
Licensee Event Report (LER) Compilation

For month of July 1988

Oak Ridge National Laboratory

Prepared for
U.S. Nuclear Regulatory
Commission

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Abstract

This monthly report contains Licensee Event Report (LER) operational information that was processed into the LER data file of the Nuclear Safety Information Center (NSIC) during the one month period identified on the cover of the document. The LERs, from which this information is derived, are submitted to the Nuclear Regulatory Commission (NRC) by nuclear power plant licensees in accordance with federal regulations. Procedures for LER reporting for revisions to those events occurring prior to 1984 are described in NRC Regulatory Guide 1.16 and NUREG-1061, Instructions for Preparation of Data Entry Sheets for Licensee Event Reports. For those events occurring on and after January 1, 1984, LERs are being submitted in accordance with the revised rule contained in Title 10 Part 50.73 of the Code of Federal Regulations (10 CFR 50.73 - Licensee Event Report System) which was published in the Federal Register (Vol. 48, No. 144) on July 26, 1983. NUREG-1022, Licensee Event Report System - Description of Systems and Guidelines for Reporting, provides supporting guidance and information on the revised LER rule.

The LER summaries in this report are arranged alphabetically by facility name and then chronologically by event date for each facility. Component, system, keyword, and component vendor indexes follow the summaries. Vendors are those identified by the utility when the LER form is initiated; the keywords for the component, system, and general keyword indexes are assigned by the computer using correlation tables from the Sequence Coding and Search System. Questions concerning this report or its contents should be directed to

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TREATMENT SYSTEM. WHEN MAINTENANCE WAS PERFORMED, IT WAS DETERMINED THAT THE ARTIFICIAL (ELECTRONIC BACKGROUND SOURCE HAD FAILED. FURTHER INVESTIGATION REVEALED THAT THE ROOT CAUSE FOR THE ARTIFICIAL BACKGROUND SOURCE TO FAIL WAS FAILURE OF AN INVERTER CHIP. IMMEDIATE CORRECTIVE ACTIONS WERE TO DETERMINE THE SOURCE OF THE INITIATION SIGNAL AND VERIFY AUTOMATIC FUNCTIONS. MAINTENANCE WAS THEN PERFORMED ON THE RADIATION MONITOR AND IT WAS RETURNED TO SERVICE ON 4-26-88 FOLLOWING SATISFACTORY COMPLETION OF THE APPLICABLE TEST PROCEDURE. DUE TO THE CONSERVATIVE NATURE OF THIS EVENT THERE WAS NO EFFECT ON THE SAFE OPERATION OF THE PLANT.

[4] BEAVER VALLEY 1 DOCKET 50-334 LER 88-005
CONTAINMENT ISOLATION VALVES OMISSION FROM SURVEILLANCE TESTING.
EVENT DATE: 040588 REPORT DATE: 050588 NSSS: WE TYPE: PWR
VENDOR: MASONIELAN INTERNATIONAL, INC.

(NSIC 209272) ON 4/5/88, A REVISION OF THE TRAIN B CONTAINMENT ISOLATION VALVE TRIP TEST WAS BEING PREPARED IN ORDER TO CORRECT TYPOGRAPHICAL ERRORS. DURING THE PRE-REVISION REVIEW, IT WAS DISCOVERED THAT THERE WERE THREE FIRE PROTECTION VALVES WHICH RECEIVED A TRAIN B CONTAINMENT ISOLATION PHASE A (CIA) SIGNAL TO CLOSE WHICH WERE NOT INCLUDED IN THIS TEST. A PROCEDURE REVISION WAS IMMEDIATELY INITIATED TO INCLUDE THESE VALVES IN THIS TEST. A SPECIAL PROCEDURE WAS INITIATED TO VERIFY THESE VALVES WILL STROKE CLOSED UPON RECEIVING A CIA SIGNAL. ADDITIONAL REVIEW VERIFIED THAT ALL OTHER CIA VALVES WERE FULLY TESTED. THE THREE VALVES WERE VERIFIED TO BE IN THE QUARTERLY STROKE TEST VERIFYING MANUAL OPERABILITY AND ABILITY TO STROKE. INVESTIGATION DETERMINED THAT VALVES WERE, WHEN INSTALLED IN 1982, CORRECTLY ADDED TO THE TECHNICAL SPECIFICATIONS REQUIRING TESTING. THE VALVES WERE NOT ADDED TO THE TESTING PROGRAM DUE TO PERSONNEL ERROR BY THE INVOLVED PROCEDURE ENGINEER. SINCE 1982, BEAVER VALLEY HAS INITIATED A FORMAL, STRUCTURED, PRE-DESIGN CHANGE PROCEDURE REVIEW TO INSURE THAT ALL PROCEDURE CHANGES REQUIRED BY A DESIGN CHANGE ARE PERFORMED. THERE WERE MINIMAL SAFETY IMPLICATIONS DUE TO THIS EVENT AS THE VALVES WERE TESTED TO VERIFY MANUAL OPERABILITY THROUGHOUT THIS EVENT AND WERE NORMALLY MAINTAINED IN A CLOSED/FAIL-SAFE POSITION.

[5] BRAIDWOOD 1 DOCKET 50-456 LER 87-048 REV 02
UPDATE ON LOSS OF OFFSITE POWER DUE TO INADVERTENT DELUGE SYSTEM ACTUATION
RESULTING FROM A MISPOSITIONED VALVE.
EVENT DATE: 091187 REPORT DATE: 051688 NSSS: WE TYPE: PWR

(NSIC 209450) AT 1425 ON SEPTEMBER 11, 1987, DURING THE PERFORMANCE OF A DELUGE SYSTEM SURVEILLANCE, BOTH SYSTEM AUXILIARY TRANSFORMERS TRIPPED. THE DELUGE SYSTEM ACTUATED AS A RESULT OF A MISPOSITION AUXILIARY DRAIN VALVE. THIS RESULTED IN A LOSS OF OFFSITE POWER. INVESTIGATION AS TO THE SOURCE OF THE MISPOSITIONED VALVE REVEALED NO SPECIFIC REASON FOR THE VALVE MANIPULATION OR DOCUMENTATION OTHER THAN A PREVIOUS UNRELATED SURVEILLANCE. THE UNIT NORMAL AC POWER LINEUP WAS RESTORED AT 1518 ON SEPTEMBER 11, 1987. ALL ENGINEERED SAFETY FEATURE SYSTEMS OPERATED AS DESIGNED. TO PREVENT RECURRENCE, THE PROCEDURE FOR THE SURVEILLANCE HAS BEEN CHANGED TO ENSURE THE AUXILIARY DRAIN VALVE IS IN ITS CORRECT POSITION PRIOR TO OPENING THE MAIN DRAIN VALVE. ALSO, THE TRANSFORMER TRIP ASSOCIATED WITH THE DELUGE HAS BEEN REMOVED. THE COMMON DRAIN LINE HAS BEEN EVALUATED FOR SYSTEM INTERACTION. ADDITIONALLY, IT WAS DISCOVERED THAT IT IS POSSIBLE TO INADVERTENTLY ACTUATE THE DELUGE SYSTEM AT THE LOCAL ELECTRICAL SWITCH. A MECHANICAL GUARD IS BEING ADDED TO PREVENT THIS FROM OCCURRING. THERE HAVE BEEN NO PREVIOUS OCCURRENCES.

[6] BRAIDWOOD 1 DOCKET 50-456 LER 88-009
 LOSS OF OB CONTROL ROOM CHILLER DUE TO DETERMINATION OF TEMPERATURE CONTROLLER.
 EVENT DATE: 040788 REPORT DATE: 042688 NSSS: WE TYPE: PWR

(NSIC 209299) A REQUEST WAS MADE TO DETERMINATE THE TEMPERATURE ELEMENT (TE) ON CONTAINMENT CHILLER IT2-W0082 TO FACILITATE REPLACEMENT. A WORK TRAVELER WAS PREPARED AND ISSUED BY PROJECT CONSTRUCTION DEPARTMENT (PCD). THE TRAVELER HAD 3 ERRORS, WHICH INCLUDED THE WRONG EQUIPMENT NUMBER, WRONG PRINTS AND WRONG PIECE NUMBER BEING REFERENCED. ON MARCH 16, 1988, USING THE WORK TRAVELER THE CONTROL ROOM CHILLER TEMPERATURE CONTROLLER WAS INCORRECTLY DETERMINATED. ON APRIL 7, 1988, DURING ROUTINE MAINTENANCE OF THE CONTROL ROOM CHILLER THIS ERROR WAS DISCOVERED. THE CONTROL ROOM CHILLER WAS RE-TERMINATED AND DECLARED OPERABLE. THE ROOT CAUSE IS ATTRIBUTED TO A PLANNING ERROR BY CONTRACTOR MANAGEMENT IN THAT THE SUBJECT WORK TRAVELER WAS IMPROPERLY PREPARED AND REVIEWED BY PCD PERSONNEL. THIS EVENT HAS BEEN REVIEWED WITH ALL AVAILABLE INDIVIDUALS INVOLVED. CONTRACTOR CORRECTIVE ACTION REQUEST 88-001 HAS BEEN WRITTEN AND IS BEING REVIEWED WITH THE CONTRACT MANAGEMENT TO PREVENT RECURRENCE. THERE HAVE BEEN NO PREVIOUS OCCURRENCES INVOLVING TRANSPOSITION OF AN EPN RESULTING IN MAINTENANCE ACTIVITY ON THE WRONG EQUIPMENT.

[7] BRAIDWOOD 1 DOCKET 50-456 LER 88-010
 CONTROL ROOM VENTILATION TO MAKEUP MODE OF OPERATION FROM A HIGH RADIATION ALARM DUE TO INCORRECT SETPOINT.
 EVENT DATE: 041088 REPORT DATE: 042888 NSSS: WE TYPE: PWR

(NSIC 209346) AT 0103 ON APRIL 10, 1988, THE CONTROL ROOM VENTILATION SYSTEM AUTOMATICALLY SHIFTED TO THE EMERGENCY MAKEUP MODE OF OPERATION. THIS WAS IN RESPONSE TO A HIGH RADIATION SETPOINT BEING EXCEEDED ON THE CONTROL ROOM OUTSIDE AIR INTAKE PARTICULATE CHANNEL ORE-PRO33A. SAMPLES BY RADIATION CHEMISTRY DEPARTMENT VERIFIED THAT THERE WERE NO ABNORMAL LEVELS OF RADIOACTIVITY PRESENT. IT WAS DISCOVERED THAT THE INCORRECT SETPOINT HAD BEEN ENTERED FOR THE MONITOR. THIS WAS DUE TO A MANAGEMENT DEFICIENCY IN THAT PERMANENT CHANGES TO THE INSTRUMENT DATA SHEETS WERE NOT PROPERLY IMPLEMENTED IN ACCORDANCE WITH THE PROCEDURE WHEN THE SETPOINT WAS MODIFIED BY A CHANGE TO THE FINAL SAFETY ANALYSIS REPORT. THE PROPER SETPOINT WAS ENTERED, OPERATION OF THE MONITOR RETURNED TO NORMAL AND THE CONTROL ROOM VENTILATION SYSTEM LINEUP WAS RETURNED TO NORMAL. RADIATION MONITOR SETPOINTS HAVE BEEN REVIEWED AND VERIFIED TO BE CORRECT ON ALL CONTROL ROOM VENTILATION MONITORS AND THE SETPOINT DATA SHEET DOCUMENTATION HAS BEEN REVIEWED AND CORRECTED. DUAL VERIFICATION IS NOW REQUIRED ON THE DATA SHEETS AND THE INSTRUMENT PROCEDURE WILL BE REVISED TO REQUIRE TECHNICAL STAFF NOTIFICATION WHEN A DISCREPANCY BETWEEN THE AS FOUND AND THE DATA SHEET IS IDENTIFIED. NO PREVIOUS OCCURRENCES.

[8] BRAIDWOOD 1 DOCKET 50-456 LER 88-011
 CONTROL ROOM VENTILATION SHIFT TO EMERGENCY MAKEUP MODE DUE TO SPURIOUS RADIATION MONITOR NOISE SPIKE.
 EVENT DATE: 041588 REPORT DATE: 051188 NSSS: WE TYPE: PWR

(NSIC 209364) AT 0132 ON APRIL 15, 1988, AT 0414 ON MAY 3, 1988, AND AGAIN AT 0720 ON MAY 6, 1988, HIGH RADIATION SIGNALS WERE PROCESSED BY THE CONTROL ROOM TRAIN B RADIATION MONITOR. THIS CAUSED THE CONTROL ROOM VENTILATION SYSTEM (VC) TO SHIFT TO THE EMERGENCY MAKEUP MODE OF OPERATION. THE SIGNAL WAS DETERMINED TO BE SPURIOUS AS VERIFIED BY SAMPLES TAKEN BY THE RADIATION CHEMISTRY DEPARTMENT. IMMEDIATE CORRECTIVE ACTION WAS TO RESET THE MONITOR AND RETURN VC TO NORMAL. ELECTROCUBES WERE INSTALLED IN THE MONITOR'S CIRCUITRY TO SUPPRESS VOLTAGE SPIKES, FOLLOWING THE APRIL 15, 1988 OCCURRENCE. SUBSEQUENT SPIKING IDENTIFIED THE NEED FOR ADDITIONAL INVESTIGATION TO DETERMINE THE ROOT CAUSE. THE RESULTS OF THIS INVESTIGATION WILL BE DOCUMENTED IN A SUPPLEMENT TO THIS REPORT. THERE

(NSIC 209287) ON 4/7/88, AT APPROX. 1149 HOURS, A PERFORMANCE SPECIALIST INADVERTENTLY PLACED THE SOLID STATE PROTECTION SYSTEM (SSPS) TRAIN A IN TEST WHILE THE AUXILIARY BUILDING VENTILATION (VA) FILTERED EXHAUST SYSTEM TRAIN B WAS INOPERABLE FOR PREVENTIVE MAINTENANCE. THIS RENDERED BOTH TRAINS OF VA FILTERED EXHAUST INOPERABLE, PLACING THE UNIT IN TECHNICAL SPECIFICATION 3.0.3. THE SSPS WAS RETURNED TO NORMAL BY INSTRUMENTATION AND ELECTRICAL (IAE) TECHNICIANS BEFORE ANY ACTION WAS REQUIRED TO SHUTDOWN THE UNIT. THE UNIT WAS IN MODE 1, POWER OPERATION, AT 100% POWER DURING THIS INCIDENT. THIS INCIDENT HAS BEEN ATTRIBUTED TO A PERSONNEL ERROR. THE SPECIALIST HAD ASKED A PERFORMANCE STAFF ENGINEER IN CHARGE OF THE PERIODIC TEST HOW THE VALVES BEING TESTED WERE TO BE STROKE TIMED. THE ENGINEER ANSWERED THAT A SWITCH IN THE CABINET WOULD BE PLACED IN TEST, INITIATING THE RESPONSE TIME TESTING PROGRAM. THE SPECIALIST ASSUMED THIS WAS AN AUTHORIZATION TO PROCEED WITH THE TEST (WHICH WAS ON HOLD AT THE TIME). THE TEST PROCEDURE CORRECTLY IDENTIFIED THE SWITCH IN THE AUXILIARY SAFEGUARD, TEST CABINET TO BE PLACED IN THE TEST POSITION. HOWEVER, THE SPECIALIST PLACED THE OUTPUT RELAY TEST SWITCH IN THE SSPS TRAIN A CABINET IN TEST BY MISTAKE. THIS INCIDENT HAS BEEN REVIEWED WITH THE PERFORMANCE SPECIALIST WITH EMPHASIS ON PROPER USE OF PROCEDURES.

[15] CLINTON 1 DOCKET 50-461 LER 88-008
 VALVE SEATING SURFACE WEAR RESULTS IN UNACCEPTABLE MAIN STEAM ISOLATION VALVE LEAKAGE RATES.
 EVENT DATE: 032088 REPORT DATE: 040888 NSSS: GE TYPE: BWR
 VENDOR: ATWOOD & MORRILL CO., INC.

(NSIC 208953) ON MARCH 20, 1988, AT 2030 HOURS, WITH THE PLANT IN MODE 4 (COLD SHUTDOWN) AND THE REACTOR AT APPROXIMATELY 150 DEGREES FAHRENHEIT AND ATMOSPHERIC PRESSURE, LOCAL LEAK RATE TESTING BY TEST ENGINEERS IDENTIFIED THAT THE PRIMARY CONTAINMENT LEAKAGE RATES OF THE MAIN STEAM ISOLATION VALVES (MSIVS) ON LINE D EXCEEDED TECHNICAL SPECIFICATION LIMITS OF 13,214 STANDARD CUBIC CENTIMETERS PER MINUTE (SCCM) (28 STANDARD CUBIC FEET PER HOUR) PER LINE. THE CAUSE OF THE EXCESSIVE LEAKAGE HAS BEEN ATTRIBUTED TO COMPONENT WEAR BASED ON SERVICE SEEN DURING THE POWER ASCENSION PROGRAM AND INITIAL PLANT OPERATION. THIS WEAR RESULTED IN ANOMALIES IN THE SEATING SURFACES OF THE INBOARD AND OUTBOARD MSIVS. THE TWO MSIVS HAVE BEEN REWORKED BY LAPPING THE SEATS AND MACHINING THE POPPETS. SUBSEQUENT LEAK RATE TESTING WAS SATISFACTORILY COMPLETE. THE APPROXIMATE LEAKAGE RATE FOR MAIN STEAM LINE D FOLLOWING REWORK WAS 340 SC.C.M. ILLINOIS POWER WILL CONTINUE THE INVESTIGATION OF THE MSIV LEAKAGE PROBLEM TO REDUCE RECURRENCE. THIS INVESTIGATION WILL INCLUDE REVIEW OF INDUSTRY EXPERIENCE WITH THESE VALVES AND REVIEW OF VENDOR RECOMMENDATIONS PROVIDED FOR SIMILAR VALVES.

[16] CLINTON 1 DOCKET 50-461 LER 88-013
 FAULTY CARD SELECT DECODER CAUSES SPURIOUS LOW REACTOR WATER LEVEL TRIP OF INSTRUMENT AIR ISOLATION VALVES DURING DRYWELL PRESSURE CHANNEL CALIBRATION.
 EVENT DATE: 043088 REPORT DATE: 051888 NSSS: GE TYPE: BWR
 VENDOR: GENERAL ELECTRIC CO.

