, 3-11, AND 3-28-85, INADVERTENT ESF ACTUATIONS OCCURRED. ON 3-10, THE CONTROL ROOM EMERGENCY OUTSIDE AIR SUPPLY SYSTEM, A COMMON SYSTEM FOR UNIT 1 AND 2, STARTED UNEXPECTEDLY ON A HIGH-HIGH RADIATION DETECTION SYSTEM SPIKE. NO ACTUAL HIGH RADIATION CONDITION EXISTED. ON 3-11, WITH THE 'B' RPS CHANNEL SCRAM PRESENT DUE TO MODIFICATION WORK, A NOISE SPIKE ON INTERMEDIATE RANGE MONITOR 'C' CAUSED A SCRAM SIGNAL ON THE 'A' RPS CHANNEL RESULTING IN AN RPS ACTUATION. ON 3-28, WITH THE 'A' RPS CHANNEL SCRAM SIGNAL PRESENT DUE TO MODIFICATION WORK, A NOISE SPIKE ON IRM 'D' CAUSED A SCRAM SIGNAL ON THE 'B' RPS CHANNEL RESULTING IN AN RPS ACTUATION. THERE WAS NO CONTROL ROD MOVEMENT ON EITHER RPS ACTUATION AS THE REACTOR WAS SHUTDOWN AND DEFUELED AT THE TIME OF THE INCIDENTS. ALL 3 INCIDENTS HAVE BEEN ATTRIBUTED TO WELDING IN THE VICINITY OF THE DETECTORS INDUCING NOISE IN THE INSTRUMENTATION.

FORM 146 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
395	1987	015	0	8707150475	205259	06/16/87

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

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

ABSTRACT.
POWER LEVEL - 100%. ON JUNE 16, 1987, AT 2003 HOURS A REACTOR TRIP OCCURRED FROM 100% POWER. THE FAILURE OF A CAPACITOR IN INVERTER XIT 5904 CAUSED AN OUTPUT FUSE TO BLOW WHICH RESULTED IN THE LOSS OF POWER RANGE NUCLEAR INSTRUMENT (NI) 44. THE LOSS OF NI- 44 CAUSED THE STEAM GENERATOR (SG) PROGRAM LEVEL CONTROL SIGNAL TO DECREASE FROM FULL LOAD TO NO LOAD (38%). THE FEEDWATER REGULATING VALVES (FWRVS) REDUCED FLOW TO DECREASE ACTUAL LEVEL TO MEET THE PROGRAMMED LEVEL. WHEN THE OPERATOR PLACED THE FWRV CONTROLS TO MANUAL AND DEMANDED AN OPEN SIGNAL, THE ADDITION OF COOLER FEEDWATER (IN CONJUNCTION WITH THE ALREADY DECREASED LEVEL) CAUSED "B" STEAM GENERATOR LEVEL TO SHRINK BELOW THE LOW-LOW LEVEL REACTOR TRIP SETPOINT. THE PLANT RESPONDED TO THE REACTOR TRIP WITH NO ABNORMALITIES. MOTOR DRIVEN EMERGENCY FEEDWATER PUMP "A" AND THE TURBINE DRIVEN EMERGENCY FEEDWATER PUMP STARTED TO SUPPLY FEEDWATER TO THE SGS IN RESPONSE TO THE SG LOW-LOW LEVEL REACTOR TRIP. DUE TO A PREVIOUS STEAM GENERATOR TUBE LEAK, THE STEAM RELEASED FROM THE MAIN STEAM POWER OPERATED RELIEF VALVES AND THE TURBINE DRIVEN EMERGENCY FEEDWATER PUMP EXHAUST TO ATMOSPHERE WAS CONSERVATIVELY CALCULATED TO BE A SMALL FRACTION OF THE ALLOWABLE RELEASE LIMIT.

FORM 147 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
395	1987	028	0	8712040158	207343	10/30/87

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

COMMENTS
STEP 2: COMP XI - LIGHT BULBS FOR POWER STATUS.

WATCH-LIST CODES FOR THIS LER ARE:
941 REPORT ASSOCIATED WITH 10 CFR 50.72
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 30, 1987, AT 0903 HOURS WITH THE PLANT IN MODE 3 AND THE SHUTDOWN BANKS WITHDRAWN, A REACTOR TRIP OCCURRED AND BOTH SETS OF SHUTDOWN BANKS INSERTED DUE TO THE LOSS OF POWER TO A SOURCE RANGE NUCLEAR INSTRUMENTATION DRAWER. THIS LOSS OF POWER OCCURRED WHEN THE WRONG TYPE OF LIGHT BULBS WERE INSERTED IN BOTH THE INSTRUMENT AND CONTROL POWER STATUS INDICATING LIGHTS IN ONE OF THE SOURCE RANGE DRAWERS IN THE CONTROL ROOM. THE INCORRECT LIGHT BULBS CAUSED BOTH THE INSTRUMENT AND CONTROL POWER FUSES TO BLOW WHEN THE LIGHT BULB HOLDER ASSEMBLY WAS REINSERTED. SUBSEQUENT INVESTIGATIONS DETERMINED THAT THE ORIGINAL BULBS WERE NEON TYPE BULBS WITH AN INFINITE RESISTANCE, WHILE THE BULBS USED AS REPLACEMENTS - THOUGH SIMILAR LOOKING - WERE INCANDES CENT TYPE BULBS WITH AN OHMIC VALUE OF APPROXIMATELY 176 OHMS. TO PREVENT RECURRENCE, THE LICENSEE IS DEVELOPING A PROGRAM TO ADDRESS CHANGEOUT OF LIGHT BULBS IN THE CONTROL ROOM.

FORM 148 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
397	1985	006	0	8502250773	193436	01/17/85

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 - 100%. ON 1-17-85 AN EQUIPMENT OPERATOR WAS RACKING IN 480V BREAKER ROA-FN-1A ON SWITCHGEAR SL-73. WHILE DOING SO IT APPEARED THAT THE TRIPPING BAR WAS EXTENDED FURTHER THAN NORMAL. TO VERIFY THIS, HE OPENED THE DOOR TO THE BREAKER BELOW (FEEDER BREAKER TO 480 V MOTOR CONTROL CENTER MC-7A) SO AS TO COMPARE THE TWO BREAKER CONFIGURATIONS. IN THE PROCESS OF THE CHECK THE TRIPPING BAR FOR THE MC-7A BREAKER WAS INADVERTENTLY MOVED SLIGHTLY INWARD, THEREBY CAUSING THE BREAKER TO TRIP. THE MC-7A TRIP CAUSED THE A RPS MOTOR-GENERATOR SET TO LOSE POWER AND DEENERGIZE ITS RESPECTIVE BUS. ALTHOUGH THE TRIP OF MC-7A WAS NOT IN ITSELF CAPABLE OF GENERATING A FULL SCRAM, A PLANT TRIP OCCURRED BECAUSE A COINCIDENT TRIP CONDITION EXISTED ON THE OPPOSITE RPS CHANNEL DUE TO A BLOWN FUSE ON THE APRM 'D' POWER SUPPLY. THE BLOWN FUSE WAS THE RESULT OF MAINTENANCE ACTIVITIES ASSOCIATED WITH APRM 'D' AND WAS IN THE PROCESS OF BEING REPLACED WHEN THE SCRAM OCCURRED.

FORM 149 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
397	1985	059	0	8512180073	197590	11/13/85

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

COMMENTS
STEP 1: COMPONENT MSC - UNSPECIFIED SUBCOMPONENT; STEP 2: MODEL INV 203-101; STEP 14: COMPONENT CBL-TEST JUMPER.

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

ABSTRACT
POWER LEVEL - 050%. ON 11-13-85, AT APPROXIMATELY 0600 HRS, A REACTOR SCRAM OCCURRED DUE TO FAILURE OF POWER TO THE CONTROLLING REACTOR FEEDWATER (RFW) SYSTEM REACTOR PRESSURE VESSEL (RPV) LEVEL INSTRUMENT CHANNEL. LOSS OF POWER CAUSED DOWNSCALE RPV LEVEL INDICATION ON THE CONTROLLING CHANNEL "A" WHICH CAUSED THE RFW SYSTEM TO RESPOND BY INCREASING RPV LEVEL UNTIL THE CHANNELS "B" AND "C" RPV HIGH LEVEL TURBINE TRIP SETPOINT WAS REACHED. THE POWER FAILURE TO THE RFW CHANNEL "A" INSTRUMENTATION WAS CAUSED BY COMPONENT FAILURE OF CRITICAL INSTRUMENT POWER INVERTER IN-3. THIS RESULTED IN THE FAILURE OF THE UNIT TO SUPPLY POWER TO ONE OF TWO CRITICAL INSTRUMENT BUSES WHICH WERE SUPPLYING POWER TO THE RFW LEVEL INSTRUMENTATION. AT APPROXIMATE 0845, WHILE TROUBLESHOOTING INVERTER IN-3, THE INVERTER WAS INADVERTENTLY SHUTDOWN WHEN THE NORMAL OPERATING PROCEDURE WAS USED TO TRANSFER INVERTER POWER SUPPLIES. THE INVERTER SHUTDOWN CAUSED AN INADVERTENT START OF THE CONTROL ROOM EMERGENCY FILTRATION SYSTEM AND A PARTIAL CONTAINMENT ISOLATION. AT APPROXIMATELY 1435 HRS, WHILE CONTINUING TO TROUBLESHOOT INVERTER IN-3, A TEST LEAD WAS ACCIDENTLY SHORTED TO GROUND WHICH CAUSED A FUSE IN THE POWER SUPPLY TO THE PP-7A-A CRITICAL INSTRUMENT BUS TO BLOW. THIS CAUSED A SECOND AUTOMATIC START OF THIS ESF SYSTEM AND A PARTIAL CONTAINMENT ISOLATION.

FORM 150 LER SCSS DATA 08-30-91.