(NSIC 209442) ON APRIL 30, 1988 WITH THE PLANT IN MODE 4 (COLD SHUTDOWN) TWO INSTRUMENT AIR SYSTEM CONTAINMENT ISOLATION VALVES AUTOMATICALLY ISOLATED AS A RESULT OF A SPURIOUS DIVISION I LOW REACTOR WATER LEVEL (LEVEL 1) TRIP SIGNAL. THIS ISOLATION OCCURRED WHILE TECHNICIANS WERE PERFORMING A CHANNEL CALIBRATION SURVEILLANCE ON A DIVISION I DRYWELL PRESSURE CHANNEL. IMMEDIATELY AFTER THE ISOLATION OCCURRED, CONTROL ROOM OPERATORS DIRECTED THE TECHNICIANS TO STOP THE SURVEILLANCE AND TO RETURN THE CHANNEL TO ITS NORMAL CONFIGURATION. THE TRIP SIGNAL WAS RESET, THE VALVES WERE REOPENED, AND AN INVESTIGATION WAS BEGUN TO DETERMINE THE CAUSE OF THE ISOLATION. DURING THE CALIBRATION, TECHNICIANS NOTICED THAT A TRIP INDICATOR LIGHT ON AN ADJACENT ANALOG TRIP MODULE (ATM) FOR DIVISION I LOW REACTOR WATER LEVEL WAS FLICKERING DIMLY. THIS REACTOR WATER LEVEL ALARM IS ADJACENT TO THE DRYWELL PRESSURE ATM. THE INVESTIGATION DETERMINED

THAT A FAULTY CARD SELECT DECODER CAUSED AN INTERACTION BETWEEN THESE TWO ATMS THAT RESULTED IN A SPURIOUS TRIP OF THE DIVISION 1 REACTOR WATER LEVEL ATM. THE FAULTY CARD SELECT DECODER WAS REPLACED AND THE ATMS WERE SATISFACTORILY TESTED. THIS FAULTY CARD SELECT DECODER WILL BE RETURNED TO ITS VENDOR FOR DIAGNOSTIC TESTING TO DETERMINE THE EXACT CAUSE OF ITS FAILURE.

[17] CLINTON 1 DOCKET 50-461 LER 88-014
 INOPERABLE AIRLOCK DOOR SYSTEM DUE TO INADEQUATE ASSESSMENT OF THE IMPACT OF AN AIRLOCK REPAIR DURING POST MAINTENANCE TESTING EVALUATION.
 EVENT DATE: 050288 REPORT DATE: 052588 NSSS: GE TYPE: BWR
 VENDOR: CHICAGO BRIDGE AND IRON COMPANY

(NSIC 209443) ON MAY 2, 1988, WITH THE PLANT IN MODE 2 (STARTUP), A CONTAINMENT PERSONNEL AIRLOCK DOOR SYSTEM WAS DETERMINED TO BE INOPERABLE BECAUSE OF INSUFFICIENT POST MAINTENANCE TESTING (PMT) TO VERIFY THE OPERABILITY OF THE AIRLOCK DOOR SYSTEM FOLLOWING REPAIR TO ITS OUTER DOOR EQUALIZING VALVE. THE AIRLOCK SHOULD HAVE BEEN LEAK TESTED, HOWEVER, ONLY THE AIRLOCK INTERLOCK OPERATION WAS CHECKED. FOLLOWING IDENTIFICATION OF THE INSUFFICIENT PMT, THE AIRLOCK WAS LEAK TESTED THREE TIMES. THE FIRST TWO TESTS IDENTIFIED LEAKS WHICH WERE SUBSEQUENTLY REPAIRED AND THE THIRD TEST IDENTIFIED NO UNACCEPTABLE LEAKS. THIS EVENT WAS CAUSED BY A PERSONNEL ERROR WHICH RESULTED FROM AN INADEQUATE ASSESSMENT OF THE IMPACT OF THE AIRLOCK REPAIR ON THE REQUIRED AIRLOCK SURVEILLANCE TESTS. THE INADEQUATE ASSESSMENT OCCURRED BECAUSE THE SHIFT SUPERVISOR DID NOT KNOW THE EQUALIZING VALVE REPAIR REQUIRED A LEAK TEST. CORRECTIVE ACTIONS INCLUDE COUNSELLING OF THE PERSONNEL RESPONSIBLE FOR THE INADEQUATE EVALUATION AND PERFORMANCE OF AN EVALUATION OF AIRLOCK RELIABILITY.

[18] CONNECTICUT YANKEE DOCKET 50-213 LER 88-012
 REACTOR TRIP DUE TO IMPROPER INSTALLATION OF TURBINE STOP VALVE CAM SWITCHES.
 EVENT DATE: 043088 REPORT DATE: 052788 NSSS: WE TYPE: PWR

(NSIC 209369) AT APPROXIMATELY 1130 ON APRIL 30, 1988, WITH THE PLANT AT 60% POWER, AN AUTOMATIC REACTOR TRIP OCCURRED WHILE RETURNING AN IDLED REACTOR COOLANT SYSTEM LOOP TO SERVICE. THE MOST PROBABLE CAUSE OF THE TRIP WAS DETERMINED TO BE A FALSE TRIP SIGNAL INDICATING THAT BOTH TURBINE STOP VALVES HAD CLOSED. THE CAUSE OF THE SIGNAL WAS DUE TO IMPROPER INSTALLATION OF THE TURBINE STOP VALVE CAM SWITCHES. THE OPERATORS PERFORMED THE IMMEDIATE ACTIONS AS SPECIFIED BY THE EMERGENCY OPERATING PROCEDURES AND THE PLANT RESPONDED AS EXPECTED. THE SWITCHES WERE REPAIRED AND TESTED. A MAINTENANCE PROCEDURE WILL BE DEVELOPED TO ENSURE PROPER INSTALLATION AND TESTING OF THE TURBINE STOP VALVE CAM SWITCHES. THIS EVENT IS REPORTABLE UNDER 10CFR50.73(A)(2)(IV) SINCE IT INVOLVED AUTOMATIC ACTUATION OF THE REACTOR PROTECTION SYSTEM.

[19] COOK 2 DOCKET 50-316 LER 88-004
 MAIN STEAM SAFETY VALVES OUT OF SPECIFICATION DUE TO APPARENT SETPOINT DRIFT.
 EVENT DATE: 042088 REPORT DATE: 051288 NSSS: WE TYPE: PWR
 VENDOR: DRESSER INDUSTRIAL VALVE & INST DIV

(NSIC 209323) BETWEEN APRIL 19 AT 1610 HOURS AND APRIL 20 AT 1811 HOURS, 1988, WITH THE UNIT 2 REACTOR IN MODE 1 (POWER OPERATION) AT 77 PERCENT THERMAL POWER, SIX OF THE TWENTY MAIN STEAM SAFETY VALVES (MSSV) LIFT SETPOINTS WERE FOUND TO BE OUT OF SPECIFICATION DURING SURVEILLANCE TESTING. THE MSSV LIFT SETPOINTS RANGED FROM 16 PSI BELOW TO 6 PSI ABOVE THE TECHNICAL SPECIFICATION REQUIRED RANGE. IN EACH CASE THE MSSVS' LIFT SETPOINTS WERE CORRECTED AND THE SAFETY VALVES LEFT OPERABLE PRIOR TO COMPLETION OF THE SURVEILLANCE TEST PROCEDURE (STP). THE APPARENT MSSV SET POINT DRIFT COULD HAVE BEEN ATTRIBUTABLE TO TWO FACTORS, 1) TESTING METHOD, AND; 2) SET POINT DRIFT DUE TO VALVE DESIGN/ APPLICATION. THE INVESTIGATION CONCLUDED THAT THE OLD TESTING METHOD HAD A HIGH PROBABILITY OF

CONTRIBUTING TO THE APPARENT MSSV SET POINT DRIFT. THE IMMEDIATE CORRECTIVE ACTION, AS REQUIRED BY THE SURVEILLANCE TEST PROCEDURE, WAS TO RESET THE SAFETY VALVES SETPOINTS TO WITHIN THEIR SPECIFIED RANGES UTILIZING AN IMPROVED TESTING METHOD. TO PREVENT RECURRANCE, FUTURE MSSV SETPOINTS WILL BE TESTED WITH THE IMPROVED TESTING METHOD. THIS WILL MORE ACCURATELY REFLECT THE MSSV SETPOINTS.

[20] COOK DOCKET 50-316 LER 88-005
ICE BUILDUP IN ICE CONDENSER FLOW PASSAGES DUE TO SUBLIMATION.
EVENT DATE: 041688 REPORT DATE: 051988 NSSS: WE TYPE: PWR

(NSIC 209359) ON APRIL 26, 1988, WITH UNIT 2 IN MODE 5 (COLD SHUTDOWN), FLOW PASSAGE INSPECTIONS OF THE ICE CONDENSER REVEALED FROST AND ICE BUILDUP ON THE LATTICE FRAMES OF GREATER THAN 3/8 INCH IN A TOTAL OF FOUR FLOW PASSAGES IN ONE OF THE TWENTY-FOUR ICE CONDENSER BAYS. TECH SPEC 4.6.5.1.B.3 LIMITS FROST OR ICE BUILDUP IN FLOW PASSAGES TO A NOMINAL THICKNESS OF 3/8 INCH. ACCORDING TO THIS TECH SPEC, BUILDUP EXCEEDING THIS LIMIT IN TWO OR MORE FLOW PASSAGES PER BAY IS EVIDENCE OF ABNORMAL DEGRADATION. THOUGH THE EVALUATION HAS CONCLUDED THAT THE DEGRADATION IS NOT SERIOUS, ISSUANCE OF THIS VOLUNTARY LER IS APPROPRIATE SINCE SOME DEGRADATION HAS BEEN IDENTIFIED. ACTIONS TAKEN TO CORRECT THE ABNORMAL DEGRADATION INCLUDED MANUAL CLEANING OF THE FLOW PASSAGES AND AN INITIAL INVESTIGATION OF THE EVENT. THE RESULTS OF TECH SPEC SURVEILLANCES REGARDING FROST AND ICE THAT FORMS IN THE FLOW PASSAGES IS BEING MONITORED TO ENSURE THAT ANY ADVERSE TRENDS IN THE AMOUNT OF ICE AND FROST BUILDUP BETWEEN SURVEILLANCES WILL BE IDENTIFIED. THE IMPACT OF FROST AND ICE BUILDUP IN THE FLOW PASSAGES IS ALSO BEING STUDIED IN CONJUNCTION WITH THE OTHER UTILITIES WITH ICE CONDENSER CONTAINMENTS.

[21] COOPER DOCKET 50-298 LER 88-010
FAILURE OF ONE CORE SPRAY SYSTEM SUCTION VALVE TO CLOSE DURING SURVEILLANCE TESTING DUE TO INCORRECTLY INSTALLED MOTOR OPERATOR PINION GEAR.
EVENT DATE: 102385 REPORT DATE: 051188 NSSS: GE TYPE: BWR
VENDOR: LIMITORQUE CORP.

(NSIC 209317) ON OCTOBER 23, 1985, DURING PERFORMANCE OF SURVEILLANCE PROCEDURE 6.3.4.2, CORE SPRAY MOTOR OPERATED VALVE OPERABILITY TEST, CORE SPRAY SUCTION VALVE CS-MOV-M07B WOULD NOT CLOSE WHEN REMOTELY ACTUATED FROM THE CONTROL ROOM. THE PROBLEM WAS IMMEDIATELY INVESTIGATED AND IT WAS DETERMINED THAT THOUGH THE MOTOR WOULD RUN, AN APPARENT GEAR TRAIN PROBLEM EXISTED SINCE VALVE POSITION DID NOT CHANGE. IT WAS FURTHER VERIFIED THAT THE VALVE COULD BE REPOSITIONED USING THE LOCAL MANUAL HANDWHEEL. AT THE TIME OF DISCOVERY OF THIS CONDITION, THE PLANT WAS SHUTDOWN. THE CAUSE OF THE OPERABILITY PROBLEM WAS DISCOVERED TO BE DUE TO INCORRECT PINION GEAR ORIENTATION IN THE MOTOR OPERATOR, AN SMB-0 OPERATOR MANUFACTURED BY LIMITORQUE CORPORATION. A NEW PINION GEAR WAS INSTALLED AND RELATED CORRECTIVE ACTIONS WERE TAKEN TO RESTORE THE OPERATOR TO A SATISFACTORY CONDITION. THE OPERATOR WAS ELECTRICALLY REITERMINATED, SUCCESSFULLY STROKE TESTED AND RETURNED TO SERVICE. SUBSEQUENTLY, AS A FOLLOWUP TO THIS EVENT AND AS ADDITIONAL CORRECTIVE ACTION IN RESPONSE TO IEIN 95-22, AN INSPECTION WAS CONDUCTED OF ALL LIMITORQUE SMB-0 THROUGH 4 OPERATORS INSTALLED IN SAFETY RELATED APPLICATIONS TO VERIFY CORRECT GEAR ORIENTATION.

[22] COOPER DOCKET 50-298 LER 87-020
APPARENT NONCOMPLIANCE WITH THE DIESEL GENERATOR SURVEILLANCE TESTING FREQUENCY REQUIREMENTS.
EVENT DATE: 082787 REPORT DATE: 092587 NSSS: GE TYPE: BWR
VENDOR: COOPER ENERGY SERVICES

(NSIC 209203) DURING A RECENT NRC INSPECTION, AN APPARENT NONCOMPLIANCE WITH THE DIESEL GENERATOR SURVEILLANCE TESTING FREQUENCY ASSOCIATED WITH THE ANNUAL

INSPECTIONS PERFORMED IN 1984 WAS IDENTIFIED. SPECIFICALLY, THE INSPECTIONS CONDUCTED IN 1984 WERE NOT ACCOMPLISHED WITHIN 15 MONTHS (ANNUAL PLUS AN ALLOWABLE EXTENSION OF 25 PERCENT) OF THEIR PERFORMANCE IN LATE MAY - EARLY JUNE 1983. IN 1984, THE PLANT WAS IN OPERATION DURING THE MAY - JUNE TIME FRAME, AND EXCEPT FOR A TWO DAY SHUTDOWN IN AUGUST, OPERATION CONTINUED UNTIL SEPTEMBER 15, THE DATE FOR THE START OF THE REFUELING/PIPE REPLACEMENT OUTAGE. THE CAUSE OF THIS APPARENT NONCOMPLIANCE WITH TECH SPEC SURVEILLANCE INTERVAL FOR THE DIESEL GENERATOR ANNUAL INSPECTIONS (PARAGRAPH 4.9.A.2.F, OF THE CNS TECH SPECS) WAS DUE TO THE UNDERSTANDING OF THE TERM "ANNUAL" WHICH EXISTED AT THAT TIME. "ANNUAL" WAS UNDERSTOOD TO MEAN ONCE PER YEAR, THEREFORE, THE REQUIRED INSPECTIONS WERE TO BE ACCOMPLISHED AT SOME TIME BETWEEN JANUARY 1 AND DECEMBER 31 OF EACH YEAR. AS A RESULT OF DISCUSSIONS CONDUCTED SUBSEQUENT TO THIS EVENT REGARDING THE DEFINITION OF SURVEILLANCE TESTING INTERVALS, PROCEDURAL CHANGES WERE MADE INCORPORATING STANDARD TECH SPEC DEFINITIONS. IN ADDITION, A CHANGE TO THE TECH SPEC WAS INITIATED TO LENGTHEN THE REQUIRED DIESEL GENERATOR INSPECTION INTERVAL TO 18 MONTHS.

[23] COOPER DOCKET 50-298 LER 88-011
 UNPLANNED ACTUATION OF AN ENGINEERED SAFETY FEATURE DURING PERFORMANCE OF
 MAINTENANCE ON THE 24V DC BATTERY SYSTEM.
 EVENT DATE: 041888 REPORT DATE: 051888 NSSS: GE TYPE: BWR

(NSIC 209398) ON 4/18/88, WITH THE PLANT IN COLD SHUTDOWN AND THE 1988 REFUELING OUTAGE IN PROGRESS, A GROUP 6 ISOLATION (CLOSURE OF SECONDARY CONTAINMENT ISOLATION VALVES AND ACTUATION OF THE STANDBY GAS TREATMENT (SGT) SYSTEM) OCCURRED WHILE PERFORMING MAINTENANCE ON THE A 24V DC BATTERY. THE ISOLATION WAS INITIATED BY ACTUATION OF TRIP RELAYS FOR ONE OF THE REACTOR BUILDING EXHAUST PLENUM RADIATION MONITORS WHEN A MOMENTARY DECREASE IN BATTERY BUS VOLTAGE OCCURRED. THE DECREASE IN BATTERY BUS VOLTAGE WAS DUE TO LOOSENING OF A BATTERY INTER-CELL CONNECTOR, BEING REMOVED FOR CLEANING. THIS EVENT OCCURRED DUE TO A MISCOMMUNICATION OF CLEARANCE ORDER REQUIREMENTS AND THE ACTUAL WORK TO BE PERFORMED ON THE 24V DC BATTERIES. PRIOR TO INITIATING WORK, A UTILITY ELECTRICIAN REVIEWED WITH THE LICENSED OPERATOR THE CLEARANCE ORDER TO BE IMPLEMENTED. SUBSEQUENTLY, THE 1A1 AND 1A2 24V CHARGER DC OUTPUT CIRCUIT BREAKERS WERE OPENED, ISOLATING THE CHARGERS FROM THE BUS. HOWEVER, THE A1 AND A2 24V DC BATTERIES REMAINED TIED TO THE BUS. THE LICENSED OPERATOR WAS NOT AWARE THAT LOSS OF THE 24V DC BATTERIES WOULD OCCUR DURING PERFORMANCE OF THE WORK. CORRECTIVE ACTION TAKEN INCLUDED RESTORATION OF THE A 24V DC BATTERY BUS TO ITS NORMAL CONFIGURATION AND RESTORATION OF NORMAL REACTOR BUILDING VENTILATION, RETURNING THE SGT SYSTEM TO STANDBY.

[24] COOPER DOCKET 50-298 LER 88-012
 UNPLANNED ACTUATION OF GROUP ISOLATION ENGINEERED SAFETY FEATURES WHILE SHUTDOWN
 DUE TO RELAY FAILURE.
 EVENT DATE: 042288 REPORT DATE: 051988 NSSS: GE TYPE: BWR
 VENDOR: GENERAL ELECTRIC CO.

(NSIC 209318) ON 4/22/88, WHILE SHUTDOWN FOR THE 1988 REFUELING OUTAGE, PARTIAL GROUP 2 AND GROUP 6 ISOLATIONS UNEXPECTEDLY OCCURRED AT 3:45 A.M. THESE PARTIAL ENGINEERED SAFETY FEATURE (ESF) ACTUATIONS WERE TRACED TO A FAILED (OPENED) COIL FOR RELAY 16A-K17, A GROUP 2 ISOLATION RELAY. DUE TO EXISTING PLANT CONDITIONS, THE EFFECTS OF THE PARTIAL GROUP 2 ISOLATION (PRIMARY CONTAINMENT ISOLATION) RESULTED IN NO IMPACT ON PLANT ACTIVITIES. HOWEVER, THE EFFECTS OF THE GROUP 6 ISOLATION (SECONDARY CONTAINMENT ISOLATION AND INITIATION OF THE STANDBY GAS TREATMENT (SGT) SYSTEM) WERE EVIDENT IN THAT NORMAL REACTOR BUILDING VENTILATION WAS AUTOMATICALLY SHUTDOWN AND ONE HALF OF THE SECONDARY CONTAINMENT ISOLATION VALVES AUTOMATICALLY CLOSED. WHEREAS, THE A SGT SYSTEM TRAIN NORMALLY WOULD HAVE STARTED DUE TO THIS FAILURE, IT HAD PREVIOUSLY BEEN REMOVED FROM SERVICE FOR OUTAGE RELATED MAINTENANCE AND, THEREFORE, WAS NOT ACTUATED. THE RELAY FAILURE

WAS CONSIDERED TO BE RANDOM IN NATURE AND NOT DUE TO ANY SPECIFIC CAUSE. THE RELAY WAS REPLACED, THE PARTIAL GROUP 2 AND 6 ISOLATIONS WERE RESET, AND NORMAL REACTOR BUILDING VENTILATION WAS RESTORED. NO ADDITIONAL CORRECTIVE ACTION WAS NECESSARY. FAILURES OF RELAYS OF THIS TYPE (CR120A RELAYS MANUFACTURED BY GENERAL ELECTRIC) HAVE OCCURRED ON A RANDOM BASIS IN THE PAST. NO UNUSUAL FAILURE TRENDS FOR RELAYS OF THIS TYPE HAVE BEEN NOTED AT COOPER.

[25] COOPER DOCKET 50-298 LER 88-013
UNPLANNED ACTUATIONS OF GROUPS 2 AND 6 ISOLATIONS DUE TO PERSONNEL ERROR AND HUMAN FACTORS DEFICIENCY.
EVENT DATE: 042688 REPORT DATE: 052688 NSSS: GE TYPE: BWR

(NSIC 209399) ON 4/2/88, TWO UNPLANNED ACTUATIONS OF GROUPS 2 AND 6 ISOLATIONS (PRIMARY CONTAINMENT ISOLATION AND SECONDARY CONTAINMENT ISOLATION, INCLUDING SGT (SGT) SYSTEM INITIATION, RESPECTIVELY) OCCURRED DURING PERFORMANCE OF REACTOR PROTECTION SYSTEM (RPS) HFA RELAY MAINTENANCE. BOTH EVENTS OCCURRED WHEN NEUTRAL LEAD CONNECTIONS FOR RELAY 5A-K3B (1 OF 8 MAIN STEAM ISOLATION VALVE (MSIV) CLOSURE SCRAM RELAYS) WERE DISCONNECTED. DUE TO THE NEUTRAL LEAD WIRING CONFIGURATION WHICH INVOLVES DAISY CHAINING OF THE NEUTRAL CONNECTIONS FROM SEVERAL RELAYS, INTERRUPTION OF THE NEUTRAL LEAD CIRCUIT WILL RESULT IN DE-ENERGIZING ONE OR MORE RELAYS. IN BOTH SITUATIONS, DRYWELL HIGH PRESSURE RELAY 5A-K4B WAS ALSO DE-ENERGIZED. THIS RESULTED IN ACTUATION OF PRIMARY CONTAINMENT ISOLATION SYSTEM (PCIS) LOGIC CHANNEL B. AT THE TIME, PCIS CHANNEL A WAS ALSO IN A TRIPPED CONDITION, AND AS A RESULT, THE GROUPS 2 AND 6 ISOLATIONS OCCURRED. THE CAUSE OF THE FIRST TRIP WAS DUE TO OVERLOOKING THE INTERACTION BETWEEN THE RPS HFA RELAYS AND PCIS. THE SECOND TRIP WAS DUE TO THE NEUTRAL LEAD BEING PULLED FREE FROM A COMPRESSION TYPE CONNECTION DURING WIRING VERIFICATION. CORRECTIVE ACTION TAKEN INCLUDED INSTALLATION OF JUMPERS TO PRESERVE THE NEUTRAL CONNECTION CIRCUIT PRIOR TO SUBSEQUENT REMOVAL OF RELAYS FOR MAINTENANCE, AND CHECKING ALL NEUTRAL BUS BAR COMPRESSION TYPE CONNECTION DURING WIRING VERIFICATION.

[26] CRYSTAL RIVER 3 DOCKET 50-302 LER 88-011
DEFECTIVE PROCEDURE LEADS TO MISINTERPRETATION OF SURVEILLANCE REQUIREMENTS AND CAUSES MISSED SURVEILLANCE.
EVENT DATE: 042288 REPORT DATE: 052388 NSSS: PW TYPE: PWR

(NSIC 209358) ON APRIL 22, 1988 CRYSTAL RIVER UNIT 3 WAS OPERATING IN MODE 1 (POWER OPERATION) AT 100% RATED THERMAL POWER, PRODUCING 892 MWE. AT 1000, DURING A NORMAL REVIEW OF SURVEILLANCE PROCEDURE DATA, IT WAS DISCOVERED THAT THE INSERVICE TESTING PROGRAM QUARTERLY VALVE STROKE TESTING WAS ONLY PARTIALLY COMPLETED IN THE FIRST QUARTER OF 1988. CRYSTAL RIVER UNIT 3 TECH SPEC 4.0.5 REQUIRES THAT AN INSERVICE TESTING PROGRAM, WHICH INCLUDES THE VALVE STROKE TESTING, BE CONDUCTED IN ACCORDANCE WITH THE ASME BOILER AND PRESSURE VESSEL CODE, SECTION XI (SECTION XI). SECTION XI REQUIRES THE QUARTERLY VALVE STROKE TESTING OF ASME CODE CLASS 1, 2 AND 3 VALVES. THIS PROCEDURE, WHICH SCHEDULES ALL TECH SPEC SURVEILLANCES, DID NOT GIVE ADEQUATE GUIDANCE ON THE SCHEDULING REQUIREMENTS FOR THE SECTION XI TESTS. THE MASTER SURVEILLANCE PLAN WILL BE REVISED TO INCLUDE THE NEEDED INFORMATION. THERE WAS NO IMMEDIATE CORRECTIVE ACTION TAKEN OR REQUIRED. THE VALVE STROKE TESTING HAD BEEN PERFORMED ON SCHEDULE FOR THE SECOND QUARTER OF 1988 PRIOR TO THE DEFICIENCY BEING DISCOVERED. SINCE THE TESTING WAS COMPLETE, AND ALL THE VALVES HAD PERFORMED SATISFACTORILY, THERE WAS NO IMMEDIATE ACTION NEEDED.

[27] CRYSTAL RIVER 3 DOCKET 50-302 LER 88-012
DESIGN ERROR LEADS TO INADEQUATE ISOLATION BETWEEN INSTRUMENTS IN THE CONTROL ROOM AND REMOTE SHUTDOWN PANEL.
EVENT DATE: 042888 REPORT DATE: 052788 NSSS: BW TYPE: PWR

FUSE LINK OF THE FUSE. ALL CONTROL ROD DRIVE FUSES IN BOTH UNITS 1 AND 2 WILL BE REPLACED WITH IMPROVED FUSES DURING THE NEXT AVAILABLE OUTAGES.

[33] DIABLO CANYON 1 DOCKET 50-275 LER 88-010
CONTAINMENT VENTILATION ISOLATIONS DUE TO ELECTRONIC NOISE.
EVENT DATE: 041688 REPORT DATE: 050688 NSSS: WE TYPE: PWR

(NSIC 209219) ON APRIL 16, 1988 AT 2139 PDT, APRIL 19, 1988 AT 1245 PDT, AND APRIL 23, 1988, AT 1313 PDT AND 1330 PDT WITH THE UNIT IN MODE 6 (REFUELING) THE CONTAINMENT VENTILATION ISOLATION SYSTEM (CVIS) WAS AUTOMATICALLY ACTUATED WHEN A HIGH ALARM OCCURRED ON RADIATION MONITOR (RM) RM11 FOR THE APRIL 16 AND APRIL 19 EVENTS AND ON RM14A FOR THE APRIL 23 EVENTS. CVIS VALVES, NOT ALREADY IN THE CLOSED POSITION PRIOR TO THE EVENTS, AUTOMATICALLY CLOSED AS DESIGNED. AS REQUIRED BY 10 CFR 50.72(B)(2)(II) FOUR-HOUR NONEMERGENCY REPORTS WERE MADE AT 2300 PDT APRIL 16, 1988 1425 PDT APRIL 19, 1988 AND 1444 PDT, APRIL 23, 1988. THE CVIS ACTUATIONS WERE ATTRIBUTED TO SPURIOUS NOISE SIGNALS AS INDICATED BY THE ABSENCE OF VALID INITIATION SIGNALS. THE CVIS WAS RESET AT 2333 PDT APRIL 16, 1988 1430 PDT, APRIL 19, 1988 AND 1349 PDT, APRIL 23, 1988. TO PRECLUDE RECURRENCE TIME DELAY CIRCUITRY, SIMILAR TO THAT ALREADY INSTALLED IN UNIT 2, WILL BE INSTALLED IN UNIT 1 IN THOSE RADIATION MONITORS THAT CAN ACTUATE THE CVIS AND ARE KNOWN TO BE SUSCEPTIBLE TO ELECTRONIC NOISE.

[34] DIABLO CANYON 1 DOCKET 50-275 LER 88-012
CONTINUOUS PARTICULATE AND IODINE PLANT VENT SAMPLE FLOW NOT MAINTAINED DUE TO PERSONNEL ERROR.
EVENT DATE: 042288 REPORT DATE: 052388 NSSS: WE TYPE: PWR

(NSIC 209388) ON 4/22/88, THE SURVEILLANCE REQUIREMENT OF TECH SPEC (TS) 4.11.2.1.2, TABLE 4.11-2, ITEM 4 WAS NOT MET WHEN IT WAS DETERMINED THAT AN AUX. SAMPLE PUMP, USED AS A REPLACEMENT PUMP FOR THE INOPERABLE 1-RY-24, "PLANT VENT SAMPLE COLLECTION PUMP," WAS NOT RUNNING. THE PUMP WAS FOUND NOT RUNNING BY A CHEMISTRY AND RADIATION PROTECTION TECH AFTER PERFORMANCE OF A FLOW VERIFICATION TEST REQUIRED BY TS 4.3.3.10. THE I&C TECH INVOLVED WITH THE EVENT DID NOT REALIZE THE TS SIGNIFICANCE OF MAINTAINING CONTINUOUS FLOW THROUGH THE AUX. SAMPLE PUMP AND THEREFORE SECURED IT WHILE CONDUCTING TROUBLESHOOTING EFFORTS IN AN ATTEMPT TO RETURN 1-RY-24 TO SERVICE. THE TECH FAILED TO USE GOOD JUDGEMENT WHILE TROUBLESHOOTING AND FAILED TO NOTIFY THEIR FOREMAN BEFORE SECURING THE PUMP. THE TS 30-DAY INOPERABILITY REQUIREMENT FOR PUMP 1-RY-24 WAS NOT ADEQUATELY TRACKED BY RESPONSIBLE SUPERVISION AND RESULTED IN A LAST MINUTE EFFORT TO RETURN 1-RY-24 TO SERVICE. THIS CONTRIBUTED TO THE TECHNICIANS' FAILURE TO ADEQUATELY CONSIDER THEIR ACTION IN SECURING THE AUXILIARY SAMPLE PUMP WHILE TROUBLESHOOTING 1-RY-24. CORRECTIVE ACTIONS INCLUDE COUNSELING I&C TECHNICIANS AND MANAGEMENT PERSONNEL, REVIEWING TS 4.3.3.10 AND ADDING A PRECAUTIONARY STATEMENT TO THE PROCEDURE GOVERNING THE FUNCTIONAL TEST OF 1-RY-24 AND A PRECAUTIONARY LABEL ON THE AUX SAMPLE PUMP ADDRESSING FLOW REQUIREMENTS.

[35] DIABLO CANYON 2 DOCKET 50-323 LER 88-005
CONTAINMENT VENTILATION ISOLATION INITIATION DUE TO ELECTRONIC NOISE CAUSED BY MECHANICAL WEAR ON THE CHECK SOURCE LATCH.
EVENT DATE: 040588 REPORT DATE: 050488 NSSS: WE TYPE: PWR
VENDOR: WESTINGHOUSE ELECTRIC CORP.

(NSIC 209270) ON APRIL 5, 1988, AT 1244 PDT, WITH UNIT 2 IN MODE 1 (POWER OPERATION), A SPURIOUS INITIATION OF THE CONTAINMENT VENTILATION ISOLATION SYSTEM (CVIS) OCCURRED. THE SAMPLE LINE ISOLATION VALVES FOR GASEOUS RADIATION MONITORS RM-11 AND RM-12 CLOSED AS DESIGNED. ALL OTHER CVIS VALVES THAT RECEIVE ISOLATION SIGNALS WERE ALREADY CLOSED WHEN THE EVENT OCCURRED. AS REQUIRED BY 10 CFR 50.72(B)(2)(II), A 4-HOUR NON-EMERGENCY EVENT REPORT WAS MADE ON APRIL 5 1988 AT

VENDOR: HANCOCK CO.

(NSIC 209290) ON APRIL 4, 1988, WITH UNIT 3 IN A REFUELING OUTAGE AND DURING THE PERFORMANCE OF DRESDEN TECHNICAL STAFF SURVEILLANCE PROCEDURE (DTS) 1600-1, LOCAL LEAK RATE TESTING (LLRT) OF PRIMARY CONTAINMENT ISOLATION VALVES, THE ATMOSPHERE CONTAINMENT AND DILUTION (ACAD) PURGE CHECK VALVE 3-2599-23B LEAKED 192.66 SCFH. THIS BROUGHT THE TOTAL "AS FOUND" LEAKAGE USING THE MAXIMUM PATHWAY METHOD FOR TYPE "B" AND "C" TESTING TO 627.596 SCFH, WHICH EXCEEDED THE TECH SPEC 3.7.A.2.B.(2)(A) LIMIT OF 493.116 SCFH. WORK REQUEST #D74156 WAS INITIATED TO REPAIR THE VALVE. THE CAUSE OF THE EXCESSIVE LEAKAGE IS UNKNOWN AT THIS TIME. THIS VALVE WILL BE REPAIRED AND RETESTED PRIOR TO UNIT STARTUP. A SUPPLEMENT TO THIS REPORT WILL THEN BE SUBMITTED OUTLINING THE CAUSE OF FAILURE, RETEST RESULTS, THE FINAL TYPE "B" AND "C" LEAK RATE TEST RESULTS AND ANY ADDITIONAL CORRECTIVE ACTIONS TO PREVENT RECURRENCE. ALSO INCLUDED WITH THE SUPPLEMENT WILL BE A TABULATION OF ALL THE TESTABLE PENETRATIONS MAXIMUM AND MINIMUM PATHWAY LEAKAGES. THE SAFETY SIGNIFICANCE OF THIS EVENT WAS MINIMAL BECAUSE THE IN-LINE ISOLATION VALVE, 3-2599-2B, WAS NOT OBSERVED TO BE LEAKING. THEREFORE, THE "THROUGH" LEAKAGE, WHICH REPRESENTS ACTUAL CONTAINMENT LEAKAGE, WAS MINIMAL. A PREVIOUS OCCURRENCE OF THIS TYPE IS OUTLINED IN REPORTABLE OCCURRENCE #87-004 ON DOCKET #050237.

[39] DRESDEN 3 DOCKET 50-249 LER 88-011
GROUP II PRIMARY CONTAINMENT ISOLATION DUE TO PROCEDURAL INADEQUACY.
EVENT DATE: 041288 REPORT DATE: 051088 NSSS: GE TYPE: BWR

(NSIC 209352) ON APRIL 12, 1988 AT 0441 HOURS, WITH UNIT 3 SHUT DOWN FOR A REFUELING OUTAGE, A GROUP II PRIMARY CONTAINMENT ISOLATION WAS RECEIVED. THIS ISOLATION SIGNAL RESULTED IN THE TRIPPING AND ISOLATING OF THE UNIT 3 REACTOR BUILDING VENTILATION FANS, THE AUTO START OF THE STANDBY GAS TREATMENT SYSTEM AND THE CLOSURE OF ALL ISOLATION VALVES (NOT OUT OF SERVICE AS A RESULT OF THE REFUEL OUTAGE) PERTAINING TO THE GROUP II ISOLATION SIGNAL. THE CAUSE OF THE EVENT WAS THE DE-ENERGIZATION OF THE DRYWELL HIGH RADIATION MONITORS WHILE HANGING AN OUT OF SERVICE ON THE ATMOSPHERIC CONTAINMENT ATMOSPHERE DILUTION/CONTAINMENT AIR MONITORING (ACAD/CAM) SYSTEM. THE ROOT CAUSE OF THE EVENT WAS CONTRIBUTED TO PROCEDURAL INADEQUACY. AS IMMEDIATE CORRECTIVE ACTION, POWER WAS RESTORED TO THE RADIATION MONITORS AND THE ISOLATION WAS RESET. THE LONG TERM CORRECTIVE ACTIONS INCLUDE EVALUATING POSSIBLE PROCEDURE CHANGES AND ADDITIONAL TRAINING ON ELECTRICAL BLUEPRINT READING. THE SAFETY SIGNIFICANCE OF THIS EVENT WAS MINIMAL SINCE THE DRYWELL RADIATION MONITORS WERE NOT REQUIRED TO BE OPERABLE WITH THE REACTOR IN A SHUTDOWN CONDITION AND ALL FUEL REMOVED FROM THE REACTOR.

[40] DRESDEN 3 DOCKET 50-249 LER 88-007
STANDBY LIQUID CONTROL RELIEF VALVES FAIL TO OPEN DUE TO SOLIDIFICATION OF SODIUM PENTABORATE SOLUTION.
EVENT DATE: 041388 REPORT DATE: 050688 NSSS: GE TYPE: BWR
VENDOR: CROSBY VALVE & GAGE CO.

(NSIC 209350) ON APRIL 13, 1988 AT 2130 HOURS WITH UNIT 3 IN THE REFUEL MODE, THE STANDBY LIQUID CONTROL (SBLC) RELIEF VALVES 3-1105A AND 3-1105B FAILED TO OPEN DURING THE PERFORMANCE OF DRESDEN MAINTENANCE PROCEDURE (DMP) 1100-2, STANDBY LIQUID CONTROL RELIEF VALVE SETTING. AN INSPECTION OF THE VALVES REVEALED THAT SODIUM PENTABORATE SOLUTION HAD SOLIDIFIED IN THE VALVES. THIS SOLIDIFICATION OCCURRED BECAUSE THE HEAT TRACE SYSTEM WAS DISCONNECTED FROM THE SBLC PIPING ON APRIL 10, 1988 TO ALLOW FOR INSTALLATION OF A MODIFICATION TO THE SBLC SYSTEM. THE ROOT CAUSE OF THIS EVENT WAS ATTRIBUTED TO BLOCKAGE OF THE RELIEF VALVES AS A RESULT OF SOLIDIFICATION OF THE SODIUM PENTABORATE SOLUTION. A CONTRIBUTING CAUSE OF THE RELIEF VALVES' FAILURE INCLUDED INSUFFICIENT PROCEDURAL PRECAUTIONS REGARDING THE TIMELINESS OF TESTING THE RELIEF VALVES. AFTER CLEANING THE VALVES' INTERNALS, MAINTENANCE PERSONNEL READJUSTED THE VALVES TO OPEN WITHIN THE

5-5-88 AT 0500. THE SEVEN-DAY TIME LIMIT FOR THE EQUIPMENT HATCH WAS EXCEEDED ON 4-18-88 AT 2115 AND 5-9-88 AT 1400. SINCE THE CONTAINMENT WALL IS CONSIDERED TO BE A FIRE BARRIER, OPENING THESE HATCHES CONSTITUTES BREACHING A FIRE BARRIER. TECH SPEC 3.7.12 REQUIRES THAT WITHIN ONE HOUR, EITHER ESTABLISH A CONTINUOUS FIRE WATCH OR VERIFY THE OPERABILITY OF FIRE DETECTORS AND ESTABLISH AN HOURLY FIRE WATCH PATROL. CONTINUOUS FIRE WATCHES WERE ESTABLISHED AND MAINTAINED. TECH SPEC 3.7.12 ALSO REQUIRES THAT BREACHED FIRE BARRIERS BE RESTORED TO FUNCTIONAL STATUS WITHIN SEVEN DAYS OR A SPECIAL REPORT MUST BE SUBMITTED WITHIN THE FOLLOWING 30 DAYS. THEREFORE, THIS SPECIAL REPORT IS BEING SUBMITTED. DUE TO THE SCOPE OF THE WORK IN PROGRESS, IT WAS NOT PRACTICAL TO CLOSE THESE HATCHES WITHIN SEVEN DAYS. THE CONTAINMENT PERSONNEL AND EQUIPMENT HATCHES WILL BE CLOSED PRIOR TO ENTRY INTO MODE 4 (HOT SHUTDOWN).