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
409	1986	016	0	8606160266	199849	05/10/86

DOCKET:409 LACROSSE TYPE:BWR
REGION: 3 NSSS:AC
ARCHITECTURAL ENGINEER: SLXX
FACILITY OPERATOR: DAIRYLAND POWER COOPERATIVE
SYMBOL: DLP

COMMENTS
WATCH LIST 231 - UNEXPECTED INTERACTION OF EMERGENCY TELEPHONE SYSTEM WITH EMERGENCY BUS. WATCH LIST 932 - IE INFORMATION NOTICE 85-77. STEPS 1,20: VENDOR- ADVANCE CONVERSION DEVICES COMPANY, MODEL- A66-1/118. STEP 8: ALL ESF SIGNALS WERE NOT BYPASSED BEFORE MAINTENANCE. STEP 9: CAUSE AX- REPLACEMENT OF FAILED INVERTER. STEP 16: CAUSE SX- POWER SOURCE FOR EMERGENCY TELEPHONES HAD BEEN SWITCHED TO A VITAL BUS DURING A RECENT REFUELING OUTAGE IN RESPONSE TO IE NOTICE 85-77. STEP 23: MODEL- T/613. STEP 29: COMPONENT MSC- FUSE HOLDER, EFFECT DX- UNSPECIFIED DAMAGE.

WATCH-LIST CODES FOR THIS LER ARE:
231 UNEXPECTED SYSTEM ACTION OR RESPONSE
932 RESULT OF IE BULLETINS, ORDERS, ETC.(IEB 81-7)

REPORTABILITY CODES FOR THIS LER ARE:
10 10 CFR 50.73(a)(2)(i): Shutdowns or technical specification violations.
13 10 CFR 50.73(a)(2)(iv): ESF actuations.

ABSTRACT
POWER LEVEL - 000%. ON MAY 10, WITH THE REACTOR IN HOT SHUTDOWN, THE 1A STATIC INVERTER FAILED AND TRANSFERRED THE 1A NONINTERRUPTIBLE BUS TO ITS ALTERNATE SOURCE. DURING THE TRANSFER, REACTOR WATER LEVEL SAFETY CHANNEL NO. 2, CAUSED BOTH HIGH PRESSURE CORE SPRAY PUMPS AND BOTH EMERGENCY DIESEL GENERATORS TO START AND CONTAINMENT BUILDING TO ISOLATE. THE INVERTER WAS REPLACED WITH A SPARE. ON MAY 13, 1A STATIC INVERTER AGAIN FAILED AND THE 1A NONINTERRUPTIBLE BUS TRANSFERRED TO ITS ALTERNATE SOURCE. THE REACTOR SCRAMMED FROM LOW POWER, BOTH HPCS PUMPS AND EMERGENCY DIESEL GENERATORS STARTED, CONTAINMENT BUILDING ISOLATED AND THE SHUTDOWN CONDENSER INITIATED. ALSO, 1C STATIC INVERTER SHIFTED TO ITS ALTERNATE SOURCE AND THE FUSE WHICH SUPPLIES EMERGENCY PHONE CIRCUITS FROM THE 1C NONINTERRUPTIBLE BUS WAS FOUND BLOWN. THE 1A STATIC INVERTER FAILURE WAS DUE TO AN OVERHEATED RESISTOR ON A CIRCUIT BOARD INSTALLED BY THE MANUFACTURER IN 1977. TROUBLESHOOTING DETERMINED THAT THE INTERACTION BETWEEN 1A AND 1C NONINTERRUPTIBLE BUSES SEEMED ASSOCIATED WITH THE EMERGENCY PHONE CIRCUIT, WHICH HAD RECENTLY HAD ITS POWER SUPPLY CHANGED TO 1C BUS. THE EMERGENCY PHONE CIRCUIT WAS REWIRED TO ITS ORIGINAL POWER SUPPLY.

FORM 151 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
409	1986	021	0	8608190726	200725	07/16/86

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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 3: COMP RLX-MECHANICAL TRANSFER RELAY. STEP 4: ADVANCE CONVERSION DEVICES CO. MODEL A66-1/118.

REPORTABILITY CODES FOR THIS LER ARE:
10 10 CFR 50.73(a)(2)(i): Shutdowns or technical specification violations.
13 10 CFR 50.73(a)(2)(iv): ESF actuations.

REFERENCE LERS:
1 409/74-003 2 409/79-017 3 409/80-011 4 409/83-007
5 409/86-016

ABSTRACT
POWER LEVEL - 098%. REACTOR SCRAMMED WHEN 1A STATIC INVERTER TRANSFERRED TO ITS ALTERNATE SOURCE, MOMENTARILY DE-ENERGIZING ONE OF THE SCRAM TRAINS. AFTER INVERTER WAS CHECKED, THE 1A NON-INTERRUPTIBLE BUS WAS TRANSFERRED BACK TO THE INVERTER. LATER, THE INVERTER LOAD TRANSFERRED AGAIN AND TWO FUSES BLEW, DE-ENERGIZING SOME INSTRUMENTATION. HIGH PRESSURE CORE SPRAY (HPCS) PUMPS STARTED, THE 1A SHUTDOWN CONDENSER (SDC) TRAIN INITIATED AND CONTAINMENT BUILDING ISOLATED. THE HPCS PUMPS CONTROL SWITCHES WERE PLACED IN "PULLOUT" TO PREVENT THE PUMPS FROM RUNNING. THE 1A SDC STEAM INLET VALVE WAS MANUALLY ISOLATED. THE FUSES WERE REPLACED AND EQUIPMENT RETURNED TO NORMAL. WHILE THE SDC WAS IN SERVICE, THE REACTOR VESSEL COOLED DOWN AT A RATE IN EXCESS OF THE TECHNICAL SPECIFICATION LIMIT. THE STRESSES EXPERIENCED WERE NOT IN EXCESS OF ALLOWABLE LIMITS.

FORM 152 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
410	1986	015	0	8612300319	202301	12/03/86

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DOCKET:410 NINE MILE POINT 2 TYPE:BWR
REGION: 1 NSSS:GE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: NIAGARA MOHAWK POWER CORPORATION
SYMBOL: NMP

COMMENTS
STEP 1: LOGIC CIRCUITS DESIGNED BY GENERAL ELECTRIC (G080). STEPS 3,4: COMP CBL - TEMPORARY JUMPER. STEP 4: CAUSE AX - JUMPER REMOVED. STEPS 7,8: IE - CROSS-CONNECTED WITH POWER SUPPLIES OUT OF PHASE. STEPS 5,6: P COL TR - MSIVS LOGIC CIRCUITS DESIGN WAS CHANGED.

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

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

REFERENCE LERS:
1 410/86-014

ABSTRACT
POWER LEVEL - 000%. ON DECEMBER 3, 1986 WITH THE REACTOR AT 0% POWER AND THE MODE SWITCH IN "SHUTDOWN", NINE MILE POINT UNIT 2 EXPERIENCED A SCRAM DUE TO THE LOSS OF POWER TO BOTH REACTOR PROTECTION SYSTEM (RPS) CHANNELS. THE RPS POWER SUPPLIES WERE INADVERTENTLY CROSS CONNECTED, RESULTING IN THE LOSS OF ALL RPS POWER. COINCIDENT WITH THIS EVENT WAS A CONTAINMENT ISOLATION AND A STANDBY GAS SYSTEM AUTOMATIC INITIATION. NO REACTOR TRANSIENTS WERE EXPERIENCED DURING THIS EVENT. CORRECTIVE ACTIONS TAKEN: 1. A DESIGN CHANGE HAS BEEN BUILT INTO THE MAIN STEAM ISOLATION VALVE (MSIV) LOGIC CIRCUITS THAT WILL AVOID CROSS CONNECTING RPS CHANNELS A AND B AS DESCRIBED IN THIS REPORT. 2. A FURTHER INVESTIGATION IS BEING CONDUCTED ON THE LOSS OF ALL ANNUNCIATORS.

FORM 153 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
412	1987	001	0	8707300525	205543	06/28/87

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DOCKET:412 BEAVER VALLEY 2 TYPE:PWR
REGION: 1 NSSS:WE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: DUQUESNE LIGHT CO.
SYMBOL: DUQ

COMMENTS
STEP 2: ITE MODEL K-1600.

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.

REFERENCE LERS:
1 412/87-003

ABSTRACT
POWER LEVEL - 000%. AT 1647 HOURS ON 6/28/87, WITH THE UNIT IN COLD SHUTDOWN, A BREAKER SUPPLYING A 480 VAC EMERGENCY MOTOR CONTROL CENTER (MCC) TRIPPED ON OVERCURRENT, THUS DE-ENERGIZING THE BREAKER. THE NO. 1 120 VAC VITAL BUS WAS BEING SUPPLIED FROM THE MCC AT THE TIME BECAUSE ITS NORMAL UNINTERRUPTIBLE POWER SUPPLY (UPS) WAS OUT OF SERVICE FOR MAINTENANCE. THEREFORE, THE LOSS OF THE MCC RESULTED IN THE LOSS OF THE VITAL BUS, WHICH DE-ENERGIZED SOURCE RANGE NEUTRON FLUX DETECTOR N-31 AND CAUSED A REACTOR TRIP ON HIGH SOURCE RANGE FLUX. A TRIP SIGNAL WAS ALSO GENERATED ON LOW-LOW 'C' STEAM GENERATOR (SG) LEVEL. THIS TRIP SIGNAL RESULTED FROM THE LOSS OF THE 'C' SG CHANNEL 1 LEVEL TRANSMITTER (WHICH WAS BEING SUPPLIED WITH AN ARTIFICIALLY HIGH LEVEL SIGNAL TO PERMIT REACTOR TRIP BREAKER CLOSURE FOR CONTROL ROD TESTING) IN COINCIDENCE WITH AN ACTUAL LOW LEVEL SIGNAL ON CHANNEL 3. NO SAFETY IMPLICATIONS RESULTED BECAUSE THE UNIT WAS ALREADY IN COLD SHUTDOWN WITH AN ADEQUATE MARGIN OF NEGATIVE REACTIVITY. THE OVERCURRENT CONDITION WAS CLEARED AND THE SUPPLY BREAKER CLOSED AT 1657 HOURS ON 6/28/87. THE UPS WAS RETURNED TO SERVICE ON 7/2/87, THUS RESTORING THE NORMAL POWER SUPPLY CONFIGURATION FOR THE VITAL BUS.