[44] FARLEY 1 DOCKET 50-348 LER 88-012
 FIRE HOSE STATION INOPERABLE FOR MORE THAN FOURTEEN DAYS.
 EVENT DATE: 042188 REPORT DATE: 051388 NSSS: WE TYPE: PWR

(NSIC 209279) AT 1500 ON 4-7-88, FIRE HOSE STATION N1V43-D-128 WAS ISOLATED BECAUSE THE PACKING FOLLOWER ON THE VALVE WAS BROKEN WHICH CAUSED EXCESSIVE LEAKAGE. REPAIRS COULD NOT BE COMPLETED WITHIN FOURTEEN DAYS. TECHNICAL SPECIFICATION 3.7.11.4 REQUIRES THE FIRE HOSE STATION TO BE RETURNED TO OPERABLE STATUS WITHIN FOURTEEN DAYS OR A SPECIAL REPORT MUST BE SUBMITTED WITHIN THE FOLLOWING 30 DAYS. THEREFORE, THIS SPECIAL REPORT IS BEING SUBMITTED. REPLACEMENT PARTS FOR THE FIRE HOSE STATION HAVE BEEN ORDERED. THE REPAIRS WILL BE COMPLETED AS SOON AS THE PARTS ARE RECEIVED. TECHNICAL SPECIFICATION ACTION STATEMENT REQUIREMENTS FOR THE INOPERABLE FIRE HOSE STATION ARE BEING MET.

[45] FERMI 2 DOCKET 50-341 LER 87-043 REV 02
 UPDATE ON CONTROL CENTER HEATING VENTILATING AND AIR CONDITIONING SYSTEM ACTUATES TO RECIRCULATION MODE.
 EVENT DATE: 090287 REPORT DATE: 051388 NSSS: GE TYPE: BWR

(NSIC 209263) ON SEPTEMBER 2, 1987 AT 1442 HOURS. THE CONTROL CENTER HEATING, VENTILATING AND AIR CONDITIONING (CCHVAC) DIVISION I SHIFTED FROM NORMAL OPERATION TO RECIRCULATION MODE. ALSO, THE DIVISION I STANDBY GAS TREATMENT SYSTEM (SGTS) AUTOMATICALLY INITIATED. IMMEDIATELY PRIOR TO THESE ACTUATIONS, CHANNEL "A" FUEL POOL EXHAUST VENTILATION RADIATION MONITOR RECEIVED A DOWNSCALE/INOPERABLE TRIP ALARM. THE PLANT ENGINEERING STAFF WAS ABLE TO RECREATE THE CCHVAC AND SGTS ACTUATION BY MOVEMENT OF THE CONTROLS FOR THE FUEL POOL EXHAUST VENTILATION RADIATION MONITOR INDICATOR AND TRIP UNIT. HOWEVER, THE EXACT CAUSE OF THE ORIGINAL EVENT COULD NOT BE DETERMINED. TO PREVENT RECURRENCE, REQUIRED READING WAS ISSUED. INFORMATIONAL ENGRAVED PLATES HAVE BEEN ATTACHED ONTO EACH OF THE FUEL POOL RADIATION EXHAUST MONITORS A, B, C AND D THAT STATES THE FOLLOWING: "RED PUSHBUTTON SWITCH IS FOR RESET ONLY. INOP TRIP CANNOT BE INHIBITED."

[46] FERMI 2 DOCKET 50-341 LER 88-008 REV 01
 UPDATE ON LEAKAGE IN EXCESS OF THE ALLOWABLE FOUND FOR PRIMARY CONTAINMENT ISOLATION VALVES DURING LOCAL LEAK RATE TESTING.
 EVENT DATE: 022988 REPORT DATE: 052788 NSSS: GE TYPE: BWR

(NSIC 209414) PERIODIC LEAK RATE TESTING OF PRIMARY CONTAINMENT ISOLATION VALVES WAS COMPLETED AS REQUIRED BY TECHNICAL SPECIFICATION SURVEILLANCE REQUIREMENTS DURING THE LOCAL LEAK RATE TESTING OUTAGE. DURING THE COURSE OF TESTING, THE DETERMINATION WAS MADE THAT THE COMBINED LEAKAGE LIMITS AS SPECIFIED IN TECHNICAL SPECIFICATION LIMITING CONDITIONS FOR OPERATION WERE EXCEEDED. THE BASIS OF THE SURVEILLANCE REQUIREMENT IS TO ALLOW FOR THE EARLY DETECTION OF VALVE LEAKAGE DUE TO NORMAL WEAR AND DEGRADATION DURING A SPECIFIED TIME INTERVAL. THE VALVE

NEW VALVES WERE TESTED TO ENSURE OPERABILITY, AND THE SYSTEM WAS RETURNED TO NORMAL. TO ENSURE CONTINUED OPERABILITY, THE CHECK VALVES HAVE BEEN INCORPORATED INTO THE STATION S IN-SERVICE-INSPECTION (ISI) PROGRAM. PRESENT PLANS CALL FOR THE VALVES TO BE TESTED AS PART OF THE ISI PROGRAM DURING THE SCHEDULED 1988 OUTAGE.

[53] FT. CALHOUN 1 DOCKET 50-285 LER 88-013
FAILURE TO BYPASS INOPERABLE REACTOR PROTECTIVE SYSTEM CHANNEL.
EVENT DATE: 050988 REPORT DATE: 060988 NSSS: CE TYPE: PWR

(NSIC 209526) ON MAY 9, 1988, AT 0902 (CDT), DURING THE PERFORMANCE OF SURVEILLANCE TEST ST-RFS-3 F.2, CHANNEL "C" REACTOR COOLANT LOW FLOW TRIP SETPOINT WAS FOUND TO BE OUT OF TOLERANCE LOW. UPON COMPLETION OF THE SURVEILLANCE TEST THE INSTRUMENT AND CONTROL TECHNICIAN SUBMITTED A MAINTENANCE ORDER TO CONDUCT AN INVESTIGATION INTO THE PROBLEM. THE PROBLEM WAS LATER DETERMINED TO BE A FAILED POWER SUPPLY TO THE TRIP UNIT, WHICH WAS REPLACED AND THE UNIT RETURNED TO OPERABILITY ON MAY 11, 1988 AT 2042 (CDT). THIS CONDITION RESULTED IN THE TRIP UNIT BEING INOPERABLE LONGER THAN TECHNICAL SPECIFICATIONS ALLOW. SPECIFIC CORRECTIVE ACTIONS IN RESPONSE TO THIS INCLUDE: A CAUTION HAS BEEN INCLUDED IN THE RPS SURVEILLANCE TESTS GOVERNING TRIP UNIT SETPOINT VERIFICATION, TO INSTRUCT THE TECHNICIAN CONDUCTING THE TEST THAT WHENEVER A TRIP UNIT IS FOUND OUT OF SPECIFICATION TO NOTIFY THE SHIFT SUPERVISOR FOR OPERABILITY DETERMINATION. 2. A MEMORANDUM FROM THE SUPERVISOR - MAINTENANCE WAS ISSUED TO INSTRUMENT AND CONTROL AND ELECTRICAL MAINTENANCE PERSONNEL STRESSING THE IMPORTANCE OF OPERABILITY DETERMINATION WHEN TECHNICAL SPECIFICATION EQUIPMENT IS FOUND TO BE OUT OF SPECIFICATION.

[54] HATCH 1 DOCKET 50-321 LER 88-004
DRAIN LINE FAILS DUE TO FATIGUE CAUSING HIGH TEMPERATURE CONDITION AND VALVE ISOLATION.
EVENT DATE: 041588 REPORT DATE: 051688 NSSS: GE TYPE: BWR
VENDOR: GENERAL ELECTRIC CO.

(NSIC 209324) ON 4/15/88 AT APPROXIMATELY 0411 CDT, UNIT 1 WAS IN THE RUN MODE AT AN APPROXIMATE POWER LEVEL OF 2436 MWT (APPROXIMATELY 100 PERCENT OF RATED THERMAL POWER). AT THAT TIME, PLANT OPERATIONS PERSONNEL NOTED THAT ONE OF THE REACTOR WATER CLEAN UP (RWCU EISS CODE CE) PRIMARY CONTAINMENT ISOLATION SYSTEM (PCIS EISS CODE JM) VALVES HAD CLOSED. THIS WAS AN UNANTICIPATED ACTUATION OF AN ENGINEERED SAFETY FEATURE. THE ROOT CAUSE OF THIS EVENT IS HIGH CYCLE FATIGUE FAILURE OF A 3/4 INCH DRAIN LINE. THE FAILURE OF THE DRAIN LINE ALLOWED STEAM TO BE RELEASED INTO THE RWCU PUMP ROOM. THIS ACTIVATED A ROOM TEMPERATURE SENSOR WHICH, IN TURN, SENT AN ISOLATION SIGNAL TO THE OUTBOARD PCIS VALVE. CORRECTIVE ACTIONS FOR THIS EVENT INCLUDED: 1) REPLACING THE DRAIN LINE AND VERIFYING THE LINE DID NOT LEAK, 2) INVESTIGATING THE OPERATION OF A TRANSMITTER, 3) SCHEDULING REPLACEMENT OF A RWCU PUMP, AND 4) SCHEDULING A DETAILED ENGINEERING EVALUATION/ANALYSIS OF THE RWCU DRAIN LINES AND ASSOCIATED SMALL BORE PIPING SUPPORTS.

[55] HATCH 1 DOCKET 50-321 LER 88-005
PERSONNEL ERROR CAUSES AIR INTRODUCTION INTO TURBINE LUBE OIL COOLERS RESULTING IN SCRAM.
EVENT DATE: 041988 REPORT DATE: 051988 NSSS: GE TYPE: BWR

(NSIC 209406) ON 4/19/88 AT APPROXIMATELY 0802 CDT, UNIT 1 WAS IN THE RUN MODE AT AN APPROXIMATE POWER LEVEL OF 2433 MWT (APPROXIMATELY 100 PERCENT OF RATED THERMAL POWER). AT THAT TIME, PLANT OPERATIONS PERSONNEL WERE EXCHANGING THE MAIN TURBINE LUBRICATION OIL COOLERS (TLOCS EISS CODE TD). SHORTLY AFTER THE EXCHANGE OF THE TLOCS, A REACTOR SCRAM OCCURRED. THE ROOT CAUSE OF THIS EVENT IS

PERSONNEL ERROR. SPECIFICALLY, PLANT OPERATIONS SUPERVISORY PERSONNEL ASSIGNED AN INFREQUENTLY PERFORMED TASK WITHOUT ISSUING SUFFICIENT GUIDANCE RELATIVE TO THE PERFORMANCE OF THE TASK. ADDITIONALLY, OPERATIONS PERSONNEL FAILED TO NOTIFY OPERATIONS SUPERVISION THAT THEY WERE UNFAMILIAR WITH THE TASK. THE CORRECTIVE ACTIONS FOR THIS EVENT INCLUDED: 1) COUNSELING OF INVOLVED OPERATIONS PERSONNEL, AND 2) REVISING PLANT PROCEDURES TO PROVIDE GUIDANCE RELATIVE TO REMOVING AND RETURNING THE TLOCS TO SERVICE. IT IS ANTICIPATED THE PROCEDURE REVISIONS WILL BE COMPLETED BY APPROXIMATELY 6/1/88.

[56] HATCH 2 DOCKET 50-366 LER 88-010
 DEFICIENT PROCEDURE RESULTS IN INADEQUATE SURVEILLANCE RESULTS.
 EVENT DATE: 041488 REPORT DATE: 051388 NSSS: GE TYPE: BWR

(NSIC 209330) ON 04/14/88 AT APPROXIMATELY 1445 CDT, A MEMBER OF THE PROCEDURE UPGRADE PROGRAM (PUP) DETERMINED THAT THE RESPONSE TIME TESTING PROCEDURE FOR THE AVERAGE POWER RANGE MONITOR CIRCUITRY (APRM EIIIS CODE IG) DID NOT PRODUCE DATA WHICH COULD CONSISTENTLY DEMONSTRATE THAT THE FLOW REFERENCED, UPSCALE SIMULATED THERMAL POWER TRIP (STPT) RESPONSE TIMES WERE ACCEPTABLE. SPECIFICALLY, THE PROCEDURE DID NOT EFFECTIVELY EXCLUDE THE CAPACITATIVE (RC) TIME CONSTANT IN THE STPT CIRCUIT, AS PERMITTED BY THE TECHNICAL SPECIFICATIONS. THEREFORE, FROM THE RESULTING DATA, IT COULD NOT ALWAYS BE DETERMINED WHETHER THE RESPONSE TIME ACCEPTANCE CRITERIA HAD BEEN MET, RESULTING IN A CONDITION PROHIBITED BY THE PLANT'S TECHNICAL SPECIFICATIONS. THE ROOT CAUSE IS PROCEDURE INADEQUACY. THE PROCEDURE DID NOT PROPERLY EXCLUDE THE SIMULATED THERMAL POWER TIME CONSTANT FROM THE MEASUREMENT OF THE RESPONSE TIME. THE CORRECTIVE ACTIONS FOR THIS EVENT INCLUDED SCHEDULING THE REVISION OR REPLACEMENT OF THE DEFICIENT PROCEDURE AND ITS SATISFACTORY PERFORMANCE PRIOR TO THE STARTUP FROM THE NEXT UNIT 2 REFUELING OUTAGE.

[57] HATCH 2 DOCKET 50-366 LER 88-013
 PERSONNEL ERROR ALLOWS VALVE TO BE OPENED RESULTING IN PRIMARY CONTAINMENT VIOLATION.
 EVENT DATE: 041588 REPORT DATE: 051688 NSSS: GE TYPE: BWR

(NSIC 209332) ON 4/15/88 AT APPROXIMATELY 0930 CDT, UNIT 2 WAS IN THE RUN MODE AT AN APPROXIMATE POWER LEVEL OF 2432 MWT (APPROXIMATELY 100 PERCENT OF RATED THERMAL POWER). AT THAT TIME, PLANT OPERATIONS PERSONNEL WERE PERFORMING A FUNCTIONAL TEST PROCEDURE IN ORDER TO RETURN A HYDROGEN RECOMBINER (EIIIS CODE BB) TO SERVICE AND THEY OPENED A PRIMARY CONTAINMENT ISOLATION SYSTEM (PCIS EIIIS CODE JM) VALVE. THIS VALVE WAS OPENED PRIOR TO ENSURING THAT THE SYSTEM PIPING WAS LEAK OR PRESSURE TESTED AFTER BEING REPAIRED. THE PIPING WAS THE SECOND PCIS BARRIER AND THE FAILURE TO TEST THE PIPING VIOLATED PRIMARY CONTAINMENT INTEGRITY. THE ROOT CAUSE OF THIS EVENT IS COGNITIVE PERSONNEL ERROR. PLANT PERSONNEL DID NOT INITIALLY REALIZE THE PIPING WAS THE SECOND-PRIMARY CONTAINMENT BARRIER. CORRECTIVE ACTIONS FOR THIS EVENT INCLUDED: 1) CLOSING ISOLATION VALVES, 2) INITIATING CONTROLS TO PREVENT OPENING OF THE VALVES, 3) PERFORMING TESTING OF THE PIPING, AND 4) COUNSELING INVOLVED PERSONNEL.

[58] HATCH 2 DOCKET 50-366 LER 88-011
 EQUIPMENT FAILURE IN CONJUNCTION WITH SURVEILLANCE CAUSES SCRAM.
 EVENT DATE: 041788 REPORT DATE: 051688 NSSS: GE TYPE: BWR
 VENDOR: GENERAL ELECTRIC CO.

(NSIC 209331) ON 04/17/88 AT APPROXIMATELY 0140 CDT, UNIT 2 WAS IN THE RUN MODE AT AN APPROXIMATE POWER LEVEL OF 1949 MWT (APPROXIMATELY 80 PERCENT OF RATED THERMAL POWER). OPERATIONS PERSONNEL WERE PERFORMING A TURBINE CONTROL VALVE (TCV EIIIS CODE JJ) FAST CLOSURE INSTRUMENT FUNCTIONAL TEST. WITH THE REACTOR PROTECTION SYSTEM (RPS EIIIS CODE JC) CHANNEL A IN THE TRIPPED CONDITION DUE TO

THE TCY TESTING, THE RPS CHANNEL B UNEXPECTEDLY TRIPPED, RESULTING IN A SCRAM. THE ROOT CAUSE OF THIS EVENT APPEARS TO BE EQUIPMENT FAILURE. SPECIFICALLY, THE PROBABLE CAUSE OF THE RPS CHANNEL B TRIP WAS A FAILED 15 VOLT REGULATOR CARD IN THE AVERAGE POWER RANGE MONITOR (APRM EIIIS CODE IG) CHANNEL B. HOWEVER, SINCE IT WAS DETERMINED THAT THE ALARM PRINTER WOULD NOT HAVE RECORDED A HIGH PRESSURE SCRAM SIGNAL DUE TO A FAILED PROCESS COMPUTER BOARD, THE RPS CHANNEL B TRIP COULD ALSO HAVE BEEN CAUSED BY A SPURIOUS HIGH PRESSURE TRIP. CORRECTIVE ACTIONS FOR THIS EVENT INCLUDED THOROUGHLY INVESTIGATING TRIP SYSTEM B1 (THE PORTION OF RPS CHANNEL B LOGIC WHICH ACTUALLY TRIPPED), FOR THE CAUSE OF THE TRIP AND REPLACING THE FAILED EQUIPMENT.

[59] HATCH 2 DOCKET 50-366 LER 88-012
 DEFICIENT PROCEDURE CAUSES INADEQUATE RESPONSE TIME SURVEILLANCE RESULTS.
 EVENT DATE: 042188 REPORT DATE: 052388 NSSS: GE TYPE: BWR

(NSIC 209425) ON 04/21/88 AT APPROXIMATELY 1315 CDT, UNIT 2 WAS IN COLD SHUTDOWN WITH AN APPROXIMATE POWER LEVEL OF 0 MWT (APPROXIMATELY 0 PERCENT OF RATED THERMAL POWER). AT THAT TIME, A MEMBER OF THE PROCEDURE UPGRADE PROGRAM (PUP) DETERMINED THAT THE PROCEDURE FOR TESTING THE RESPONSE TIME FOR THE ISOLATION FUNCTION OF THE SUPPLY AND EXHAUST DAMPERS IN THE REACTOR BUILDING (EIIIS CODE VA) AND REFUELING FLOOR NORMAL VENTILATION (EIIIS CODE VG) SYSTEMS DID NOT INCLUDE TESTING THE RESPONSE TIME OF THE ISOLATION ACTUATION INSTRUMENTATION. THUS, SURVEILLANCE REQUIREMENTS WERE NOT MET RESULTING IN A CONDITION PROHIBITED BY THE PLANT'S TECHNICAL SPECIFICATIONS. THE ROOT CAUSE OF THIS EVENT IS PROCEDURE INADEQUACY. THE PROCEDURE DID NOT PROPERLY MEASURE ISOLATION SYSTEM RESPONSE TIME FROM THE RECEIPT OF THE INITIAL SIGNAL THROUGH THE CLOSURE OF THE DAMPERS. THE CORRECTIVE ACTIONS FOR THIS EVENT INCLUDED DEVELOPING AND PERFORMING TWO SPECIAL PURPOSE PROCEDURES WHICH DEMONSTRATED ACCEPTABLE INSTRUMENTATION RESPONSE TIMES AND SCHEDULING DEVELOPMENT OF PERMANENT PROCEDURE REVISIONS.