FORM 154 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
413	1988	004	0	8802230102	208355	01/16/88

DOCKET:413 CATAWBA 1 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: DUKE
FACILITY OPERATOR: DUKE POWER CO.
SYMBOL: DPC

COMMENTS
STEP 4: CAUSE XX - NORMAL RCS TEMPERATURE FOR MODE. OTHER REPORTABILITY - 50.72(B)(2)(II). $E/E A/EP

WATCH-LIST CODES FOR THIS LER ARE:
20 EQUIPMENT FAILURE
942 UNUSUAL EVENT
18 TEMPERATURE

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:
1 413/86-025 2 413/87-013 3 413/87-034 4 413/88-003
5 414/86-015 6 414/86-051 7 414/87-003 8 414/87-019
9 414/87-029

ABSTRACT
POWER LEVEL - 000%. ON 1/16/88, THE UNIT WAS IN THE PROCESS OF BEING SHUTDOWN. WHEN REACTOR POWER REACHED 10E-10 AMPS ON THE INTERMEDIATE RANGE (I/R), THE CONTROL POWER FUSE FAILED IN I/R CHANNEL N36, CAUSING THE LOW POWER HIGH FLUX REACTOR TRIP BISTABLE TO ACTUATE. THE REACTOR TRIP BREAKERS OPENED AND ALL OF THE UNINSERTED RODS DROPPED INTO THE CORE. (KEFF WAS <.99 AT THE TIME OF THE ACTUATION.) THE OPEN REACTOR TRIP BREAKERS COINCIDENT WITH AVERAGE REACTOR COOLANT TEMPERATURE BELOW 564 DEGREES F RESULTED IN A FEEDWATER ISOLATION. THE UNIT WAS IN MODE 3, HOT STANDBY, AT THE TIME OF THIS INCIDENT. SUBSEQUENT TO THIS EVENT, AN OPERATIONS NUCLEAR EQUIPMENT OPERATOR (NEO) WAS SENT TO THE UNIT 1 COOLING TOWERS TO INSPECT THEM FOR ICE. DURING THE INSPECTION, HE FOUND THAT A FRACTURE OF THE CONDENSER CIRCULATING WATER (RC) PIPING HAD OCCURRED. THE FEEDWATER ISOLATION SIGNAL WAS RESET AND THE AFFECTED VALVES WERE RETURNED TO THEIR PREVIOUS ALIGNMENT. WORK REQUESTS WERE ISSUED TO INVESTIGATE AND REPAIR I/R CHANNEL N36 AND PERFORM TESTING ON CHANNEL N36. THE RC PIPING WAS REPAIRED, AND THE UNIT WAS RETURNED TO POWER. ALSO THE SHUTDOWN PROCEDURE WAS REVISED TO RAISE THE LOW LIMIT RC TEMPERATURE TO PREVENT FURTHER BRITTLE FRACTURE PROBLEMS WITH THE RC SYSTEM.

FORM 155 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
414	1986	006	0	8605290105	199576	04/17/86

DOCKET:414 CATAWBA 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: DUKE
FACILITY OPERATOR: DUKE POWER CO.
SYMBOL: DPC

COMMENTS
OTHER REPORTABILITY-50.72(B)(2)(II). STEP 1: COMP MSC-INDUCTOR. STEP 2: MODEL 5V12100/TSMB.

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.

REFERENCE LERS:
1 413/85-012

ABSTRACT
POWER LEVEL - 000%. ON APRIL 17, 1986, AT APPROXIMATELY 1617 HOURS, THE 120 VAC VITAL INSTRUMENTATION AND CONTROL POWER (EPG) SYSTEM INVERTER 2EIB MALFUNCTIONED, RESULTING IN THE LOSS OF CHANNEL B CONTROL POWER. THIS RESULTED IN A LOW LEVEL INDICATION ON CHANNEL 2 FOR ALL FOUR STEAM GENERATORS (S/GS). THE LOW LEVEL INDICATION CAUSED THE FEEDWATER CONTROL BYPASS VALVES FOR S/GS A, C, AND D, WHICH WERE IN THE AUTO POSITION, TO OPEN AND FEED THE S/GS. AT 1620:10 HOURS, FEEDWATER ISOLATION INITIATED ON S/G A HIGH-HIGH LEVEL. THE S/G LEVELS WERE RETURNED TO NORMAL AND THE FEEDWATER ISOLATION SIGNAL WAS RESET. FEEDWATER VALVES WERE THEN REALIGNED TO THE S/GS. THE UNIT WAS IN MODE 4, HOT SHUTDOWN, AT THE TIME OF THIS INCIDENT. THIS INCIDENT IS ASSIGNED CAUSE CODE X, OTHER, DUE TO AN EQUIPMENT FAILURE. AN INDUCTOR IN INVERTER 2EIB HAD BURNED OUT. THIS INCIDENT IS REPORTABLE PURSUANT TO LO CFR 50.73, SECTION (A)(2)(IV) AND LO CFR 50.72, SECTION (B)(2)(II).

FORM 156 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
414	1986	036	0	8609150178	200921	08/07/86

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DOCKET:414 CATAWBA 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: DUKE
FACILITY OPERATOR: DUKE POWER CO.
SYMBOL: DPC

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:
10 10 CFR 50.73(a)(2)(i): Shutdowns or technical specification violations.
21 OTHER: Voluntary report, special report, Part 21 report, etc.
13 10 CFR 50.73(a)(2)(iv): ESF actuations.

REFERENCE LERS:
1 413/85-001 2 413/85-019 3 414/86-007

ABSTRACT
POWER LEVEL - 000%. ON AUGUST 7, 1986, AT APPROXIMATELY 1230 HOURS, TECHNICIANS WERE ADJUSTING THE OUTPUT FREQUENCY ON A 125 VDC/120 VAC VITAL INVERTER WHEN THEY INADVERTENTLY CAUSED THE INVERTER TO TRIP. THIS RESULTED IN REACTOR TRIP SIGNALS BEING GENERATED BECAUSE OF LOSS OF POWER TO THE SOURCE AND INTERMEDIATE RANGE EXCORE NEUTRON DETECTORS. THE REACTOR TRIP SIGNALS RESULTED IN A TURBINE TRIP SIGNAL AND MAIN FEEDWATER ISOLATION. ALSO, LETDOWN ISOLATION OCCURRED DUE TO LOSS OF POWER TO A PRESSURIZER LEVEL INSTRUMENT CHANNEL. LETDOWN AND FEEDWATER FLOWS WERE QUICKLY RE-ESTABLISHED. THE INVERTER WAS RETURNED TO SERVICE AT 1312:07 HOURS. THE UNIT WAS IN MODE 3, HOT STANDBY, AT THE TIME OF THIS INCIDENT. THIS INCIDENT IS ASSIGNED CAUSE CODE A, PERSONNEL ERROR. THE RESPONSIBLE SUPERVISOR FAILED TO ADEQUATELY INSTRUCT THE TECHNICIANS TO PROPERLY INVESTIGATE AND REVIEW THE PROBLEM WITH THE INVERTER BEFORE PERFORMING CORRECTIVE MAINTENANCE. ALSO, THE TECHNICIANS FAILED TO RECOGNIZE THAT THE INSTRUCTIONS THEY HAD RECEIVED WERE INCORRECT FOR THE CONDITIONS THEY HAD OBSERVED. THIS INCIDENT IS REPORTABLE PURSUANT TO 10 CFR 50.73, SECTION (A)(2)(IV) AND 10 CFR 50.72, SECTION (B)(2)(II).

FORM 157 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
414	1988	019	1	8809290344	210568	05/27/88

DOCKET:414 CATAWBA 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: DUKE
FACILITY OPERATOR: DUKE POWER CO.
SYMBOL: DPC

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

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

REFERENCE LERS:
1 413/87-006 2 414/86-022 3 414/87-007

ABSTRACT
POWER LEVEL - 000%. ON MAY 27, 1988, AT 1403:21 HOURS, AN UNDERVOLTAGE CONDITION OCCURRED ON THE 240/120 VAC AUXILIARY CONTROL POWER SYSTEM DISTRIBUTION PANEL 2KXPB. THIS UNDERVOLTAGE CONDITION OCCURRED WHILE CYCLING THE ALTERNATE SOURCE TO KXPB BREAKER IN AN ATTEMPT TO CLEAR AN INDICATED ALTERNATE SOURCE UNDERVOLTAGE. THE INDICATED UNDERVOLTAGE CONDITION WAS NOTICED WHILE ISOLATING THE 2KXPB INVERTER FOR CORRECTIVE MAINTENANCE. THE PANEL'S POWER SUPPLY HAD PREVIOUSLY BEEN SWAPPED TO THE ALTERNATE SOURCE TO KXPB SUPPLY FROM REGULATED AC POWER SOURCE, 2RDB. UPON NOTICING THE LOW ALTERNATE SOURCE VOLTAGE INDICATION ON THE MANUAL BYPASS SWITCH, 2KXMB, THE INVOLVED NUCLEAR OPERATIONS SPECIALIST (NOS) REQUESTED ASSISTANCE FROM CONTROL ROOM PERSONNEL. A CONTROL ROOM OPERATOR (CRO) UTILIZED THE OPERATOR AID COMPUTER (OAC) GRAPHICS TO VERIFY THAT A LOW VOLTAGE WAS INDICATED. THE CRO RECOMMENDED THAT THE NOS CYCLE THE ALTERNATE SOURCE TO KXPB BREAKER TO CLEAR THE UNDERVOLTAGE CONDITION. CYCLING THE BREAKER CAUSED AN APPROXIMATE 5 SECOND LOSS OF POWER TO THE LOADS SUPPLIED BY THE KXPB DISTRIBUTION PANEL, ONE OF WHICH WAS THE CONTROL POWER TO MAIN FEEDWATER PUMP TURBINE (CFPT) 2B. THIS RESULTED IN A DECREASE IN CFPT 2B SPEED, LOW STEAM GENERATOR LEVELS, AND A SUBSEQUENT AUTOMATIC REACTOR TRIP. THE UNIT WAS AT 100% POWER AT THE TIME OF THIS INCIDENT.