[60] HATCH 2 DOCKET 50-366 LER 88-014
 DEFICIENT PROCEDURE CAUSES INADEQUATE 18 MONTH REACTOR PROTECTION SYSTEM FUNCTIONAL TESTS.
 EVENT DATE: 042788 REPORT DATE: 052688 NSSS: GE TYPE: BWR

(NSIC 209426) ON 04/27/88 AT APPROXIMATELY 1415 CDT, UNIT 2 WAS IN COLD SHUTDOWN WITH AN APPROXIMATE POWER LEVEL OF 0 MWT (APPROXIMATELY 0 PERCENT OF RATED POWER). AT THAT TIME, PROCEDURE UPGRADE PROGRAM (PUP) PERSONNEL REPORTED THAT THE LOGIC SYSTEM FUNCTIONAL TEST (LSFT) PROCEDURES FOR THE REACTOR PROTECTION SYSTEM (RPS EIIIS CODE JC) DID NOT TEST SOME PORTIONS OF THE RPS LOGIC. SPECIFICALLY, THE MAIN STEAM ISOLATION VALVE (MSIV EIIIS CODE JM) AND TURBINE STOP VALVE (TSV EIIIS CODE JJ) CLOSURE RPS LOGIC WAS NOT COMPLETELY TESTED AND THE RPS TEN-SECOND TIME DELAYS WERE NOT TESTED AT THE REQUIRED 18 MONTH FREQUENCY. THUS, SURVEILLANCE REQUIREMENTS WERE NOT ADEQUATELY MET RESULTING IN A CONDITION PROHIBITED BY THE PLANT'S TECHNICAL SPECIFICATIONS. THE ROOT CAUSE OF THIS EVENT IS PROCEDURE INADEQUACY. THE RPS LSFT PROCEDURES DID NOT SUFFICIENTLY COVER THE RPS LOGIC TO FULLY DEMONSTRATE COMPLIANCE WITH THE TECHNICAL SPECIFICATIONS REQUIREMENTS. THE CORRECTIVE ACTIONS FOR THIS EVENT INCLUDED DEVELOPING AND PERFORMING A SPECIAL PURPOSE LSFT PROCEDURE, REVIEWING CALIBRATION HISTORY, AND SCHEDULING DEVELOPMENT OF PERMANENT PROCEDURE REVISIONS.

[61] HOPE CREEK 1 DOCKET 50-354 LER 86-092 REV 01
 UPDATE ON UNEXPECTED ACTUATION OF HPCI, RCIC AND CHANNEL D OF THE PRIMARY CONTAINMENT ISOLATION SYSTEM (PCIS).
 EVENT DATE: 120686 REPORT DATE: 060188 NSSS: GE TYPE: BWR
 VENDOR: ROSEMOUNT, INC.

(NSIC 209373) ON DECEMBER 6, 1986 AT 1111 HOURS, THE PLANT WAS IN OPERATIONAL

CONDITION 1 (POWER OPERATION) AT 98% POWER GENERATING 1067 MWE. FULL POWER GENERATOR LOAD REJECT TESTING WAS IN PROGRESS WHEN A HPCI, RCIC AND D CHANNEL PCIS ACTUATION OCCURRED ON SPURIOUS LOW AND HIGH WATER LEVEL SIGNALS. IN ADDITION A LEVEL 8 FEEDWATER PUMP TRIP SIGNAL WAS GENERATED. THE FEEDWATER SYSTEM WAS SUBSEQUENTLY RETURNED TO NORMAL SHUTDOWN OPERATION. ALL EQUIPMENT ACTUATED AS DESIGNED. SINCE THESE ACTUATIONS WERE NOT ANTICIPATED AS A PART OF THE TESTING IN PROGRESS, A NONEMERGENCY (4 HOUR) NOTIFICATION WAS MADE TO THE NRC. THE ROOT CAUSE OF THIS OCCURRENCE WAS PRESSURE OSCILLATIONS IN THE REACTOR LEVEL SENSING LINE WHICH WERE DETECTED BY THE FAST-ACTING ROSEMOUNT TRANSMITTERS - A DESIGN MISAPPLICATION. A FILTER CIRCUIT WAS INSTALLED IN THE GENERAL ELECTRIC CONTROL PANEL TO PROVIDE INTERIM ADJUSTABLE FILTERING CAPABILITY. REDESIGNED ROSEMOUNT CIRCUIT BOARDS ARE PRESENTLY SCHEDULED FOR DELIVERY IN NOVEMBER, 1988 AND INSTALLATION DURING THE MID-CYCLE OUTAGE IN JANUARY 1989.

[62] HOPE CREEK 1 DOCKET 50-354 LER 88-029
FAILURE TO MAKE TWO FOUR-HOUR FLOW RATE ESTIMATES DURING A SOUTH PLANT VENT MONITOR OUTAGE DUE TO PERSONNEL ERROR.
EVENT DATE: 041388 REPORT DATE: 051288 NSSS: GE TYPE: BWR

(NSIC 209329) THE SOUTH PLANT VENT MONITOR WAS INOPERABLE AND FOUR-HOUR ESTIMATES OF THE FLOW RATE THROUGH THIS PATHWAY WERE BEING MADE AS REQUIRED BY TECHNICAL SPECIFICATION 3.3.7.11, ACTION 122. ON APRIL 13, 1988 AT 1600 HOURS, THE PLANT WAS IN OPERATIONAL CONDITION 2 (STARTUP) AT 2% POWER GENERATING 0 MWE WHEN THE CONTROL ROOM RECEIVED A REPORT THAT, CONTRARY TO THE TECHNICAL SPECIFICATION REQUIREMENT, THE 0800 HOUR AND 1200 HOUR FLOW ESTIMATES FOR APRIL 13, 1988 WERE NOT MADE. FLOW RATE ESTIMATES WERE RESUMED AT 1600 HOURS ON THE SAME DAY. THE CAUSES OF THIS EVENT WERE FAILURES OF BOTH LICENSED AND NON LICENSED OPERATORS TO INITIATE AND COMPLETE THE APRIL 13, 1988 DAILY LOG AND THE SURVEILLANCES REQUIRED BY THE PLANT TECHNICAL SPECIFICATIONS. CORRECTIVE ACTIONS INCLUDED COUNSELLING OF THE RESPONSIBLE PERSONNEL IN THE IMPORTANCE OF COMPLETING ALL DAILY LOG FORMS FULLY.

[63] HOPE CREEK 1 DOCKET 50-354 LER 88-010
TWO HPCI OIL CONTROL VALVES DISCOVERED NOT IN THE REQUIRED POSITION FOR OPERABILITY DUE TO PERSONNEL ERRORS.
EVENT DATE: 041488 REPORT DATE: 052588 NSSS: GE TYPE: BWR

(NSIC 209419) ON APRIL 14, 1988 AT 1900 HOURS, THE PLANT WAS IN OPERATIONAL CONDITION 2 (STARTUP) AT 5% POWER GENERATING 0 MWE WHEN TWO (2) HPCI OIL CONTROL VALVES WERE DISCOVERED NOT TO BE IN THE REQUIRED POSITION FOR OPERABILITY. IT WAS DETERMINED THAT THE MISPOSITIONING OF THESE VALVES RESULTED IN A FAILURE OF HPCI DURING TESTING TO DEVELOP A FLOW OF AT LEAST 5600 GPM TO THE REACTOR PRESSURE VESSEL (RPV) AT RATED PRESSURE IN LESS THAN 27 SECONDS, AS REQUIRED TO PERFORM ITS SAFETY FUNCTION. HFCL WAS DECLARED INOPERABLE AND ACTION STATEMENT OF TECHNICAL SPECIFICATION 3.5.1.C WAS ENTERED. THE TWO VALVES WERE RETURNED TO THEIR REQUIRED POSITION FOR OPERABILITY AND HFCL TESTING WAS COMPLETED SATISFACTORY. THE ROOT CAUSE OF THIS OCCURRENCE WAS UNAUTHORIZED REPOSITIONING OF THE TWO HPCI OIL CONTROL VALVES PERSONNEL ERROR. CORRECTIVE ACTIONS INCLUDE RESTORING THE VALVES TO THEIR REQUIRED POSITIONS AND POSTING SIGNS CAUTIONING THAT THEY NOT BE UNLOCKED OR REPOSITIONED WITHOUT PROPER AUTHORIZATION.

[64] HOPE CREEK 1 DOCKET 50-354 LER 88-012
MANUAL REACTOR SCRAM FOLLOWING A LOSS OF ALL CIRCULATING WATER PUMPS DUE TO MALFUNCTION OF THE CIRCULATING WATER SYSTEM MULTIPLEXER (MUX) DUE TO EQUIPMENT FAILURE.
EVENT DATE: 043088 REPORT DATE: 053188 NSSS: GE TYPE: BWR

(NSIC 209421) ON APRIL 30, 1988 AT 0550 HOURS, THE PLANT WAS IN OPERATIONAL

CONDITION 1 (POWER OPERATION) AT 100% POWER GENERATING 1085 MWE WHEN THE CIRCULATING WATER SYSTEM BEGAN TO EXPERIENCE SPURIOUS PUMP DISCHARGE VALVE CLOSURES AND PUMP TRIPS. AT APPROXIMATELY 0850 HOURS BOTH 4.16 KVA UNIT SUBSTATION CIRCULATING WATER SYSTEM INFEDS TRIPPED, PLACING ALL CIRCULATING WATER SYSTEM PUMPS IN EMERGENCY TRIP CONDITION. THE REACTOR WAS MANUALLY SCRAMMED AT 0852 HOURS. THE MAIN STEAM ISOLATION VALVES (MSLV) WERE CLOSED AT 0938 HOURS. ALL REACTOR FEED PUMP TURBINLS WERE TRIPPED. WITH THE MAIN CONDENSER ISOLATED, HIGH PRESSURE COOLANT INJECTION (HPCI) AND REACTOR CORE ISOLATION COOLING (RCIC) WERE PLACED IN SERVICE. WHILE BOTH HPCI AND RCIC WERE RUNNING, A HIGH REACTOR WATER LEVEL TRIP OCCURRED, REACTOR PRESSURE INCREASED AND A SAFETY/RELIEF VALVE (SRV) LIFTED. ON THE SUBSEQUENT SRV CLOSURE, REACTOR WATER LEVEL SHRANK TO LEVEL 2 AND GENERATED AN AUTOMATIC SCRAM SIGNAL. HPCI AND RCIC WERE THEN MANUALLY RETURNED TO SERVICE TO CONTROL PRESSURE AND WATER LEVEL DURING SHUTDOWN. THE ROOT CAUSE OF THIS OCCURRENCE WAS FAILURE IN THE CIRCULATING WATER SYSTEM MULTIPLEX (MUX) SYSTEM WHICH CAUSED MULTIPLE SPURIOUS SIGNALS TO THE CIRCULATING WATER SYSTEM COMPONENTS - AN EQUIPMENT FAILURE.

[61] INDIAN POINT 2 DOCKET 50-247 LER 88-005
 TESTING OUTSIDE REQUIRED FREQUENCY RANGE.
 EVENT DATE: 040488 REPORT DATE: 050488 NSSS: WE TYPE: PWR
 OTHER UNITS INVOLVED: INDIAN POINT 1 (PWR)

(NSIC 209264) ON APRIL 4, 1988, APRIL 11, 1988, APRIL 15, 1988, AND APRIL 18, 1988, IT WAS DISCOVERED THAT SEVERAL SURVEILLANCE INTERVALS FOR TESTING, REQUIRED BY TECHNICAL SPECIFICATIONS, HAD BEEN EXCEEDED. THE UNTIMELY SURVEILLANCES INCLUDED A TEST IN THE FUNCTIONAL RADIATION MONITORING SYSTEM AND SEVERAL VALVES WHICH ARE REQUIRED TO BE TESTED IN ACCORDANCE WITH SECTION XI OF THE ASME BOILER AND PRESSURE VESSEL CODE. UPON DISCOVERY, ALL TESTS ON THE ABOVE EQUIPMENT WERE PROMPTLY PERFORMED WITH NO RESULTANT FAILURES IN TESTS REQUIRED BY TECHNICAL SPECIFICATIONS.

[66] INDIAN POINT 3 DOCKET 50-286 LER 87-010 REV 01
 UPDATE ON SUBCRITICAL SAFETY INJECTION ACTUATION CAUSED BY OPERATOR ERROR WHILE TROUBLESHOOTING STATIC INVERTER.
 EVENT DATE: 090387 REPORT DATE: 040'88 NSSS: WE TYPE: PWR

(NSIC 209301) AT 2336 HRS ON 9/3/87, WITH THE REACTOR SUBCRITICAL, THE CONTROL ROOM REACTOR OPERATOR WAS IN THE PROCESS OF MANUALLY INSERTING CONTROL RODS IN ORDER TO SHUT DOWN FOR TURBINE MAINTENANCE. DURING THE COURSE OF THIS SHUTDOWN A REACTOR TRIP AND SAFETY INJECTION (SI) ACTUATION OCCURRED AUTOMATICALLY AND ALL EQUIPMENT FUNCTIONED PROPERLY. NO WATER WAS INJECTED INTO THE REACTOR BECAUSE THE REACTOR COOLANT SYSTEM (RCS) WAS AT NORMAL OPERATING PRESSURE. INVESTIGATION REVEALED THAT, WHILE TROUBLESHOOTING NO. 32 STATIC INVERTER, A LICENSED OPERATOR INADVERTENTLY INTERRUPTED THE POWER SUPPLY TO INSTRUMENT BUS 32 (PROTECTION CHANNEL I), CAUSING ITS VOLTAGE TO DROP TO ZERO. THE LOSS OF POWER TO INSTRUMENT BUS 32 (PROTECTION CHANNEL I) CAUSED ASSOCIATED REACTOR PROTECTION RELAYS TO DE-ENERGIZE AND INITIATED A REACTOR TRIP VIA THE NUCLEAR INSTRUMENTATION SYSTEM (NIS) INTERMEDIATE RANGE 35 HIGH FLUX SIGNAL. DUE TO THE DE-ENERGIZATION OF PROTECTION CHANNEL I, ALL SI RELAYS ASSOCIATED WITH PROTECTION CHANNEL I STEAM FLOW TRANSMITTERS AND LOW TAVERAGE FOR RCS LOOP 1 ALSO DE-ENERGIZED. THE REMAINING PORTION OF THE SI LOGIC WAS MADE UP WHEN THE ACTUAL RCS LOOP 2 TAVERAGE DECREASED BELOW THE LOW SET POINT (542F) FOR SI ACTUATION. IN ORDER TO PRECLUDE RECURRENCE, A DISCUSSION OF THIS EVENT HAS BEEN INCORPORATED INTO THE LICENSED OPERATOR REQUALIFICATION PROGRAM.

[67] KEWAUNEE DOCKET 50-305 LER 88-004
 COMMUNICATION DIFFICULTIES DURING THE IMPLEMENTATION OF NEW CONDENSER HOTWELL
 FLUSH PROCEDURE RESULTS IN REACTOR TRIP.
 EVENT DATE: 041288 REPORT DATE: 051288 NSSS: WE TYPE: PWR

(NSIC 209319) AT 0215 ON 4/12/88 WHILE THE PLANT WAS AT 23% REACTOR POWER IN A STARTUP FOLLOWING THE CYCLE XIII-XIV REFUELING OUTAGE, A LOW CONDENSER APPROXIMATELY 5% CAUSED A CONDENSATE PUMP TRIP, AN ASSOCIATED FEEDWATER PUMP TRIP, AND THEN A TURBINE/REACTOR TRIP. THESE ACTUATIONS OCCURRED DURING A SECONDARY PLANT FLUSHING EVOLUTION. THIS IS A POST-OUTAGE SPECIAL PROCEDURE WHICH FLUSHES CONTAMINANTS FROM SECONDARY PLANT PIPING AND THE CONDENSER THAT MAY HAVE BEEN INTRODUCED INTO THE SECONDARY SYSTEM DURING THE REFUELING OUTAGE. THE SECONDARY PLANT PIPING WAS FLUSHED TWICE, AND THEN THE CONDENSER WAS FLUSHED 5 TIMES. DURING THE FINAL CONDENSER FLUSH AT 23% POWER, THE HOTWELL LEVEL DECREASED TO APPROXIMATELY 5%. AT APPROXIMATELY 5% LEVEL THE CONDENSATE PUMP TRIPPED DUE TO THE LOW HOTWELL LEVEL. THIS PUMP TRIP ENSURES ADEQUATE NET POSITIVE SUCTION HEAD IS MAINTAINED FOR THE CONDENSATE PUMP. THE CAUSE OF THE EVENT WAS A COMBINATION OF THE PROCEDURE REQUIRING LOCAL VALVE MANIPULATIONS OUTSIDE OF THE CONTROL ROOM, COMMUNICATION DIFFICULTIES, AND THE RAPID RATE OF DECREASE IN THE HOTWELL LEVEL. THIS COMBINATION RESULTED IN THE HOTWELL LEVEL DECREASING TO BELOW THE CONDENSATE PUMP TRIP SET POINT. THE CONDENSATE PUMP TRIP RESULTED IN AN ASSOCIATED FEEDWATER PUMP TRIP FOLLOWED BY A TURBINE/REACTOR TRIP.

[68] LA SALLE 1 DOCKET 50-373 LER 88-004
 TRIP OF "A" REACTOR PROTECTION SYSTEM DUE TO IMPROPER INSTALLATION OF "A" AVERAGE
 POWER RANGE MONITOR RELAY.
 EVENT DATE: 042288 REPORT DATE: 052088 NSSS: GE TYPE: BWR
 OTHER UNITS INVOLVED: LA SALLE 2 (BWR)

(NSIC 209475) ON APRIL 22, 1988 AT 1319 HOURS, WITH UNIT 1 DEFUELED AND UNIT 2 IN OPERATIONAL CONDITION 1 (RUN) AT 96% POWER, DURING THE PERFORMANCE OF WORK REQUEST L79559 BY THE INSTRUMENT MAINTENANCE (IM) DEPARTMENT, REACTOR PROTECTION SYSTEM (RPS) BUS "A" TRIPPED. IN ACCORDANCE WITH THE WORK REQUEST, THE TECHNICIAN WAS REPLACING RELAY 1C51B-K1 IN AVERAGE POWER RANGE MONITOR (APRM) "A" PANEL 1N13-0608, WHEN A SMALL SPARK OCCURRED NEAR THE RELAY SOCKET. WITH THE TRIP OF RPS BUS "A" ON UNIT 1, A NUMBER OF AUTOMATIC ACTIONS OCCURRED AS A RESULT OF THE SUBSEQUENT GROUP II THROUGH VII ISOLATIONS AND HALF SCRAM. IMMEDIATE INVESTIGATION REVEALED THAT THE 1C71-S003A & C POWER MONITORING ASSEMBLIES (PMA'S), THE 175 AMP "A" RPS GENERATOR OUTPUT BREAKER WERE TRIPPED, AND A 6 AMP FUSE (1C71-F12A) WAS BLOWN, ALL OF WHICH FEED THE APRM CIRCUITRY. THE INITIATION OF THE EVENT WAS DETERMINED TO BE A SHORT TO GROUND WHICH OCCURRED WHEN THE REPLACEMENT 1C51B-K1 RELAY WAS MISPOSITIONED WHILE BEING INSERTED INTO THE RELAY SOCKET BY THE IM TECHNICIAN. THE SAFETY CONSEQUENCES OF THE EVENT WERE MINIMAL SINCE UNIT 1 WAS DEFUELED. ALL ISOLATIONS AND ACTUATIONS (HALF SCRAM ON UNIT 1 SBTG INITIATION) OCCURRED AS DESIGNED. THE 1C51B-K1 RELAY WHICH WAS BEING INSTALLED IN THE APRM CIRCUITRY WHEN THE "A" RPS BUS TRIPPED WAS BENCH TESTED BY THE IM DEPARTMENT AND FOUND TO BE UNDAMAGED.

[69] LA SALLE 2 DOCKET 50-374 LER 88-004
 MISSED TECH SPEC SURVEILLANCE ON MSIV LEAKAGE CONTROL SYSTEM DUE TO PERSONNEL
 ERROR.
 EVENT DATE: 032188 REPORT DATE: 042088 NSSS: GE TYPE: BWR

(NSIC 209035) ON MARCH 21, 1988 AT 1130 HOURS WITH UNIT 2 IN OPERATIONAL CONDITION 1 (RUN) AT 35% POWER, LASALLE OPERATING SURVEILLANCE LOS-MS-M1, "MAIN STEAM ISOLATION VALVE LEAKAGE CONTROL SYSTEM (MSIV LCS) BLOWER AND HEATER OPERABILITY TEST," WAS DISCOVERED TO BE PAST ITS CRITICAL TIME AND DATE OF 0820 HOURS ON MARCH 21, 1988. THE MSIV LCS WAS DECLARED INOPERABLE AND THE ACTION STATEMENT FOR TECH SPEC 3.0.3 WAS ENTERED AT 1245 HOURS. FOLLOWING THE

SATISFACTORY PERFORMANCE OF THE INBOARD PORTION OF LOS-MS-M1, TECH SPEC 3.0.3 WAS EXITED AT 1322 HOURS. THE OUTBOARD PORTION OF LOS-MS-M1 WAS SATISFACTORILY COMPLETED AT 1355 HOURS. THE PRIMARY CAUSE FOR THE MISSED SURVEILLANCE WAS THE FAILURE OF THE UNIT 2 SHIFT FOREMEN, OVER A PERIOD OF SEVERAL SHIFTS, TO INITIATE THE PERFORMANCE OF LOS-MS-M1 EVEN THOUGH THE SURVEILLANCE WAS PAST DUE AND APPROACHING ITS CRITICAL DUE DATE. TO PREVENT RECURRENCE OF THIS EVENT, THE SHIFT FOREMEN HAVE BEEN TRAINED ON THEIR RESPONSIBILITY TO REVIEW THE COMPUTERIZED SURVEILLANCE SCHEDULE, THE SHIFT TURNOVER AND THE PLANNING SCHEDULE AT LEAST ONCE EACH SHIFT AND A CHECKOFF BLOCK HAS BEEN ADDED TO THE SHIFT FOREMAN'S SHIFT TURNOVER SHEET TO ENSURE THE REVIEW IS PERFORMED. THIS EVENT IS REPORTABLE PURSUANT TO 10CFR50.73(A)(2)(I) DUE TO THE DEVIATION FROM PLANT TECH SPEC.

[70] LIMERICK 1 DOCKET 50-352 LER 86-006 REV 01
 UPDATE ON FAILURE TO PERFORM A TECH SPEC SURVEILLANCE REQUIREMENT.
 EVENT DATE: 011986 REPORT DATE: 051988 NSSS: GE TYPE: BWR

(NSIC 209366) ON JANUARY 22, 1986 AT 1200 HOURS, WITH THE UNIT IN COLD SHUTDOWN TO REPAIR THE #4 MAIN TURBINE CONTROL VALVE, THE FIRE PROTECTION ASSISTANT DISCOVERED THAT MONTHLY SURVEILLANCE TESTS 7-022-951-0 AND 7-022-953-0 (FIRE HOSE STATION AND HOSE CART VISUAL INSPECTIONS, RESPECTIVELY) DID NOT MEET THE SURVEILLANCE REQUIREMENTS OF TECH SPECS 4.7.6.5.A AND 4.7.6.6.A. THE TESTS WERE REQUIRED TO BE PERFORMED PRIOR TO JANUARY 19, 1986. ALTHOUGH ALL EQUIPMENT WAS SUBSEQUENTLY FOUND TO SATISFY THE SURVEILLANCE TEST CRITERIA, ALL TECH SPEC FIRE HOSE STATIONS AND HOSE CART STATIONS WERE CONSIDERED ADMINISTRATIVELY INOPERABLE IN ACCORDANCE WITH THE REQUIREMENTS OF TECH SPEC 4.0.3, DURING THE TIME INTERVAL BETWEEN JANUARY 19, 1986 AND JANUARY 22, 1986. THE CAUSE OF THIS EVENT WAS INADEQUATE COMMUNICATIONS AMONG THE FIRE PROTECTION GROUP MEMBERS AND AN INADEQUATE SUPERVISORY OVERVIEW OF THE SURVEILLANCE TEST PERFORMANCE. UPON DISCOVERY THE SURVEILLANCE TESTS WERE IMMEDIATELY CONDUCTED AND ALL EQUIPMENT WAS FOUND TO BE SATISFACTORY. ALL STATIONS WERE DECLARED OPERABLE AND ALL PERSONNEL RESPONSIBLE WERE COUNSELED TO EMPHASIZE THE IMPORTANCE OF DUE DATES. AN ADMINISTRATIVE GUIDELINE WAS IMPLEMENTED FEBRUARY 26, 1986 TO REQUIRE NOTIFICATION OF RESPONSIBLE SUPERVISORS WHEN A SURVEILLANCE TEST APPROACHES AN OVERDUE DATE. THERE WERE NO ADVERSE CONSEQUENCES AS A RESULT OF THIS EVENT.

[71] LIMERICK 1 DOCKET 50-352 LER 87-023 REV 03
 UPDATE ON ENGINEERED SAFETY FEATURE DUE TO STATION BATTERY CHARGER FAILURE.
 EVENT DATE: 061187 REPORT DATE: 051288 NSSS: GE TYPE: BWR
 VENDOR: BROWN BOVERI
 C & D BATTERIES, DIV OF ELTRA CORP.

(NSIC 209304) ON JUNE 11, 1987, THE STANDBY GAS TREATMENT AND REACTOR ENCLOSURE RECIRCULATION SYSTEMS (ENGINEERED SAFETY FEATURES) INITIATED AS A CONSEQUENCE OF ACTIONS TAKEN DUE TO FAILURE OF THE 1A1D103 STATION BATTERY CHARGER. THE 125 VDC STATION BATTERIES (1A1) WERE DISCONNECTED FROM THE BUS AT THE TIME OF THE EVENT TO ACCOMMODATE MAINTENANCE WORK. THE BATTERY CHARGER FAILURE IS BELIEVED TO BE A RESULT OF AN INTEGRATED CIRCUIT CONTROLLER CARD FAILURE WHICH RESULTED IN DC VOLTAGE FLUCTUATION. HOWEVER, WHEN THE CARD MANUFACTURER PERFORMED A FAILURE ANALYSIS, NO DEFECT COULD BE FOUND. THE CONSEQUENCES OF THIS EVENT WERE MINIMAL BECAUSE THE ENGINEERED SAFETY FEATURES INITIATED AS DESIGNED AND THE UNIT WAS SHUTDOWN WITH THE CORE OFFLOADED AT THE TIME OF THE EVENT. A TEMPORARY CIRCUIT ALTERATION (TCA) WAS INSTALLED TO PROVIDE AN ALTERNATE POWER SUPPLY TO THE DE-ENERGIZED BUS. DURING RE-ENERGIZATION OF THE BUS, A REACTOR PROTECTION SYSTEM SERIES BREAKER TRIPPED DUE TO A SPURIOUS UNDERVOLTAGE RELAY TRIP SIGNAL. BROWN BOVERI, THE UNDERVOLTAGE RELAY MANUFACTURER, HAS FILED A PART 21 REPORT REGARDING THE RELAY FALSE ACTUATION. THE AFFECTED UNDERVOLTAGE RELAYS IN UNIT 1 WERE REPLACED WITH RELAYS MODIFIED BY BROWN BOVERI. ONE OF THE MODIFIED RELAYS

PRODUCED FALSE ACTUATIONS DURING POST-INSTALLATION TESTING AND HAS BEEN RETURNED TO BROWN BOVERI FOR FURTHER ANALYSIS.

[72] LIMERICK 1 DOCKET 50-352 LER 87-048 REV 02
 UPDATE ON REACTOR SCRAM RESULTING FROM A MAIN TURBINE TRIP DUE TO LOW
 ELECTRO-HYDRAULIC CONTROL PRESSURE.
 EVENT DATE: 091987 REPORT DATE: 052088 NSSS: GE TYPE: BWR

(NSIC 209305) ON 9/19/87 AT 0910 HOURS, THE REACTOR SCRAM FROM 90% POWER AND A RECIRCULATION PUMP TRIP, FOLLOWING A MAIN TURBINE TRIP ON LOW ELECTRO-HYDRAULIC CONTROL (EHC) SYSTEM OIL PRESSURE. FOLLOWING THE TURBINE TRIP, OPERATION OF THE TURBINE BYPASS VALVES WAS MAINTAINED UNTIL THEIR EHC ACCUMULATOR PRESSURE BLED DOWN. REACTOR PRESSURE REACHED A PEAK VALUE OF 1093 PSIG AND REACTOR VESSEL WATER LEVEL REACHED A MINIMUM LEVEL OF MINUS 2 INCHES DURING THE EVENT. THERE WERE NO ADVERSE CONSEQUENCES AND THERE WAS NO RELEASE OF RADIOACTIVE MATERIAL RESULTING FROM THIS EVENT. THE CAUSE OF THE EVENT WAS THE FAILURE OF A TUBING SOCKET WELD IN THE EHC FLUID ACTUATING SUPPLY (FAS) LINE TO THE #3 MAIN TURBINE CONTROL VALVE (MTCV). THE SECTION OF EHC PIPE CONTAINING THE FAILED WELD WAS REMOVED FOR INSPECTION AND A NEW SECTION OF PIPE WAS WELDED INTO THE LINE. ANALYSIS OF THE MEASURED PIPING MOVEMENT AND VIBRATION LEVELS INDICATES THAT A PROPERLY BONDED WELD WOULD NOT HAVE FAILED AS A RESULT OF THE VIBRATIONS PRESENT. AS SUCH, THIS EVENT IS CONSIDERED AN ISOLATED INCIDENT. ADJUSTMENTS WERE MADE TO THE STEAM LINE RESONANCE COMPENSATOR (SLRC) AND A SECOND SLRC WAS TEMPORARILY INSTALLED IN SERIES WITH THE FIRST TO REDUCE THE CONTROL SIGNAL OSCILLATIONS. FULL POWER OPERATION WAS ACHIEVED ON NOVEMBER 21, 1987.

[73] LIMERICK 1 DOCKET 50-352 LER 88-005 REV 01
 UPDATE CA TECH SPEC VIOLATION OF DRYWELL SUMP FLOW DETECTION SYSTEM OPERABILITY DUE TO PERSONNEL ERROR.
 EVENT DATE: 021988 REPORT DATE: 051988 NSSS: GE TYPE: BWR

(NSIC 209327) ON FEBRUARY 19, 1988 IT WAS DETERMINED THAT THE UNIT 1 DRYWELL SUMP FLOW LEAKAGE MONITORING SYSTEM, ONE OF FOUR REACTOR COOLANT LEAKAGE MONITORING SYSTEMS, WAS INOPERABLE IN VIOLATION OF TECHNICAL SPECIFICATION 3.4.3.1. A TECHNICAL REVIEW OF THE DRYWELL SUMP FLOW MONITORING SYSTEM FOR UNIT 2 PREOPERATIONAL TESTING FOUND THAT REPLICATION OF A WIRING CHANGE MADE IN AUGUST 1987, AS PART OF A UNIT 1 MODIFICATION, WOULD PREVENT THE SYSTEM FROM PROVIDING ALARM INDICATIONS OF A DRYWELL LEAKAGE RATE LARGER THAN THOSE SPECIFIED IN TECHNICAL SPECIFICATION 3.4.3.2. THE DRYWELL SUMP FLOW LEAKAGE MONITORING SYSTEM WAS THEREFORE DECLARED INOPERABLE. THERE WERE NO ADVERSE CONSEQUENCES AS A RESULT OF THIS EVENT AND NO RELEASE OR RADIATION OCCURRED AS A RESULT OF THIS EVENT. UNIT 1 DRYWELL LEAKAGE REMAINED BELOW THE TECHNICAL SPECIFICATION LIMITS DURING THE PERIOD OF INOPERABILITY. ONCE IDENTIFIED, THE WIRING WAS RESTORED TO ITS ORIGINAL CONFIGURATION, AND AT 1830 HOURS ON FEBRUARY 19, THE SYSTEM WAS DECLARED OPERABLE. THE CAUSE OF THE EVENT WAS A COMBINATION OF PERSONNEL ERRORS BY THE UTILITY EMPLOYED SYSTEM ENGINEERS AND THE CONTRACT DESIGN ENGINEER. TO PREVENT RECURRENCE, PROCEDURE TRAINING WILL BE COMPLETED BY THE CONTRACTOR AND A MEMO HAS BEEN SENT TO THE UTILITY SYSTEM ENGINEERS STRESSING THE IMPORTANCE OF PROVIDING THOROUGH DESIGN AND MODIFICATION PACKAGE REVIEW.

[74] LIMERICK 1 DOCKET 50-352 LER 88-014
 CONTROL ROOM HVAC ISOLATION RESULTING FROM FALSE HIGH CHLORINE CONCENTRATION SIGNAL BELIEVED TO HAVE BEEN CAUSED BY RAINWATER
 EVENT DATE: 041688 REPORT DATE: 050988 NSSS: GE TYPE: BWR

(NSIC 209281) ON APRIL 16, 1988 AT 615 HOURS, THE MAIN CONTROL ROOM VENTILATION SYSTEM ISOLATED DUE TO A FALSE 'D' CHANNEL HIGH CHLORINE CONCENTRATION SIGNAL. THE 'B' TRAIN OF THE CONTROL ROOM EMERGENCY FRESH AIR SUPPLY (CREPAS) SYSTEM, AN

ENGINEERED SAFETY FEATURE, INITIATED AS DESIGNED. THE EVENT OCCURRED DURING A RAIN STORM AND THE FALSE HIGH CHLORINE CONCENTRATION SIGNAL IS BELIEVED TO HAVE BEEN CAUSED BY RAINWATER COMING IN CONTACT WITH THE CHLORINE ANALYZER PROBE RESULTING IN A CHEMICAL IMBALANCE IN THE PROBE'S ELECTROLYTE. THE ANALYZER PROBES ARE LOCATED CLOSE TO THE OUTSIDE AIR INTAKE LOUVERS OF THE CONTROL ENCLOSURE AIR INTAKE PLENUM. AFTER THE 'D' CHANNEL CHLORINE INDICATOR SPIKED, THE CONTROL ROOM OPERATORS IMPLEMENTED TOXIC GAS PROCEDURE (SE2), UNTIL THE SIGNAL WAS VERIFIED TO BE SPURIOUS, BY PERFORMING A CHANNEL CHECK OF THE 'A', 'B' AND 'C' CHLORINE DETECTOR INDICATORS IN THE MAIN CONTROL ROOM. ALL CHLORINE CHANNELS INDICATED A NORMAL LEVEL (LESS THAN 0.1 PPM) AND THE ISOLATION WAS RESET AT 1653 HOURS. THE DURATION OF THE CONTROL ROOM ISOLATION WAS ZERO HOURS 38 MINUTES. THERE WAS NO RELEASE OF RADIOACTIVE MATERIAL TO THE ENVIRONMENT AS A RESULT OF THIS EVENT. A MODIFICATION TO CREFAS, DESIGNED TO CHANGE THE CHLORINE DETECTOR SYSTEM LOGIC AND LOCATION OF THE PROBES, HAS BEEN DEVELOPED AND IS SCHEDULED TO BE INSTALLED BY JULY 15, 1988.

[75] LIMERICK 1 DOCKET 50-352 LER 88-015
LIMERICK START OF AN EMERGENCY DIESEL GENERATOR DUE TO PERSONNEL ERROR DURING TROUBLESHOOTING OF THE TEST START CIRCUITRY.
EVENT DATE: 041888 REPORT DATE: 051888 NSSS: GE TYPE: BWR

(NSIC 209328) ON APRIL 18, 1988 AT 1009 HOURS WITH THE UNIT SHUTDOWN, THE D14 EMERGENCY DIESEL GENERATOR AUTO-STARTED IN THE TEST MODE DUE TO AN UNPLANNED TEST START SIGNAL. THIS EVENT WAS CAUSED BY A PERSONNEL ERROR AND IS REPORTABLE AS AN ENGINEERED SAFETY FEATURE ACTUATION. IMMEDIATELY PRIOR TO THE EVENT, A UTILITY FIELD ENGINEER WAS EXAMINING THE EMERGENCY DIESEL GENERATOR (EDG) TEST START CIRCUITRY IN THE DIESEL GENERATOR BAY. THE ENGINEER PROCEEDED TO MEASURE THE VOLTAGE ACROSS THE TEST START RELAY (TSRX) SEAL-IN CONTACTS WITHOUT THE PRIOR OPERATIONS STAFF APPROVAL REQUIRED BY ADMINISTRATIVE PROCEDURES. THE TEST METER WAS INCORRECTLY SET AND DREW ENOUGH CURRENT TO SIMULATE CLOSURE OF THE CONTACTS AND ACTUATE THE TEST START RELAY. THE EDG WAS RETURNED TO THE STANDBY MODE AT 1500 HOURS. THE CONSEQUENCES OF THIS EVENT WERE MINIMAL BECAUSE THE UNPLANNED START DID NOT AFFECT THE EDG'S ABILITY TO RESPOND TO A LOSS OF OFFSITE POWER ACCIDENT. A MEMORANDUM HAS BEEN ISSUED TO ALL FIELD ENGINEERS REQUIRING THE USE OF A TROUBLESHOOTING CONTROL FORM WHEN PERFORMING ACTIVITIES WHICH EVEN REMOTELY HAVE POTENTIAL FOR IMPACT ON OPERATIONS.