FORM 158 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
414	1988	024	1	8906060078	214077	06/22/88

DOCKET:414 CATAWBA 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: DUKE
FACILITY OPERATOR: DUKE POWER CO.
SYMBOL: DPC

COMMENTS
STEP 2: COMP RLX - LATCHING TRANSFER RELAY.

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:
1 414/87-009

ABSTRACT
POWER LEVEL - 098%. ON 6/22/88, AT 0120 HOURS, THE UNIT 2 TURBINE DRIVEN AUX. FEEDWATER PUMP (CAPT) AUTOMATICALLY STARTED AND SUPPLIED FLOW TO STEAM GENERATORS (S/GS) B AND C. IN ADDITION, CONTROL ROOM INDICATION WAS LOST FOR 600V BLACKOUT LOAD CENTER 2LXI AND PRESSURIZER HEATER A. THIS INCIDENT OCCURRED WHEN INSTRUMENTATION AND ELECTRICAL (IAE) PERSONNEL DISCONNECTED THE CABLE SUPPLYING ALTERNATE 125 VDC CONTROL POWER FROM THE ALTERNATE BATTERY (2DPB) IN ORDER TO CLEAN ITS TERMINALS. IT WAS UNKNOWN TO IAE AND OPERATIONS PERSONNEL THAT 125 VDC CONTROL POWER HAD PREVIOUSLY BEEN AUTOMATICALLY TRANSFERRED FROM THE NORMAL SUPPLY (DISTRIBUTION CENTER 2CDA) TO THE ALTERNATE SUPPLY (2DPB). THE CONTROL ROOM OPERATOR (CRO) STABILIZED THE INCREASING LEVELS IN S/GS B AND C, AND SUBSEQUENTLY SECURED THE CAPT. THE UNIT SUPERVISOR RESET THE RELAY WHICH TRANSFERS 125 VDC CONTROL POWER, RESTORING THE NORMAL POWER SUPPLY TO THE AFFECTED LOADS. UNIT 2 WAS AT 98% POWER, AT THE TIME. THE CAUSE OF THE SWAP OF 125 VDC CONTROL POWER FROM THE NORMAL TO ALTERNATE SUPPLY COULD NOT BE DETERMINED. THE CONTROL ROOM STATUS INDICATION LIGHT WAS OFF, INDICATING THAT 125 VDC BLACKOUT CONTROL POWER WAS BEING SUPPLIED BY THE NORMAL SUPPLY, EVEN THOUGH IT WAS BEING SUPPLIED BY THE ALTERNATE SUPPLY. THIS INCIDENT MAY HAVE BEEN PREVENTED BY MORE THOROUGH PROCEDURES.

FORM 159 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
425	1990	004	0	9005160032	218185	04/11/90

DOCKET:425 VOGTLE 2 TYPE:PWR
REGION: 2 NSSS:WE
ARCHITECTURAL ENGINEER: BESS
FACILITY OPERATOR: GEORGIA POWER CO.
SYMBOL: GPC

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.

REFERENCE LERS:
1 424/87-046 2 424/87-077 3 424/87-080

ABSTRACT
POWER LEVEL - 100%. ON APRIL 11, 1990, THE UNIT SHIFT SUPERVISOR ,(USS) FOR THE ONCOMING NIGHT SHIFT WAS REVIEWING THE UNIT SHIFT SUPERVISOR'S LOG. AT 1615 CDT, HE NOTICED THAT THE POWER RANGE CALORIMETRIC CHANNEL CALIBRATION HAD NOT BEEN PERFORMED SINCE 1045 CDT ON APRIL 10, 1990. TECHNICAL SPECIFICATION (TS) 4.3.1.1, TABLE 4.3-1, ITEM 2A, REQUIRES THAT THIS CALIBRATION BE PERFORMED DAILY FOR THE POWER RANGE NEUTRON FLUX HIGH SETPOINT. THE USS ON DUTY WAS ADVISED AND PERSONNEL BEGAN TO PERFORM THE NECESSARY CALIBRATION. THE SURVEILLANCE INTERVAL PLUS THE 25% GRACE PERIOD (24 HOURS PLUS 6 HOURS) EXPIRED AT 1645 CDT AND THE UNIT ENTERED OPERATION UNDER TS 3.0.3. BY 1736 CDT, THE CALORIMETRIC CALIBRATION WAS SATISFACTORILY COMPLETED WITH NO ADJUSTMENTS REQUIRED, AND THE UNIT EXITED OPERATION UNDER TS 3.0.3. THE CAUSE OF THIS EVENT WAS A COGNITIVE PERSONNEL ERROR BY THE USS ON DUTY, RESULTING IN A FAILURE TO COMPLY WITH PROCEDURE 14000-C, "OPERATIONS SHIFT AND DAILY SURVEILLANCE LOGS." THE USS WAS COUNSELED REGARDING THE IMPORTANCE OF COMPLIANCE WITH TS REQUIREMENTS.

FORM 160 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
440	1987	042	0	8707240079	205486	06/17/87

DOCKET:440 PERRY 1 TYPE:BWR
REGION: 3 NSSS:GE
ARCHITECTURAL ENGINEER: GLBT
FACILITY OPERATOR: CLEVELAND ELECTRIC ILLUMINATING CO.
SYMBOL: CEI

COMMENTS
STEP 1: PART NO. 169C8671.P013.

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.

REFERENCE LERS:
1 440/86-044

ABSTRACT
POWER LEVEL - 023%. ON JUNE 17, 1987 AT 1139, A REACTOR PROTECTION SYSTEM (RPS) ELECTRICAL PROTECTION ASSEMBLY (EPA) BREAKER TRIPPED, RESULTING IN DEENERGIZATION OF RPS BUS A AND CLOSURE OF THE OUTBOARD MAIN STEAM ISOLATION VALVES (MSIV). CLOSURE OF THE MSIVS RESULTED IN A REACTOR SCRAM. LOSS OF THE RPS BUS ALSO RESULTED IN A NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM (NSSSS) ISOLATION SIGNAL AND CLOSURE OF THE ASSOCIATED CONTAINMENT ISOLATION VALVES. THE ROOT CAUSE OF THE CONTAINMENT ISOLATION WAS A FAILED COMPONENT OF AN EPA LOGIC CARD WHICH PRODUCED SPURIOUS OUTPUT VOLTAGE PULSES AND RESULTANT TRIPPING OF THE EPA BREAKER. THE CAUSE OF THE MSIV CLOSURE AND RESULTANT SCRAM WAS THE DESIGN OF THE POWER SUPPLIES TO THE MSIV PILOT VALVE SOLENOIDS. BOTH OF THE THE SOLENOIDS FOR EACH OUTBOARD MSIV WERE POWERED FROM THE SAME RPS BUS, THEREFORE, MSIV CLOSURE RESULTED WHEN NORMAL RPS POWER WAS LOST TO BOTH SOLENOIDS. THE LOGIC CARDS FOR THE RPS BUS A EPAS WERE REPLACED, CHANGES WERE MADE TO THE APPROPRIATE PLANT OPERATING INSTRUCTIONS, AND SURVEILLANCE TESTING OF THE NORMAL RPS POWER SUPPLY OUTPUT BREAKERS WAS COMPLETED ON JUNE 20. THE EPA CARDS FOR THE NORMAL RPS B POWER SUPPLY WERE REPLACED AND THE POWER SUPPLY CONFIGURATION TO THE INBOARD AND OUTBOARD MSIV SOLENOIDS WAS MODIFIED DURING THE CURRENT PLANT OUTAGE.

FORM 161 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
440	1987	070	1	8807210080	209915	10/24/87

DOCKET:440 PERRY 1 TYPE:BWR
REGION: 3 NSSS:GE
ARCHITECTURAL ENGINEER: GLBT
FACILITY OPERATOR: CLEVELAND ELECTRIC ILLUMINATING CO.
SYMBOL: CEI

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:
1 440/86-004 2 440/86-050 3 440/86-071 4 440/86-072
5 440/86-091 6 440/87-042 7 440/88-006

ABSTRACT
POWER LEVEL - 100%. ON OCTOBER 24, 1987 AT 0101, A REACTOR PROTECTION SYSTEM (UPS) ELECTRICAL PROTECTION ASSEMBLY (EPA) BREAKER TRIPPED DUE TO AN OVERVOLTAGE CONDITION, RESULTING IN DEENERGIZATION OF RPS BUS A AND A NUCLEAR STEAM SUPPLY SHUTOFF SYSTEM (NSSSS) DIVISION 1 BALANCE OF PLANT (BOP) ISOLATION. AFFECTED SYSTEMS AND COMPONENTS WERE RESTORED BY 0215. THE ROOT CAUSE OF THIS EVENT IS INDETERMINATE. INVESTIGATION HAS DETERMINED THAT THE EPA BREAKERS DID TRIP ON A HIGH RPS MOTOR-GENERATOR (MG) SET OUTPUT VOLTAGE. HOWEVER, EXTENSIVE TROUBLESHOOTING IDENTIFIED NO EVIDENT CAUSE FOR THE MG SET OUTPUT VOLTAGE DRIFTING HIGH. THE POTENTIAL CAUSE OF THIS EVENT WAS ISOLATED TO THE VOLTAGE REGULATOR AND/OR RHEOSTAT. THEREFORE, BOTH WERE REPLACED AND SENT TO THE VENDOR FOR ADDITIONAL EVALUATION. THE VENDOR ANALYSIS DID NOT IDENTIFY ANY INDIVIDUAL FAILURES OR OPERATIONAL ANOMALIES OF THESE COMPONENTS. THE EXISTING REPETITIVE TASK WHICH IS PERIODICALLY PERFORMED ON THE RPS MG SETS AND THE ASSOCIATED CONTROL CIRCUITRY HAS BEEN REVISED TO ENSURE THAT THE OUTPUT VOLTAGE RHEOSTAT IS PROPERLY ADJUSTED AND SECURED. IT ALSO REQUIRES CLEANING OF THE RHEOSTAT WIPER AND WINDINGS AND TESTING FOR DEAD SPOTS THROUGHOUT THE FULL RANGE OF RESISTANCE.