[76] MILLSTONE 1 DOCKET 50-245 LER 87-042 REV 01
UPDATE ON FAILURE TO ESTABLISH A POST-ACCIDENT SAMPLING SYSTEM SURVEILLANCE.
EVENT DATE: 102787 REPORT DATE: 050988 NSSS: GE TYPE: BWR

(NSIC 209262) ON OCTOBER 27, 1987 AT 1530 HOURS, WITH THE PLANT OPERATING AT 100% POWER, UNIT 1 ENGINEERING WAS REVIEWING A RESPONSE TO A INFORMATION NOTICE (IE-86-60), TITLED UNANALYZED POST LOCA RELEASE PATHS. IT WAS DETERMINED THAT NO SURVEILLANCE EXISTED THAT TESTED THE POST ACCIDENT SAMPLING SYSTEM (PASS) AS REQUIRED BY TECHNICAL SPECIFICATION SECTION 6.13. SPECIAL TEST PROCEDURES TO VERIFY THE INTEGRITY OF THE SYSTEM WILL BE WRITTEN AND WILL BE PERFORMED. AN UPDATE TO THIS LER WILL BE SENT PRIOR TO MAY OF 1988. THE UNIT'S SURVEILLANCE PROCEDURES WILL BE UPDATED TO INCLUDE THE PROCEDURES MENTIONED ABOVE. THERE WERE NO SAFETY CONSEQUENCES AS A RESULT OF THIS EVENT. THE UNIT'S SURVEILLANCE PROCEDURES HAVE BEEN UPDATED TO REFLECT THE NECESSARY TESTING REQUIREMENTS.

[77] MILLSTONE 1 DOCKET 50-245 LER 88-004 REV 01
UPDATE ON POTENTIAL FOULING OF ECCS SUCTION STRAINERS.
EVENT DATE: 031888 REPORT DATE: 052788 NSSS: GE TYPE: BWR
VENDOR: CHICAGO BRIDGE AND IRON COMPANY

(NSIC 209376) ON MARCH 18, 1988, WHILE OPERATING AT 100% POWER (529 DEGREES

GUIDANCE ON CLEANING OF THE SCREEN WASH STRAINERS. THE OUT OF SERVICE PUMP HAS BEEN FIXED.

[80] MILLSTONE 3 DOCKET 50-423 LER 88-015
 REACTOR COOLANT SYSTEM UNIDENTIFIED LEAKAGE ACTION STATEMENT IMPROPERLY
 TERMINATED.
 EVENT DATE: 041588 REPORT DATE: 051688 NSSS: WE TYPE: PWR

(NSIC 209340) ON APRIL 15, 1988 AT 1500 HOURS IN MODE 3 (HOT STANDBY) 557 DEGREES AND 2250 PSIA, IT WAS DETERMINED THAT THE ACTION TAKEN TO TERMINATE A PREVIOUSLY DOCUMENTED UNIDENTIFIED LEAKAGE EVENT HAD BEEN IMPROPERLY PERFORMED. AT 1715 HOURS ON APRIL 14, THE ACTION STATEMENT FOR AN UNIDENTIFIED REACTOR COOLANT SYSTEM (RCS) LEAKRATE OF GREATER THAN 1 GALLON PER MINUTE (GPM) WAS ENTERED BASED ON THE INCREASED LEAKRATE OBSERVED BY VOLUME CONTROL TANK MAKE UP. AT 2107 HOURS ON APRIL 14, AFTER A LEAK SOURCE WAS IDENTIFIED AND ISOLATED, THE ACTION STATEMENT WAS EXITED BASED ON QUALITATIVE ASSESSMENT OF PLANT PARAMETERS BEING STEADY. FOLLOWING THE RESOLUTION OF COMPUTER PROBLEMS AND THE COMPLETION OF RCS SAMPLING, A LEAKAGE SURVEILLANCE PROGRAM WAS INITIATED AT 0900 HOURS ON APRIL 15, AT 1332 HOURS, THE LEAKRATE WAS DETERMINED TO BE 1.15 GPM. ROOT CAUSE OF THIS EVENT WAS PERSONNEL ERROR. THE DECISION WAS MADE TO TERMINATE THE UNIDENTIFIED LEAKAGE ACTION STATEMENT WITHOUT A DETAILED QUANTITATIVE ANALYSIS TO DETERMINE THE UNIDENTIFIED LEAKRATE. ALL OPERATIONS DEPARTMENT PERSONNEL HAVE BEEN SENT A MEMORANDUM STIPULATING THAT APPROVED SURVEILLANCES OR OTHER QUANTITATIVE METHODS, MUST BE USED TO DETERMINE WHENEVER RCS UNIDENTIFIED LEAKAGE HAS BEEN CORRECTED. THE APPLICABLE OPERATING PROCEDURE HAS BEEN CHANGED TO PROVIDE BETTER GUIDANCE ON MEASURING UNIDENTIFIED RCS LEAKAGE.

[81] MILLSTONE 3 DOCKET 50-423 LER 88-016
 MODE CHANGE WITH ACTION STATEMENT IN EFFECT DUE TO PERSONNEL ERROR.
 EVENT DATE: 042588 REPORT DATE: 052588 NSSS: WE TYPE: PWR

(NSIC 209435) AT 0333 HOURS ON APRIL 25, 1988, AT 350 DEGREES AND 495 PSIA, THE CONTROL SWITCHES FOR BOTH TRAINS OF MOTOR DRIVEN AUXILIARY FEEDWATER (MDAFW) PUMPS AND TRAIN A SUPPLEMENTARY LEAK COLLECTION AND RELEASE SYSTEM (SLCRS) FAN WERE LEFT IN PULL-TO-LOCK (PTL) DURING A CHANGE FROM MODE 4 (HOT SHUTDOWN) TO MODE 3 (HOT STANDBY). ROOT CAUSE FOR EACH EVENT WAS OPERATOR ERROR. IMMEDIATE CORRECTIVE ACTION BY THE OPERATOR WAS TO WALK DOWN THE MAIN CONTROL BOARDS TO ASSURE EQUIPMENT THAT WAS REQUIRED TO BE OPERABLE WAS OPERABLE. THE TECHNICAL SPECIFICATIONS WERE REVIEWED TO ENSURE ANY EQUIPMENT THAT WAS NOT REQUIRED TO BE OPERABLE IN MODE 3 WAS SPECIFICALLY COVERED BY A PROCEDURE STEP OR WAS VERIFIED TO BE OPERABLE. AS ACTION TO PREVENT RECURRENCE, ON-SHIFT PERSONNEL HAVE BEEN BRIEFED ON PROPER REVIEW OF EQUIPMENT STATUS PRIOR TO MODE CHANGES. GUIDANCE, IN THE FORM OF A NIGHT ORDER, HAS BEEN PROVIDED TO ENSURE THAT THE APPROPRIATE LOG ENTRIES ARE MADE WHENEVER EQUIPMENT IS PLACED IN PTL. THE PLANT HEATUP PROCEDURE WAS MODIFIED TO SEQUENCE THE AUXILIARY FEEDWATER SYSTEM ALIGNMENT FOR SYSTEM OPERABILITY AND TO REQUIRE A REVIEW OF BYPASS ANNUNCIATORS PRIOR TO CHANGING MODES. THE TRAIN A AND B MDAFW PUMPS WERE INOPERABLE FOR APPROXIMATELY 4 AND 6 HOURS RESPECTIVELY AND THE TRAIN A SLCRS FAN WAS INOPERABLE FOR ABOUT 9 HOURS, FROM THE TIME MODE 3 WAS ENTERED.

[82] MILLSTONE 3 DOCKET 50-423 LER 88-017
 FAILURE TO NOTE FLOW RATES ON AUXILIARY SAMPLE RIG DUE TO PERSONNEL AND
 INTERDEPARTMENTAL ERRORS.
 EVENT DATE: 042588 REPORT DATE: 052588 NSSS: WE TYPE: PWR

(NSIC 205478) ON APRIL 25, 1988, AT 2016 HOURS, AT 560 DEGREES F AND 2250 PSIA, IT WAS DISCOVERED THAT THE 4-HOUR SAMPLE FLOW RATE ESTIMATE HAD NOT BEEN PERFORMED AS REQUIRED BY TECH SPEC 3.3.3.10. AT 0752 ON APRIL 25, 1988, THE

TURBINE BUILDING VENTILATION VENT MONITOR WAS TAKEN OUT OF SERVICE TO PERFORM A SURVEILLANCE. DURING THE SURVEILLANCE, IT WAS DETERMINED THAT THE NOBLE GAS DETECTOR OF THE RADIATION MONITOR WAS NOT OPERATING PROPERLY. THE SHIFT SUPERVISOR (SS) DIRECTED CHEMISTRY PERSONNEL TO INSTALL THE AUXILIARY SAMPLE RIG AND TO TAKE SAMPLES AND FLOW RATES. CHEMISTRY TOOK THE REQUIRED SAMPLE, BUT DID NOT RECORD THE FLOW RATES SINCE THIS HAD PREVIOUSLY BEEN AN OPERATIONS DEPARTMENT RESPONSIBILITY. SINCE OPERATIONS WAS NEVER NOTIFIED THAT THE EVOLUTION WAS COMPLETED, THE INSTALLATION OF THE SAMPLE RIG WAS NEVER LOGGED. AT 2016 HOURS, THE SS INVESTIGATED A LOW SAMPLE FLOW ALARM AT THE RADIATION MONITOR PANEL. HE SUBSEQUENTLY VERIFIED THAT THE AUXILIARY SAMPLE RIG WAS IN PLACE AND BEGAN RECORDING THE REQUIRED FLOW ESTIMATES. ROOT CAUSE OF THIS EVENT IS HUMAN ERROR, MANIFESTED BY INADEQUATE COMMUNICATIONS WITHIN THE OPERATIONS DEPARTMENT AND WITH OTHER DEPARTMENTS. ACTION TO PREVENT RECURRENCE OF THIS EVENT IS TO REQUIRE WRITTEN COMMUNICATIONS BETWEEN DEPARTMENTS WHENEVER DIRECTING ANOTHER COMPANY.

[83] MONTICELLO DOCKET 50-263 LER 87-002 REV 01
 UPDATE ON SHUTDOWN COOLING HIGH SUCTION PRESSURE TRIP DUE TO MINOR PRESSURE
 TRANSIENT.
 EVENT DATE: 010887 REPORT DATE: 051688 NSSS: GE TYPE: BWR

(NSIC 209300) ON JANUARY 8, 1987 A TRIP OF THE RHR SHUTDOWN COOLING SUPPLY HIGH PRESSURE INTERLOCK OCCURRED WHILE PLACING THE SHUTDOWN COOLING MODE OF RHR IN SERVICE. THE TRIP RESULTED IN CLOSURE OF THE SHUTDOWN COOLING SUPPLY ISOLATION VALVES WHICH, IN TURN, CAUSED AN RHR PUMP TRIP DUE TO THE LOSS OF SUCTION PAIL INTERLOCK. THE CAUSE OF THE TRIP WAS BELIEVED TO BE A PRESSURE TRANSIENT WHICH TRIPPED THE INTERLOCK PRESSURE SWITCHES WHEN RHR FLOW WAS INITIATED TO THE VESSEL. THE SHUTDOWN COOLING SUPPLY AND RETURN LINES WERE FLUSHED AND SHUTDOWN COOLING WAS SUCCESSFULLY PLACED IN SERVICE. TESTING WAS PERFORMED THE NEXT TIME THAT RHR SHUTDOWN COOLING WAS PLACED IN SERVICE TO DETERMINE IF A SIGNIFICANT PRESSURE TRANSIENT OCCURS. THE TESTING DID NOT SHOW A SIGNIFICANT PRESSURE TRANSIENT. THE CAUSE OF THE EVENT IS BELIEVED TO BE A SPURIOUS ACTUATION OF THE PRESSURE SWITCH(S). THE TRIP LOGIC IS ARRANGED SO THAT EITHER OF THE TWO PRESSURE SWITCHES WILL INITIATE A TRIP.

[84] NINE MILE POINT 1 DOCKET 50-200 LER 88-003 REV 01
 UPDATE ON AUTOMATIC INITIATION OF REACTOR BUILDING EMERGENCY VENTILATION DUE TO
 PERSONNEL ERROR.
 EVENT DATE: 022288 REPORT DATE: 051688 NSSS: GE TYPE: BWR
 VENDOR: GENERAL ELECTRIC CO.

(NSIC 209309) REV 1 TO THIS LER IS BEING ISSUED TO CORRECT ITEM (5), THE EVENT DATE ON PAGE 1 OF THE LER FORM, FROM 02/28/88 TO 02/22/88. ON 2/22/88, WITH NMP UNIT 1 IN A REFUELING OUTAGE, INSTRUMENT AND CONTROL (I&C) TECHNICIANS WERE REPAIRING A JENCHED POWER SUPPLY FOR AN ENVIRONMENTAL AREA RADIATION MONITOR. DURING THEIR REPAIR OPERATION, INFORMATION REQUIRED TO COMPLETE THE REPAIRS WAS UNAVAILABLE IN THE VENDOR MANUAL. IN ORDER TO OBTAIN THE REQUIRED INFORMATION, IT WAS NECESSARY TO GET THE INFORMATION FROM AN IN-SERVICE POWER SUPPLY. UPON INSPECTION OF THE IN-SERVICE POWER SUPPLY, A WASHER FROM THE POWER SUPPLY HOUSING INADVERTENTLY FELL INTO THE CIRCUITRY, GROUNDING ONE OF THE CIRCUIT BOARD CAUSING AN OFF-SCALE HIGH RADIATION SIGNAL, AND THEREBY INITIATING THE REACTOR BUILDING EMERGENCY VENTILATION SYSTEM. THE ROOT CAUSE OF THIS EVENT WAS DETERMINED TO BE PERSONNEL ERROR WITH INSUFFICIENT VENDOR MANUAL DATA AVAILABLE AND METALLIC COMPONENT WASHERS AS CONTRIBUTING FACTORS. IMMEDIATE CORRECTIVE ACTION CONSISTED OF VERIFYING THAT PERSONNEL ERROR CAUSED THE EVENT, REPAIRING THE DAMAGED POWER SUPPLY AND RETURNING THE REACTOR BUILDING VENTILATION SYSTEM TO ITS NORMAL MODE OF OPERATION. ADDITIONAL CORRECTIVE ACTION INCLUDED GENERATING A STAT'ON WORK REQUEST TO LABEL THE POWER SUPPLIES AND A PROBLEM REPORT TO INVESTIGATING THE WASHER MATERIAL ON THE POWER SUPPLIES.

[85] NINE MILE POINT 1 DOCKET 50-220 LER 88-012
 FAILURE TO HYDROSTATICALLY TEST A PORTION OF THE ASME CLASS 1 PRESSURE BOUNDARY
 DUE TO PROCEDURAL ERROR.
 EVENT DATE: 041888 REPORT DATE: 051888 NSSS: GE TYPE: BWR

(NSIC 209310) ON APRIL 18, 1988, WHILE NINE MILE POINT UNIT 1 (NMP1) WAS IN COLD SHUTDOWN FOR REFUELING, IT WAS DISCOVERED THAT A PORTION OF THE ASME CLASS 1 PRESSURE BOUNDARY WAS NOT HYDROSTATICALLY TESTED IN 1986. ASME SECTION XI REQUIRES A HYDROSTATIC TEST OF THE PRESSURE BOUNDARY FOR CLASS 1 PIPING, PUMPS AND VALVES, AT OR NEAR THE END OF EACH INSPECTION (ISI) INTERVAL. THE FIRST TEN YEAR ISI INTERVAL WAS TO BE COMPLETED IN 1986. FAILURE TO COMPLETE TESTING IN ACCORDANCE WITH ASME SECTION XI CONSTITUTES A VIOLATION OF PLANT TECHNICAL SPECIFICATIONS. THE ROOT CAUSE OF THIS EVENT WAS PERSONNEL ERROR AS A RESULT OF AN ERROR IN THE HYDROSTATIC TEST PROCEDURE. CONTRIBUTING FACTORS WERE MISCOMMUNICATION AND LACK OF ATTENTION TO DETAIL. INITIAL CORRECTIVE ACTION WAS TO DOCUMENT THE EVENT VIA AN OCCURRENCE REPORT (OR). THE MISSED PORTION OF THE SYSTEM WILL BE HYDROSTATICALLY TESTED PRIOR TO STARTUP. LONG TERM CORRECTIVE ACTION INCLUDES INITIATING A LESSONS LEARNED TRANSMITTAL TO ADDRESS THE PERSONNEL ERROR AND CONTRIBUTING FACTORS, AND A REVIEW OF 1986 ISI RELATED HYDROSTATIC TEST PROCEDURES.

[86] NINE MILE POINT 1 DOCKET 50-220 LER 88-002
 FAILURE TO ESTABLISH A FIRE WATCH PATROL DUE TO A PERSONNEL ERROR RESULTING IN A
 TECHNICAL SPECIFICATION VIOLATION.
 EVENT DATE: 042788 REPORT DATE: 052688 NSSS: GE TYPE: BWR

(NSIC 209370) ON APRIL 27, 1988, AT 0830 HOURS, WITH NINE MILE POINT UNIT 1 (NMP1) SHUTDOWN AND THE CORE OFF LOADED, IT WAS REPORTED THAT THE TECH SPEC REQUIREMENT OF ESTABLISHING A 1 HOUR FIRE WATCH PATROL FOR THE TWO NONFUNCTIONAL FIRE BARRIER PENETRATIONS WAS NOT IMMEDIATELY ESTABLISHED. THE ROOT CAUSE OF THIS EVENT WAS DETERMINED TO BE A PERSONNEL ERROR DUE TO MISCOMMUNICATION. IMMEDIATE CORRECTIVE ACTIONS INCLUDED VERIFICATION OF DETECTION IN THE AFFECTED AREAS AND ESTABLISHING A FIRE WATCH PATROL FOR THE NONFUNCTIONAL PENETRATIONS, ESTABLISHING A FIRE WATCH PATROL ON ALL TECHNICAL SPECIFICATION RATED BARRIERS FOR AS LONG AS THE INSPECTION OF THESE BARRIERS BY THE ENGINEERING DEPARTMENT CONTINUES, COUNSELING OF THE PERSONNEL INVOLVED AND ISSUING A STATION SHIFT SUPERVISOR INSTRUCTION TO ENSURE THAT THE FIRE DEPARTMENT IS FULLY INFORMED ON ALL MATTERS RELATING TO THEM. ADDITIONAL CORRECTIVE ACTION WILL INCLUDE GENERATING A PROCEDURE EVALUATION REQUEST FOR THE OCCURRENCE REPORT PROCEDURE TO EVALUATE THE NEED FOR AFFECTED DEPARTMENT NOTIFICATION, AND ISSUING A LESSONS LEARNED TRANSMITTAL INSTRUCTING OPERATIONS PERSONNEL TO ENSURE THAT TECHNICAL SPECIFICATION REQUIREMENT ACTIONS ARE TAKEN.