FORM 162 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
440	1988	012	0	8806020232	209479	04/27/88

DOCKET:440 PERRY 1 TYPE:BWR
REGION: 3 NSSS:GE
ARCHITECTURAL ENGINEER: GLBT
FACILITY OPERATOR: CLEVELAND ELECTRIC ILLUMINATING CO.
SYMBOL: CEI

COMMENTS
$PA/CTP/2 REM: SCRAM ON LOSS OF FEEDWATER - HPCS UNAVAILABLE.

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 - 100%. ON APRIL 27, 1988, AT 2209, AN AUTOMATIC REACTOR SCRAM OCCURRED DUE TO A REACTOR WATER LEVEL OF LESS THAN LEVEL 3 (+177.7 INCHES ABOVE THE TOP OF ACTIVE FUEL). THE LOW WATER LEVEL OCCURRED AFTER AN IMPROPER TRANSFER OF DC POWER SUPPLIES RESULTING IN A TEMPORARY LOSS OF AC CONTROL POWER FOR THE HOT SURGE TANK LEVEL CONTROL VALVES AND A SUBSEQUENT TRIP OF ALL OPERATING FEEDWATER PUMPS. THE CAUSES OF THE EVENT ARE PERSONNEL ERROR AND PROCEDURAL INADEQUACY. A MISINTERPRETATION OF THE INSTRUCTION DESCRIBING DC POWER SUPPLY TRANSFERS PLACED THE DC ELECTRICAL SYSTEM IN A NON-RECOMMENDED LINEUP LEADING TO THE LOSS OF VITAL 120 VAC POWER FED FROM THE DC BUS VIA AN INVERTER. THE INSTRUCTION WAS CONFUSING AND DIFFICULT TO IMPLEMENT. CORRECTIVE ACTIONS TO PREVENT RECURRENCE INCLUDE; COUNSELING OF THE OPERATORS INVOLVED REGARDING THEIR RESPONSIBILITIES TOWARDS FAIMILARITY WITH INSTRUCTIONS AND PROCEDURAL COMPLIANCE, TRAINING FOR ALL OPERATORS REGARDING THE SEQUENCE OF EVENTS, AND REVISING THE APPROPRIATE SYSTEM OPERATING INSTRUCTIONS TO PROVIDE GREATER EASE OF USE BY THE OPERATOR.

FORM 163 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
445	1990	002	0	9004170049	217600	03/05/90

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

COMMENTS
STEP 3: COMP XPWT - FERRORESONANT TRANSFORMER. STEPS 5,12: MODEL NO. ESELIV, 7.5 KVA. STEP 10: COMP LX - CONTAINMENT ISOLATION AND SWAP OF CHARGING PUMP SUCTION FROM THE VCT TO THE RWST.

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.

REFERENCE LERS:
1 445/90-001 2 498/89-008

ABSTRACT
POWER LEVEL - 000%. AT 0155 CST ON 3/5/90, WHILE CONDUCTING COLD ROD DROP TESTING, A BLOWN FUSE IN INVERTER IV1PC1 RESULTED IN A REACTOR TRIP AND A SOURCE RANGE FLUX DOUBLING (SRFD) SIGNAL. THE DISTRIBUTION PANELBOARD WAS RE-ENERGIZED ON ALTERNATE POWER. THIS RE-ENERGIZATION CAUSED A MOMENTARY SPIKE ON A WIDE RANGE REACTOR COOLANT SYSTEM (RCS) PRESSURE CHANNEL WHICH CLOSED THE RESIDUAL HEAT REMOVAL (RHR) HOT LEG SUCTION VALVE, RESULTING IN THE TEMPORARY LOSS OF SHUTDOWN COOLING. SHUTDOWN COOLING WAS RESTORED AT 0228 CST ON 3/5/90. AT APPROXIMATELY 0248 CST, AFTER VERIFYING THAT INDICATION WAS APPROPRIATE FOR PLANT CONDITIONS, THE SRFD SIGNAL WAS RESET AND AFFECTED COMPONENTS RESTORED TO THEIR ORIGINAL POSITION. THE ROOT CAUSE FOR THE FUSE FAILURE HAS NOT BEEN DETERMINED. THE POSSIBLE CAUSES IDENTIFIED INCLUDE FAILURE OF THE FERRO-RESONANT TRANSFORMER, AND LOOSE CONNECTIONS IN THE GATING CIRCUIT. CORRECTIVE ACTIONS INCLUDED THE REPLACEMENT OF THE FERRO-RESONANT TRANSFORMER AND A REWORK OF ALL LOOSE CONNECTIONS IN THE INVERTER. A DETAILED VISUAL INSPECTION OF THE THREE OTHER SIMILAR INVERTERS WILL BE PERFORMED DURING THE NEXT COLD SHUTDOWN OF SUFFICIENT DURATION. THIS INSPECTION WILL INCLUDE THE VERIFICATION OF ALL BOLTED AND SOLDERED CONNECTIONS IN THE INVERTERS.

FORM 164 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
455	1987	007	1	8709080017	206288	05/04/87

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

COMMENTS
STEP 2: PART NUMBER 1815A70H23. STEP 3: PART NUMBER 1538A73H10. STEP 1: CAUSE AX - CALIBRATION.

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 - 088%. ON MAY 4, 1987, AT 0644, THE UNIT 2 REACTOR TRIPPED DURING THE PERFORMANCE OF THE QUARTERLY POWER RANGE CALIBRATION SURVEILLANCE ON CHANNEL NI-43. UNIT 2 WAS IN MODE 1 - POWER OPERATIONS AT 88% POWER. AS A REQUIREMENT OF THE SURVEILLANCE, THE POWER RANGE CHANNEL'S BISTABLES WERE TRIPPED. DURING THE CONDUCT OF THE SURVEILLANCE, THE INSTRUMENT BUS 211 BREAKER TRIPPED. THIS DE-ENERGIZED CHANNEL N41 AND TRIPPED ITS BISTABLES. THIS SATISFIED THE 2 OUT OF 4 LOGIC COINCIDENCE FOR HIGH NEUTRON FLUX REACTOR TRIP. AS A NORMAL RESULT, THE STEAM GENERATOR LEVEL REACHED THE LOW LEVEL AUTOMATIC AUXILIARY FEEDWATER (AF) PUMP START SETPOINT. THE 2B DIESEL DRIVEN AF PUMP STARTED, AS EXPECTED. THE 2A AF PUMP DID NOT START AS A RESULT OF THE INSTRUMENT BUS 211 TRIP. THE UNIT WAS RECOVERED CONSISTENT WITH EMERGENCY PROCEDURES WITHOUT INCIDENT. THE CAUSE OF THE INSTRUMENT BUS 211 TRIP IS DUE TO A FAILURE OF A SILICON CONTROLLED RECTIFIER AND A CAPACITOR IN THE INVERTER. THE CAPACITOR FAILURE CAUSED THE RECTIFIER FAILURE. THE FAILURE MECHANISM OF THE CAPACITOR COULD NOT BE DETERMINED AND IS ATTRIBUTABLE TO NORMAL WEAROUT. THE COMPONENTS WERE REPLACED AND THE BUS RE-ENERGIZED. THERE WERE NO ADVERSE SAFETY CONSEQUENCES.

FORM 165 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
455	1990	006	0	9010150142	219766	09/03/90

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

COMMENTS
STEP 11: PART NO. 443A322H17. STEP 12: PART NO. A501950. STEP 17: CAUSE AX - PLANNED LOSS DURING SURVEILLANCE.

WATCH-LIST CODES FOR THIS LER ARE:
32 COMMUNICATION PROBLEM
40 PROCEDURAL DEFICIENCY
913 UPDATE NEEDED
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:
1 454/90-001 2 454/90-009

ABSTRACT
POWER LEVEL - 000%. ON 9/3/90 AT APPROXIMATELY 0805, WITH UNIT 2 IN MODE 5 (COLD SHUTDOWN) 2BOS 3.2.1.1.A-1, "UNIT TWO TRAIN A MANUAL SAFETY INJECTION INITIATION AND MANUAL PHASE A INITIATION SURVEILLANCE," WAS BEING PERFORMED PER THE REFUELING OUTAGE SCHEDULE. AFTER PERFORMING THE NORMAL SAFETY INJECTION (SI) (JE), IT WAS NOTED THAT THE 2C REACTOR CONTAINMENT FAN COOLER (RCFC) LOW SPEED FAN BREAKER DID NOT CLOSE. ATTEMPTS TO CLOSE THE BREAKER WERE UNSUCCESSFUL. AT 0820, THE 480 VOLT BUS THAT FEEDS THE BREAKER WAS DE-ENERGIZED TO ALLOW REMOVAL OF THE BREAKER. AT 0850, WHILE STRIPPING THE BUS OF ITS ALTERNATING CURRENT LOAD, INSTRUMENT INVERTERS 211 AND 213 WERE DE-ENERGIZED DUE TO A COMMUNICATIONS BREAKDOWN. WHEN THE INSTRUMENT BUSES WERE DE-ENERGIZED, THE PRESSURIZER PRESSURE LOW SI AND STEAMLINE PRESSURE LOW SI BLOCKS WERE LOST ON TRAIN A. THE UNIT REACTOR OPERATOR WAS UNAWARE THAT THE BLOCKS HAD BEEN LOST AND THE SURVEILLANCE DID NOT CONTAIN AN EMERGENCY EXIT SECTION TO PROVIDE RESTORATION GUIDANCE. AT 0902, THE TRAIN A REACTOR TRIP BREAKER WAS CLOSED PER THE SURVEILLANCE AND A SAFETY INJECTION SIGNAL RESULTED DUE TO A LOSS OF THE REACTOR TRIP INTERLOCK (P-4) WHILE CYCLING THE REACTOR TRIP BREAKER. CORRECTIVE ACTIONS INCLUDE A PROCEDURE REVISION TO THE MANUAL SI SURVEILLANCE TO INCLUDE AN EMERGENCY EXIT SECTION. THIS EVENT WILL ALSO BE INCLUDED IN OPERATOR REQUIRED LISTENING.

FORM 166 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
456	1987	010	0	8703170197	203537	02/09/87

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

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:
1 456/86-005 2 456/86-011 3 456/87-002

ABSTRACT
POWER LEVEL - 000%. AT 1351 ON FEBRUARY 9, 1987, THE OUTPUT BREAKER TO THE INVERTER FEEDING INSTRUMENT BUS 111 WAS INADVERTENTLY TRIPPED. THIS CAUSED A LOSS OF CONTROL POWER TO SOURCE RANGE N-31 AND INTERMEDIATE RANGE N-35 GENERATING A REACTOR TRIP SIGNAL. THE BREAKER WAS RESET WITHIN ONE MINUTE AND FOUR SECONDS, ALLOWING THE REACTOR TRIP SIGNAL TO CLEAR. THE CAUSE WAS ATTRIBUTED TO PERSONNEL ERROR BY CONTRACTORS WORKING IN THE AREA. A BAG WAS BEING LOWERED IN FRONT OF THE CABINET WHICH HOUSES THE BREAKER THAT FEEDS BUS 111 INVERTER. AS THE BAG WAS LOWERED, IT CAME IN CONTACT WITH THE HANDLE OF THE BREAKER, TRIPPING THE BREAKER, CAUSING A LOSS OF POWER TO INSTRUMENT BUS 111, AND A LOSS OF POWER TO SOURCE AND INTERMEDIATE RANGE MONITORS. THIS, IN TURN, CAUSED A REACTOR TRIP SIGNAL. THE ELECTRICAL LINEUP TO INSTRUMENT BUS 111 WAS VERIFIED. THE CONSTRUCTION CRAFT IN THE AREA WERE ORALLY INSTRUCTED ON THE ACTIONS TO TAKE WHEN EQUIPMENT HAS BEEN IMPACTED. THESE CONCERNS HAVE BEEN HIGHLIGHTED TO CONSTRUCTION MANAGEMENT, AND INCREASED ATTENTION IS BEING GIVEN TO CONSTRUCTION IMPACT ON UNIT 1 OPERATION. THIS IS EVIDENCED BY THE WORKING OF OVER 900,000 MANHOURS SINCE THE LAST EVENT OF A SIMILAR NATURE.

FORM 167 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
456	1989	001	1	8903290371	213395	02/06/89

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

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 - 000%. AT 1322 ON 2/16/89 UNIT 1 WAS IN MODE 3 WITH ALL THE CONTROL RODS INSERTED AND THE REACTOR TRIP BREAKERS CLOSED. A MOMENTARY LOSS OF OUTPUT VOLTAGE ON INSTRUMENT INVERTER 112 CAUSED A REACTOR TRIP SIGNAL DUE TO INTERMEDIATE RANGE HIGH FLUX BISTABLE FROM CHANNEL N36 REVERTING TO ITS ESF SAFE CONFIGURATION. THE OPENING OF THE REACTOR TRIP BREAKERS COINCIDENT WITH RCS AVERAGE TEMPERATURE LESS THAN 364F CAUSED A FEEDWATER ISOLATION SIGNAL. AT 1323 THE FEEDWATER ISOLATION SIGNAL WAS RESET AND NORMAL FEEDWATER FLOW WAS ESTABLISHED. PERSONNEL IN THE AREA AT THE TIME OF THE EVENT WERE INDEPENDENTLY INTERVIEWED, THEIR ACTIVITIES DID NOT PLACE THEM IN CONTACT WITH INSTRUMENT INVERTER 112 PHYSICALLY OR ELECTRICALLY. THE MOMENTARY LOSS OF INSTRUMENT INVERTER OUTPUT VOLTAGE IS STILL UNDER INVESTIGATION. THE UNIT 1 INSTRUMENT INVERTERS ARE SCHEDULED FOR AN INSPECTION DURING THE NEXT OUTAGE OF OPPORTUNITY. THIS REPORT WILL BE SUPPLEMENTED SHOULD THE ROOT CAUSE BE DETERMINED. THERE HAVE BEEN PREVIOUS OCCURRENCES OF REACTOR TRIPS INVOLVING INSTRUMENT INVERTERS, HOWEVER THE PREVIOUS EVENTS WERE NOT THE RESULT OF SPURIOUS PERTURBATIONS ON THE INVERTER. THE CORRECTIVE ACTIONS FOR THOS EVENTS WERE IMPLEMENTED ADDRESSING BOTH ROOT AND CONTRIBUTING CAUSES. PREVIOUS CORRECTIVE ACTIONS ARE NOT APPLICABLE TO THIS EVENT.

FORM 168 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
456	1989	005	0	8905250462	214012	04/23/89

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

COMMENTS
STEP 1: MODEL NO. 20 MFD, 600V; PART NO. 1589A93H23.

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

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

REFERENCE LERS:
1 456/87-010 2 456/89-001.

ABSTRACT
POWER LEVEL - 088%. AT 1349 ON 4/22/89 INSTRUMENT INVERTER 111 TRIPPED. AT 1409 INSTRUMENT BUS 111 WAS RE-ENERGIZED FROM ITS ASSOCIATED CONSTANT VOLTAGE TRANSFORMER (CVT). AT 1800 MAINTENANCE BEGAN TROUBLESHOOTING THE INVERTER. THE INVERTER WAS NOT REPAIRED WITHIN THE 24 HOURS PROVIDED FOR IN THE TECH SPECS. A PLANT SHUTDOWN WAS REQUIRED. AT 1248 ON 4/23 A REACTOR SHUTDOWN WAS INITIATED. AN UNUSUAL EVENT WAS DECLARED. AT 1259 THE APPROPRIATE NRC NOTIFICATION WAS MADE. AT 1320 UNIT 1 ENTERED MODE 3, HOT STANDBY. AT 1500 ON 4/24 A SHORTED CAPACITOR WAS FOUND. THE CAPACITOR WAS REPLACED AND THE INVERTER WAS SUCCESSFULLY STARTED. AT 0221 ON 4/25 THE INSTRUMENT BUS 111 WAS TRANSFERRED FROM THE CVT TO THE INVERTER. AT 1030 THE INVERTER WAS DECLARED OPERABLE. THE CAUSE OF THIS EVENT WAS THE SHORTED CAPACITOR. THIS WAS ATTRIBUTED TO NORMAL WEAR. THE CORRECTIVE ACTIONS WERE TO RE-ENERGIZE INSTRUMENT BUS 111 FROM THE CVT AND REPAIR THE INVERTER. A CLEANING AND INSPECTION PROGRAM WITH A FREQUENCY OF 18 MONTHS WILL BE IMPLEMENTED. CAPACITOR WILL BE REPLACED WITH A FREQUENCY OF 3 YEARS STARTING WITH THE 9/89 REFUELING OUTAGE. THERE HAVE BEEN PREVIOUS OCCURRENCES OF LOSS OF INVERTER OUTPUT VOLTAGE. PREVIOUS CORRECTIVE ACTIONS ARE NOT APPLICABLE TO THIS EVENT.

FORM 169 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
456	1990	003	0	9005020091	218060	03/26/90

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

COMMENTS
STEP 1: CAUSE AX - TESTING.

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 - 093%. AT 0048 ON 3/26/90 POWER RANGE NUCLEAR INSTRUMENT CHANNEL N-41 (PR 41) QUARTERLY CALIBRATION WAS INITIATED. THE ACTION STATEMENT OF TECH SPEC 3.3.1 REQUIRED THE BISTABLES FOR PR-41 TO BE PLACED IN THE TRIPPED CONDITION WITHIN 6 HOURS. THE INSTRUMENT TECHNICAN (CST) WAS INFORMED BY THE CONTROL ROOM SUPERVISOR (SCRE) THAT THE CALIBRATION MUST BE COMPLETED WITHIN 6 HOURS OR THE CHANNEL WOULD HAVE TO BE PLACED IN A TRIPPED CONDITION. THIS IS ACCOMPLISHED BY REMOVING THE CONTROL POWER FUSES. AT 0130 AND 0400 THE CST AND THE INSTRUMENT MAINTENANCE (IM) SUPERVISOR INFORMED THE SCRE THAT THE CALIBRATION WOULD NOT BE COMPLETED WITHIN 6 HOURS. THE SCRE PERCEIVED THAT THE FUSES WERE NEEDED TO PERFORM PORTIONS OF THE CALIBRATION AND ASSUMED THAT THE CST WOULD REMOVE THEM WHEN THEY WERE NO LONGER REQUIRED. PRIOR TO TURNOVER THE SCRE GLANCED AT THE PR-41 DRAWER AND OBSERVED THAT BISTABLE LIGHTS WERE ILLUMINATED AND ASSUMED THAT THE FUSES WERE REMOVED, HOWEVER THIS WAS A RESULT OF THE CALIBRATION. AT 0717 IT WAS RECOGNIZED THAT THE FUSES HAD NOT BEEN REMOVED. AT 0719 THE CONTROL POWER FUSES WERE REMOVED. THE CAUSE OF THIS EVENT WAS PERSONNEL ERROR. TRAINING WILL BE CONDUCTED FOR OPERATING PERSONNEL. NUCLEAR INSTRUMENT PROCEDURES THAT REQUIRE COMPONENTS POSITIONED DIFFERENT FROM THE ACTION STATEMENT WILL BE REVISED TO PROVIDE FOR SCRE NOTIFICATION.

FORM 170 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
457	1988	003	0	8803040343	208574	01/31/88

DOCKET:457 BRAIDWOOD 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
FACILITY OPERATOR: COMMONWEALTH EDISON CO.
SYMBOL: CWE

COMMENTS
STEP 3: VENDOR CARBONE; ROUND FIBERGLASS FUSE NO. 773E4040. STEP 2: VENDOR FERRAZ. $MP/E

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.

REFERENCE LERS:
1 457/86-005 2 457/86-011 3 457/87-002 4 457/87-010

ABSTRACT
POWER LEVEL - 000%. AT 1052 ON JANUARY 31, 1988, A REACTOR TRIP SIGNAL WAS RECEIVED AS A RESULT OF THE DE-ENERGIZATION OF INSTRUMENT BUS 212. THE DE-ENERGIZATION WAS CAUSED BY CONTRACTOR PERSONNEL WORKING IN THE AREA. THE CONTRACTORS WERE PREPARING THE INVERTER CABINET FOR BUS 212 FOR PAINTING. THE BUS WAS RE-ENERGIZED FROM ITS ASSOCIATED CONSTANT VOLTAGE TRANSFORMER, THE PAINTERS WERE TOLD TO DISCONTINUE WORK ON THE INVERTER CABINET, AND A FUSE WHICH WAS BLOWN AS A RESULT OF IMPROPER DE-ENERGIZATION OF THE BUS WAS REPLACED. THERE HAVE BEEN FOUR PREVIOUS OCCURRENCES.

FORM 171 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	OCS NUMBER	NSIC	EVENT DATE
457	1988	008	1	8806170151	209680	02/20/88

DOCKET:457 BRAIDWOOD 2 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: SLXX
FACILITY OPERATOR: COMMONWEALTH EDISON CO.
SYMBOL: CWE

COMMENTS
STEP 4: MODEL NO. 770B36, PART NO. 23L6066. $D/E/1.

WATCH-LIST CODES FOR THIS LER ARE:
37 MANUFACTURING 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 - 000%. AT 0626 ON FEBRUARY 20, 1988, DURING THE PERFORMANCE OF STARTUP TEST BWSU RD-70, THERE WAS A LOSS OF POWER TO INSTRUMENT BUS 212. THIS RESULTED IN A REACTOR TRIP SIGNAL BEING GENERATED, AND CAUSED THE REACTOR TRIP BREAKERS TO OPEN. THIS LOSS OF POWER ALSO CAUSED A BORON DILUTION PROTECTION SYSTEM ACTUATION. AN EQUIPMENT OPERATOR WAS SENT TO THE BUS AND HE RE-ENERGIZED IT FROM ITS CONSTANT VOLTAGE TRANSFORMER. ACTION TO PREVENT RECURRENCE WILL BE TO CONDUCT AN INSPECTION OF ALL "FAST-ON-CONNECTORS" FOR HEAT DAMAGE TO THE SAME CONNECTIONS FOR EACH INVERTER ON BOTH UNITS. THERE HAVE BEEN NO PREVIOUS OCCURRENCES.

FORM 172 LER SCSS DATA 08-30-91

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DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
458	1987	015	0	8708120414	205670	06/21/87

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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 3: SWITCHOVER FROM NORMAL TO ALTERNATE POWER SUPPLY.

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.

REFERENCE LERS:
1 458/86-024

ABSTRACT
POWER LEVEL - 000%. AT 1015 ON JUNE 21, 1987 WITH THE UNIT IN COLD SHUTDOWN (MODE 4), A REACTOR PROTECTION SYSTEM (RPS) ACTUATION OCCURRED WITH THE CONTROL RODS ALREADY INSERTED. INTERMEDIATE RANGE MONITOR (IRM) CHANNEL E SPIKED CAUSING A HALF SCRAM ON RPS DIVISION A. AT THE SAME TIME, OPERATIONS WAS PLACING RPS DIVISION B ON THE ALTERNATE POWER SUPPLY, MOMENTARILY DE-ENERGIZING THE B DIVISION CAUSING A HALF SCRAM ON THE RPS DIVISION B. THE ONLY OTHER ENGINEERED SAFETY FEATURE ACTUATIONS WHICH OCCURRED WERE ANTICIPATED AS A RESULT OF THE RPS POWER SUPPLY SWAP. OPERATIONS WAS PERFORMING THE SWAP FROM THE RPS NORMAL POWER SUPPLY TO ALTERNATE POWER SUPPLY TO SUPPORT ELECTRICAL MAINTENANCE TO COMPLETE A MODIFICATION AS A RESULT OF LER 86-024. THE "A" RPS BUS HAD BEEN SWAPPED FROM NORMAL TO ALTERNATE POWER SUPPLY EARLIER WITH NO PROBLEMS OCCURRING. MAINTENANCE WORK REQUEST (MWR) 106034 WAS GENERATED TO INVESTIGATE THE SPIKING PROBLEM ON IRM CHANNEL E. MWR 106034 IS CURRENTLY IN THE PLANNING PHASE AND IS AWAITING A PLANT OUTAGE FOR WORK. THERE WAS NO 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 WAS IN COLD SHUTDOWN AND ALL CONTROL RODS WERE ALREADY INSERTED.
RTED.

FORM 173 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
458	1988	018	4	9002120339	216666	08/25/88

DOCKET:458 RIVERBEND 1 TYPE:BWR
REGION: 4 NSSS:GE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: GULF STATES UTILITIES
SYMBOL: GSU

COMMENTS
WATCH 975 - REVERSE FLOW IN HPCS INJECTION LINE DUE TO CHECK VALVE FAILURE; POTENTIAL FOR LOCA. STEP 2: COMP MSC - BRUSHES, EFF IX - LOSS OF EXCITER FIELD VOLTAGE. STEP 7: COMP X - SRV LIFT. STEP 25: TYPE 1154, CAUSE LX - LACK OF ELECTRONIC DAMPENING. STEP 30: EFF HX - REVERSE FLOW IN HPCS INJECTION LINE.

WATCH-LIST CODES FOR THIS LER ARE:
942 UNUSUAL EVENT
40 PROCEDURAL DEFICIENCY
975 POSSIBLE SIGNIFICANT EVENT

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

REFERENCE LERS:
1 458/88-004 2 458/88-021.

ABSTRACT
POWER LEVEL - 100%. AT 1232 ON 8/25/88 WITH THE UNIT AT 100% POWER (OPERATIONAL CONDITION 1), THE REACTOR AUTOMATICALLY SCRAMMED DUE TO A TURBINE CONTROL VALVE FAST CLOSURE CAUSED BY A LOSS OF MAIN GENERATOR FIELD EXCITATION RESULTING IN AUTOMATIC MAIN GENERATOR AND TURBINE TRIPS. IMMEDIATELY FOLLOWING THE SCRAM, REACTOR PRESSURE SPIKED TO A PEAK BETWEEN 1100 AND 1117 PSIG CAUSING THE 5 LOW-LOW SET SAFETY RELIEF VALVES TO CYCLE PER DESIGN. THE TURBINE BYPASS VALVES OPENED AS REQUIRED AND THE REACTOR RECIRCULATION PUMPS TRANSFERRED TO SLOW SPEED PER DESIGN. REACTOR WATER LEVEL INITIALLY DECREASED TO +4 INCHES AS INDICATED BY THE WIDE RANGE INSTRUMENTS DUE TO THE REACTOR PRESSURE SPIKE. THE HIGH PRESSURE CORE SPRAY (HPCS) AND REACTOR CORE ISOLATION COOLING (RCIC) SYSTEMS INJECTED AS A RESULT OF A SPURIOUS LOW REACTOR WATER LEVEL 2 SIGNAL CAUSED BY A HYDRAULIC PERTURBATION IN THE REACTOR WATER LEVEL INSTRUMENT REFERENCE LINES. AS A RESULT OF THE FEEDWATER FLOW CONTINUING. (DUE TO THE "A" FEEDWATER CONTROL VALVE BEING IN THE MANUAL MODE AT 50% OPEN) IN CONJUNCTION WITH THE HPCS AND RCIC INJECTIONS, REACTOR WATER LEVEL RAPIDLY INCREASED TO LEVEL 8 CAUSING THE HPCS INJECTION VALVE AND THE RCIC STEAM SUPPLY VALVE TO CLOSE AND THE REACTOR FEEDWATER PUMPS TO TRIP PER DESIGN. THERE WAS NO SIGNIFICANT ADVERSE IMPACT ON THE SAFE OPERATION OF THE PLANT.

FORM 174 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
458	1990	026	0	9009190263	219518	08/10/90

DOCKET:458 RIVERBEND 1 TYPE:BWR
REGION: 4 NSSS:GE
ARCHITECTURAL ENGINEER: SWXX
FACILITY OPERATOR: GULF STATES UTILITIES
SYMBOL: GSU

WATCH-LIST CODES FOR THIS LER ARE:
31 ACCIDENTAL ACTION
38 POOR ERGONOMICS OR HUMAN ENVIRONMENT

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

REFERENCE LERS:
1 458/85-019 2 458/85-020 3 458/85-022 4 458/85-023
5 458/86-010

ABSTRACT
POWER LEVEL - 100%. AT APPROXIMATELY 0202 ON 08/10/90 WITH THE UNIT AT FULL POWER IN OPERATIONAL CONDITION 1, THE REACTOR WATER CLEANUP SYSTEM (RWCU) ISOLATED. MAINTENANCE WAS INSTALLING JUMPERS TO ALLOW REPLACEMENT OF A FAULTY OPTICAL ISOLATOR CARD WHEN A SHORT CIRCUIT OCCURRED. THIS SHORT CAUSED TWO FUSES TO BLOW, RESULTING IN A LOSS OF POWER TO SEVERAL BALANCE-OF-PLANT (BOP) OPTICAL ISOLATOR CARDS. LOSS OF THESE ISOLATOR CARDS DE-ENERGIZED NORMALLY ENERGIZED RELAYS FOR THE HVAC - COOLING WATER SYSTEM (HVN). THIS CAUSED AN ISOLATION OF THE COOLING WATER TO THE CONTAINMENT UNIT COOLERS. WITH COOLING WATER ISOLATED, AREAS IN THE CONTAINMENT SERVED BY THESE UNITS BEGAN TO HEAT UP. WHEN THE RWCU HEAT EXCHANGER ROOM AMBIENT TEMPERATURE REACHED THE ISOLATION SETPOINT, AN ISOLATION OF THE SYSTEM OCCURRED. THEREFORE THIS EVENT IS REPORTABLE PURSUANT TO 10CFR50.73(A)(2)(IV) AS ESF ACTUATION. A SHORT CIRCUIT DURING JUMPER MANIPULATION RESULTED IN THE RWCU ISOLATION. INSTALLATION OF JUMPERS ON THE OPTICAL ISOLATOR CARDS IS COMPLICATED BY THE RELATIVE LOCATIONS OF THE POSITIVE AND NEGATIVE TERMINALS, WHICH APPROXIMATELY 1/4" APART WITH NO BARRIERS BETWEEN. AS CORRECTIVE ACTION, THIS REPORT WILL BE REQUIRED READING FOR APPLICABLE MAINTENANCE PERSONNEL BY 10/31/90. SINCE ALL PLANT SYSTEMS PERFORMED AS DESIGNED, THIS EVENT DID NOT ADVERSELY AFFECT THE HEALTH AND SAFETY OF THE PUBLIC.

FORM 175 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
483	1986	010	1	8610280571	201560	04/16/86

DOCKET:483 CALLAWAY 1 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: UNION ELECTRIC CO.
SYMBOL: UEC

COMMENTS
STEP 1: CAUSE AX-FOR CORE TESTING. STEP 6: COMP XFMR-FERRO- RESONANT OUTPUT TRANSFORMER.

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

ABSTRACT
POWER LEVEL - 000%. ON 4/16/86 AT 1424 CST, A REACTOR TRIP AND A FEEDWATER ISOLATION (FWIS) OCCURRED AS A RESULT OF A POWER RANGE HIGH SETPOINT HIGH FLUX (PRHSHF) SIGNAL. AT THE TIME OF THE TRIP THE REACTOR WAS IN MODE 2, STARTUP, AT 0% OF RATED THERMAL POWER AND NORMAL OPERATING TEMPERATURE AND PRESSURE. THE PRHSHF TRIP OCCURRED DUE TO LOSS OF 120 VAC POWER SUPPLYING POWER RANGE NUCLEAR INSTRUMENTATION (PRNI) CHANNEL 41. LOSS OF 120 VAC POWER TO PRNI CHANNEL 41 WAS CAUSED BY FAILURE OF THE NN-11 INVERTER TRANSFORMER THAT SUPPLIES POWER TO BUS NN-01. PREVIOUS TO THE TRIP, PRNI CHANNEL 44 WAS PLACED OUT OF SERVICE (IN TRIPPED CONDITION) TO FACILITATE CORE PHYSICS TESTING. SINCE PRNI CHANNEL 44 WAS ALREADY IN THE TRIPPED CONDITION, FAILURE OF THE POWER SUPPLY TO PRNI CHANNEL 41 SATISFIED THE 2 OF 4 LOGIC NECESSARY TO INITIATE THE REACTOR TRIP. THE OTHER FOUR INVERTER TRANSFORMERS AS WELL AS THE REPLACEMENT TRANSFORMER WERE TESTED, PER WESTINGHOUSE TECHNICAL BULLETIN 84-11 AS A PRECAUTIONARY MEASURE, WITH SATISFACTORY RESULTS. BASED UPON A GENERAL ELECTRIC FAULT ANALYSIS OF THE DEFECTIVE TRANSFORMER, WESTINGHOUSE CONCLUDED IT FAILED WHEN THE MAIN AND REACTOR TRANSFORMERS SHORTED TO GROUND. THE CAUSE OF THE FAILURE COULD NOT BE DETERMINED. THE FAILURE IS CONSIDERED AN ISOLATED EVENT. ALL ENGINEERED SAFETY FEATURES ACTUATED AS DESIGNED. AT NO TIME DID THIS EVENT ENDANGER THE PUBLIC HEALTH OR SAFETY.

FORM 176 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
483	1990	005	0	9006010187	218374	05/01/90

DOCKET:483 CALLAWAY 1 TYPE:PWR
REGION: 3 NSSS:WE
ARCHITECTURAL ENGINEER: BECH
FACILITY OPERATOR: UNION ELECTRIC CO.
SYMBOL: UEC

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%. ON 5/1/90 AT 1331 CDT, A REACTOR TRIP, AND AUXILIARY FEEDWATER ACTUATION, AND A FEEDWATER ISOLATION OCCURRED DUE TO A TURBINE TRIP ON A LOSS OF MAIN GENERATOR STATOR COOLING WATER (SCW) INSTRUMENTATION. THE PLANT WAS IN MODE 1 - POWER OPERATIONS, 100 PERCENT REACTOR POWER, AT NORMAL OPERATING PRESSURE AND TEMPERATURE. THE SCW LOW FLOW TURBINE TRIP SIGNAL AND SUBSEQUENT REACTOR TRIP SIGNAL WERE RECEIVED DURING THE CALIBRATION OF THE SCW INLET CONDUCTIVITY METER. DURING RESTORATION OF POWER TO THE CONDUCTIVITY METER, A CONDUCTIVE FOREIGN PARTICLE CREATED A DEAD SHORT ACROSS THE POWER SUPPLY LEADS OF THE METER ASSEMBLY. THE SUBSEQUENT TRANSIENT CAUSED THE FAILURE OF A 10 AMP FUSE RESULTING IN A LOSS OF MAIN GENERATOR SCW INSTRUMENTATION POWER. THE LOSS OF INSTRUMENTATION POWER INITIATED A TURBINE RUNBACK AT 1328. WITH THE "LOSS OF SCW FLOW" SIGNAL STILL PRESENT, THE MAIN GENERATOR PROTECTION CIRCUITRY INITIATED A TURBINE TRIP AT 1331. SEVERAL GENERATOR PROTECTION SCW RUNBACK MODIFICATIONS ARE BEING IMPLEMENTED TO ALLEVIATE FALSE ACTIVATIONS AND ENHANCE THE RELIABILITY OF THE SYSTEM.

FORM 177 LER SCSS DATA 08-30-91

DOCKET	YEAR	LER NUMBER	REVISION	DCS NUMBER	NSIC	EVENT DATE
529	1986	023	1	8703160089	203416	12/24/86

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

COMMENTS
STEP 2: COMP MEI - INDICATION BULB. STEP 17: MODEL #SW12-75.

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

ABSTRACT
POWER LEVEL - 100%. AT ABOUT 2010 MST ON 12-24-86, UNIT 2 WAS IN MODE 1 (POWER OPERATION) AT 100% POWER WHEN THE AUTOMATIC ACTUATION OF THE PLANT PROTECTION SYSTEM (PPS)(JC) INITIATED A REACTOR (RCT) TRIP. THE REACTOR TRIP WAS ANNUNCIATED (ANN) AND RESPONDED TO BY UTILITY-LICENSED OPERATORS IN THE CONTROL ROOM (CR). ALL SAFETY SYSTEMS AND COMPONENTS OPERATED AS DESIGNED. THE CAUSE OF THE EVENT WAS DETERMINED TO BE AN INTERMITTENT GROUND ON THE 125 VOLT DC BUS (M42) CAUSING A DESIGNED "0" OUTPUT VOLTAGE RESPONSE FROM THE INVERTER, CONCURRENT WITH AN "OUT-OF-SYNC" CONDITION BETWEEN THE INVERTER AND VOLTAGE REGULATOR (ALTERNATE POWER). THIS PROHIBITED A TRANSFER OF THE 120 VOLT AC BUS (D26) TO THE VOLTAGE REGULATOR RESULTING IN A LOSS OF POWER TO D26. THE LOSS OF POWER TO D-26 RESULTED IN THE LOSS OF PPS CHANNEL "B". THIS LOSS COMBINED WITH A DEGRADED VOLTAGE CONDITION ON A PPS CHANNEL "A" POWER SUPPLY, RESULTED IN THE REACTOR TRIP. AS CORRECTIVE ACTION, THE GROUND WAS REMOVED AND THE POWER SUPPLY WAS REPLACED. FURTHER EVALUATIONS ARE CURRENTLY IN PROGRESS TO DETERMINE THE ROOT CAUSE OF THE DEGRADED VOLTAGE CONDITION EXPERIENCED BY THE PPS POWER SUPPLY.
*

THIS SESSION HAS USED 8.83 SECONDS OF CPU TIME AND
HAS BEEN ACTIVE FOR 109.95 SECONDS

THE ESTIMATED COST OF THE RUN IS $ 2.68