[87] NINE MILE POINT 2 DOCKET 50-410 LER 88-021
 HIGH PRESSURE CORE SPRAY RELAYS FOUND TO BE IMPROPERLY DOCUMENTED FOR SAFETY
 RELATED USE DUE TO PERSONNEL ERROR.
 EVENT DATE: 031488 REPORT DATE: 052088 NSSS: GE TYPE: BWR

(NSIC 209336) ON MARCH 14, 1988 WITH THE PLANT IN COLD SHUTDOWN, IT WAS DISCOVERED THAT 17 RELAYS IN THE HIGH PRESSURE CORE SPRAY SYSTEM (CSH) SWITCHGEAR (2EGS*PNL028) MAY NOT BE ACCEPTABLE FOR NUCLEAR SAFETY RELATED APPLICATION. DURING A PREAUDIT REVIEW BY THE VENDOR ON MARCH 14, 1988, IT WAS DISCOVERED THAT THE ABOVE RELAYS WERE CONDITIONALLY RELEASED MARCH 24, 1981. PER THE DOCUMENTATION THEY REQUIRED DEDICATION OR REPLACEMENT WITH SAFETY RELATED COMPONENTS AT A FUTURE DATE. ON JANUARY 10, 1983, THE CONDITIONAL RELEASE WAS ERRONEOUSLY LIFTED VIA A "FIELD DISPOSITION INSTRUCTION". THIS EVENT IS BEING REPORTED ON A VOLUNTARY BASIS. IF THE RELAYS COULD NOT HAVE BEEN DEDICATED AS IS A SINGLE FAILURE WOULD HAVE RENDERED CSH INOPERABLE AND REPORTABLE PER 10CFR50.73(A)(2)(V). THE CAUSE OF THE EVENT IS VENDOR PERSONNEL

ERROR-INATTENTION TO DETAIL. THE CONDITIONAL RELEASE FOR THE SWITCHGEAR CONTAINING THE RELAYS WAS LIFTED INCORRECTLY. THE RELEASING DOCUMENT DID NOT ADDRESS THE RELAYS THAT WERE ON THE CONDITIONAL RELEASE. THE UNQUALIFIED RELAYS WERE DEDICATED PER THE REQUIREMENTS OF THE INITIAL RELEASE DOCUMENT. FIELD DEVIATION DISPOSITION REQUEST (FDDR) KGI-6262, WRITTEN MARCH 16, 1988, ADDRESSES THIS ISSUE. THE VENDOR PERFORMED A REVIEW OF ALL CONDITIONAL RELEASES ON THE NINE MILE POINT 2 PROJECT AND HAS VERIFIED THAT ALL CONDITIONAL RELEASES HAVE BEEN RESOLVED.

[88] NINE MILE POINT 2 DOCKET 50-410 LER 88-018
 TECHNICAL SPECIFICATION VIOLATION OCCURS AS A RESULT OF A MISSED LEAK RATE SURVEILLANCE DUE TO PERSONNEL ERROR.
 EVENT DATE: 040688 REPORT DATE: 050688 NSSS: GE TYPE: BWR

(NSIC 209285) ON 4/6/88 AT 0955 WITH THE REACTOR AT A POWER LEVEL OF APPROX. 100% RATED THERMAL CAPACITY, IT WAS DISCOVERED THAT NINE MILE POINT UNIT 2 (NMP2) WAS NOT IN COMPLIANCE WITH TFCH SPEC (TS) SECTIONS 3/4.6.1. SPECIFICALLY, IT WAS DETERMINED THAT A LEAK RATE SURVEILLANCE TEST FOR A PRIMARY CONTAINMENT PENETRATION WAS NOT PERFORMED IN A TIMELY MANNER AS REQUIRED BY TS SECTION 4.6.1.2.D. THEREFORE, THE NMP2 OPERATORS DECLARED THE PRIMARY CONTAINMENT (PC) TO BE INOPERABLE AND COMMENCED A REACTOR SHUTDOWN AS REQUIRED BY TS SECTION 3.6.1.1. THE LEAK RATE TEST WAS PERFORMED AND ABNORMAL PENETRATION LEAKAGE WAS IDENTIFIED; HOWEVER, IT WAS DETERMINED THAT THE PC INTEGRITY WAS STILL INTACT. AN UNUSUAL EVENT DECLARED AT 1105, WAS TERMINATED BY 1435 THAT SAME DAY WHEN PC INTEGRITY WAS VERIFIED. THE ROOT CAUSE FOR THIS EVENT IS A PERSONNEL ERROR. A SIGNIFICANT CONTRIBUTING FACTOR WAS A PROBLEM WITH THE PLANNING AND SCHEDULING (P&S) DEPARTMENT'S SURVEILLANCE TRACKING SYSTEM. THE CORRECTIVE ACTIONS FOR THIS EVENT ARE: THE ABNORMAL PENETRATION LEAKAGE WILL BE CORRECTED, THE P&S COMPUTERIZED SURVEILLANCE TRACKING SYSTEM HAS BEEN MODIFIED, THE INSTRUMENT AND CONTROL (I&C) DEPARTMENT HAS UPGRADED ITS OWN COMPUTERIZED SURVEILLANCE TRACKING SYSTEM, AND A SUMMARY OF THIS EVENT WILL BE INCLUDED IN THE LESSONS LEARNED BOOKS FOR DEPARTMENTS RESPONSIBLE FOR TS SURVEILLANCES.

[89] NINE MILE POINT 2 DOCKET 50-410 LER 88-020
 ENGINEERED SAFETY FEATURE ACTUATION CAUSED BY HIGH RADIATION SIGNALS DUE TO ELECTRICAL NOISE.
 EVENT DATE: 040788 REPORT DATE: 050488 NSSS: GE TYPE: BWR

(NSIC 209286) ON 4/7/88 AT 0952 HOURS AND AT 1026 HOURS WITH THE REACTOR AT APPROX. 100% POWER AND THE MODE SWITCH IN "RUN", NINE MILE POINT UNIT 2 (NMP2) EXPERIENCED ENGINEERED SAFETY FEATURE (ESF) ACTUATIONS. BOTH EVENTS CONSISTED OF A SECONDARY CONTAINMENT ISOLATION AND THE AUTOMATIC INITIATION OF THE STANDBY GAS TREATMENT SYSTEM (SBGTS), AN EMERGENCY RECIRCULATION UNIT COOLER, AND REACTOR BUILDING UNIT COOLERS. BOTH EVENTS OCCURRED WHILE ATTEMPTING TO PERFORM SURVEILLANCE PROCEDURE N2-OSP-HCS-SA001, "DBA HYDROGEN RECOMBINER FUNCTIONAL AND ELECTRICAL CONTINUITY TEST". THE ESF ACTUATIONS OCCURRED, AS DESIGNED, ON A SPURIOUS HIGH RADIATION SIGNAL. THE IMMEDIATE CAUSE OF THE SPURIOUS RADIATION SIGNAL HAS BEEN DETERMINED TO BE ELECTRICAL NOISE. THE NOISE WAS A RESULT OF "CHATTERING" AT THE CONTACTOR ASSOCIATED WITH RECOMBINER INLET VALVE 2HCS*MOV25B. 2HCS*MOV25B IS THROTTLED PER STEPS IN N2-OSP-HCS-SA001. THE CAUSE OF THE CONTACTOR "CHATTERING" HAS BEEN DETERMINED TO BE AN INCREASED TORQUE REQUIREMENT SINCE THE PREVIOUS TORQUE SWITCH SETTING.

[90] NINE MILE POINT 2 DOCKET 50-410 LER 88-020
 DESIGN RATED REACTOR CORE FLOW EXCEEDED DUE TO POOR ELECTRICAL CONNECTION RESULTS IN PLANT OPERATION IN AN UNANALYZED CONDITION.
 EVENT DATE: 041988 REPORT DATE: 051988 NSSS: GE TYPE: BWR
 VENDOR: BAILEY CONTROLS CO.

(NSIC 209337) ON 4/19/88 AT 0930 HRS WITH THE REACTOR AT APPROX 99% OF RATED THERMAL POWER, THE NINE MILE POINT UNIT 2 (NMP2) REACTOR WAS INADVERTENTLY OPERATED WITH GREATER THAN 100% OF RATED REACTOR CORE FLOW. OPERATIONS PERSONNEL, WHILE RAISING REACTOR POWER BY ADJUSTING REACTOR RECIRCULATION FLOW, OBSERVED THAT THE REACTOR CORE RECIRCULATION SYSTEM HAD EXCEEDED ITS FULL POWER DESIGN RATED FLOW OF 108.5 MILLION POUNDS/HOUR (MLB/HR). ACTUAL REACTOR RECIRCULATION FLOW WAS RECORDED BY THE GENERAL ELECTRIC TRANSIENT ANALYSIS RECORDING SYSTEM (GETARS) AT 109.984 MLB/HR. THIS PLACED THE UNIT IN A CONDITION NOT SPECIFICALLY ADDRESSED IN THE NMP2 FINAL SAFETY ANALYSIS REPORT (FSAR). THE ROOT CAUSE OF THIS EVENT WAS A POOR ELECTRICAL CONTACT BETWEEN THE SUMMER CARD AND ITS MATING CONNECTOR, IN THE REACTOR RECIRCULATION SYSTEM. THE REACTOR TOTAL CORE FLOW SIGNAL PASSES THROUGH THIS CARD. THIS CONDITION RESULTED IN AN ERRONEOUS FLOW INDICATION. IMMEDIATE CORRECTIVE ACTION TAKEN BY NIAGARA MOHAWK LICENSED OPERATORS WAS TO REDUCE CORE FLOW TO LESS THAN 100% OF RATED. ADDITIONAL CORRECTIVE ACTIONS INCLUDED REMOVAL OF THE SUMMER CARD AND CLEANING OF THE CONTACTS. UPON INSTALLATION OF THE CARD, OPERATIONS PERSONNEL COMPARED THE SUM OF THE INDIVIDUAL LOOP INDICATORS WITH THE TOTAL SIGNAL FLOW FROM GETARS AND VERIFIED THE PROPER OPERATION OF THE SUMMER CARD.

[91] NORTH ANNA 1 DOCKET 50-338 LER 87-010 REV 01
 UPDATE ON STEAM GENERATOR TUBE DEFECTS.
 EVENT DATE: 051487 REPORT DATE: 052488 NSSS: WE TYPE: PWR
 VENDOR: WESTINGHOUSE ELECTRIC CORP.

(NSIC 209375) DURING THE 1987 REFUELING OUTAGE ON UNIT 1, STANDARD EDDI CURRENT BOBBIN PROBE INSPECTIONS IN THE 'A', 'B', AND 'C' STEAM GENERATORS IDENTIFIED GREATER THAN ONE PERCENT OF THE INITIAL SAMPLE GROUP TO BE DEFECTIVE. ALL TUBES EXHIBITING: (1) CLEAR INDICATIONS OF BEING DEFECTIVE (I.E. GREATER THAN 40 PERCENT "THRU WALL" INDICATION), (2) "DISTORTED INDICATIONS" AT THE TUBE SUPPORT LOCATIONS, AND (3) INDICATIONS IN THE VICINITY OF THE TUBESHEET THAT WERE IDENTIFIED USING THE 8X1 PROBE AND CONFIRMED WITH THE ROTATING PANCAKE COIL PROBE, WERE REMOVED FROM SERVICE. THE DEFECTS IDENTIFIED IN THE STEAM GENERATORS ARE REPORTABLE PURSUANT TO 10CFR50.73(A)(2)(V)(C) AS REQUIRED BY TECHNICAL SPECIFICATION 4.4.5.5.C. IN ORDER TO FACILITATE DETERMINATION OF THE NATURE AND CAUSE OF THE TUBESHEET INDICATIONS, TWO TUBES WERE REMOVED FROM THE 'A' STEAM GENERATOR FOR FURTHER NONDESTRUCTIVE AND DESTRUCTIVE EXAMINATION. PRELIMINARY RESULTS OF THE EXAMINATIONS PERFORMED ON THE TWO TUBES REVEALED CIRCUMFERENTIAL PRESSURIZED WATER STRESS CORROSION CRACKING IN THE EXPANSION TRANSITION REGION OF BOTH TUBES AT THE TOP OF THE TUBESHEET. THE HEALTH AND SAFETY OF THE GENERAL PUBLIC WERE NOT AFFECTED DURING THIS EVENT.

[92] NORTH ANNA 1 DOCKET 50-338 LER 88-018
 SURVEILLANCE OF POST ACCIDENT CONTAINMENT PRESSURE TRANSMITTERS NOT PERFORMED.
 EVENT DATE: 040588 REPORT DATE: 050588 NSSS: WE TYPE: PWR
 OTHER UNITS INVOLVED: NORTH ANNA 2 (PWR)

(NSIC 209274) AT 1630 HOURS, ON 4/5/88, WITH UNITS 1 AND 2 AT 100 PERCENT POWER (MODE 1), IT WAS DISCOVERED THAT THE CHANNEL CHECK SURVEILLANCE REQUIREMENT FOR CONTAINMENT POST ACCIDENT PRESSURE INSTRUMENTS WERE NOT BEING PERFORMED. THE SURVEILLANCE REQUIREMENTS OF TECHNICAL SPECIFICATION 4.3.3.6 REQUIRES A CHANNEL CHECK AT LEAST ONCE PER 31 DAYS FOR THESE CHANNELS. THE CONTAINMENT WIDE RANGE POST ACCIDENT PRESSURE CHANNELS WERE INSTALLED IN MAY 1981 FOR UNIT 1 AND JULY 1981 FOR UNIT 2 IN ORDER TO COMPLY WITH THE REQUIREMENTS OF NUREG-0578 AND NUREG-0737. THIS EVENT IS REPORTABLE PURSUANT TO 10CFR50.73(A)(2)(I)(B). THE CAUSE OF THE MISSED SURVEILLANCES IS ATTRIBUTED TO THE FAILURE TO RECOGNIZE THAT THE MODIFICATION THAT INSTALLED THE CONTAINMENT WIDE RANGE PRESSURE TRANSMITTERS WAS IMPLEMENTED TO MEET THE REQUIREMENTS OF TECHNICAL SPECIFICATION 3.3.3.6 FOR WIDE RANGE POST ACCIDENT PRESSURE INSTRUMENTATION. AS AN IMMEDIATE CORRECTIVE ACTION, THE ACTION STATEMENT OF TECHNICAL SPECIFICATION 3.3.3.6 WAS ENTERED.

THERE WERE NO SAFETY IMPLICATIONS AS A RESULT OF THE EVENT. THE REQUIRED CHANNEL CALIBRATIONS WERE BEING PERFORMED IN ACCORDANCE WITH TECHNICAL SPECIFICATION REQUIREMENTS. THE HEALTH AND SAFETY OF THE GENERAL PUBLIC WERE NOT AFFECTED AT ANY TIME DURING THIS EVENT.

[93] NORTH ANNA 2 DOCKET 50-339 LER 88-003
INADVERTENT CONTAINMENT DEPRESSURIZATION SYSTEM ACTUATION DURING MAINTENANCE
ACTIVITIES.
EVENT DATE: 050488 REPORT DATE: 052588 NSSS: WE TYPE: PWR

(NSIC 209413) AT 1104 HOURS ON 5/4/87, WITH UNIT 2 AT 100% POWER, AN INADVERTENT PARTIAL TRIP "B" ENGINEERED SAFETY FEATURES (ESF) ACTUATION OF THE CONTAINMENT DEPRESSURIZATION SYSTEM OCCURRED. AS A RESULT OF PROMPT OPERATOR ACTION AND THE SPECIFIC EQUIPMENT CONFIGURATION, AN ACTUAL CONTAINMENT SPRAY DID NOT OCCUR. THIS EVENT IS REPORTABLE PURSUANT TO 10CFR50.73(A)(2)(I)(B) AND 10CFR50.73(A)(2)(IV). A FOUR HOUR REPORT WAS MADE IN ACCORDANCE WITH 10CFR50.72(B)(2)(II). THE ACTUATION OCCURRED WHEN A GROUND WAS INTRODUCED INTO THE SOLID STATE PROTECTION SYSTEM DURING VALVE MAINTENANCE. AS A CORRECTIVE ACTION, THE CONTROL ROOM OPERATORS VERIFIED THAT THE ACTUATION WAS SPURIOUS, PERFORMED THE NECESSARY ACTIONS TO ENABLE RESETTING THE ACTUATION SIGNAL, AND SUCCESSFULLY RESET THE ACTUATION SIGNAL. TO PREVENT RECURRENCE OF SIMILAR EVENTS, APPLICABLE PROCEDURES WILL BE REVIEWED AND REVISED AS NECESSARY TO INCLUDE ADDITIONAL CAUTIONS AND NOTES AND REQUIRE THE USE OF INSULATED TOOLS WHEN WORKING IN SWITCHES, BOXES, ETC. NO SIGNIFICANT SAFETY CONSEQUENCES RESULTED FROM THIS EVENT BECAUSE AN ACTUAL CONTAINMENT SPRAY DID NOT OCCUR. ALSO, EQUIPMENT ACTUATIONS WERE VERIFIED TO HAVE ACTUATED PER DESIGN AND WERE SUBSEQUENTLY RESTORED TO THEIR NORMAL CONFIGURATION. THE HEALTH AND SAFETY OF THE GENERAL PUBLIC WAS NOT AFFECTED AT ANY TIME DURING THIS EVENT.

[94] OYSTER CREEK DOCKET 50-219 LER 88-006
PREVIOUS MODIFICATION CAUSES FOUR ISOLATION CONDENSER PIPE BREAK SENSORS TO BE
OUT OF SPECIFICATION DURING SURVEILLANCE.
EVENT DATE: 032589 REPORT DATE: 041988 NSSS: GE TYPE: BWR
VENDOR: ITT-BARTON

(NSIC 208993) DURING A SURVEILLANCE TEST ON MARCH 25, 1986 AT 1300 HOURS, FOUR OF EIGHT ISOLATION CONDENSER PIPE BREAK SENSORS TRIP TESTED AT A DIFFERENTIAL PRESSURE GREATER THAN THE MAXIMUM ALLOWABLE TRIP SETPOINT SPECIFIED IN THE TECHNICAL SPECIFICATIONS. AT THE TIME OF THE OCCURRENCE THE PLANT WAS IN THE RUN MODE AT 100% POWER. THE CAUSE OF THE EVENT IS A COMBINATION OF A 1980 FIELD MODIFICATION ON THE SWITCHES AND VARIOUS SWITCH COMPONENT PROBLEMS. THE SAFETY SIGNIFICANCE IS MINIMAL DUE TO THE OPERABILITY OF OTHER PIPE BREAK SENSORS, AREA RADIATION MONITORS AND AREA TEMPERATURE MONITORS. IMMEDIATE CORRECTIVE ACTION WAS TAKEN TO ADJUST THE SWITCHES TO TRIP WITHIN TECHNICAL SPECIFICATION LIMITS. LONG TERM CORRECTIVE ACTION IS TO REPLACE UP TO FOUR REACTOR PROTECTION SYSTEM DIGITAL SENSORS DURING THE PLANT'S NEXT REFUELING OUTAGE (FOURTH QUARTER 1988), MONITOR THEIR PERFORMANCE OVER THE SUBSEQUENT OPERATING CYCLE, AND REPLACE THE ISOLATION CONDENSER PIPE BREAK SENSORS DURING THE FOLLOWING REFUELING OUTAGE PROVIDED THE OPERATION OF THE NEW SENSORS PROVES ACCEPTABLE.

[95] OYSTER CREEK DOCKET 50-219 LER 88-007
INADEQUATE SUPPORT OF REACTOR SAMPLE LINE DUE TO MISCOMMUNICATION OF TECHNICAL
DATA CAUSED BY PERSONNEL ERROR.
EVENT DATE: 041288 REPORT DATE: 051188 NSSS: GE TYPE: BWR

(NSIC 209307) ON APRIL 12, 1988 IT WAS DETERMINED THAT A REACTOR COOLANT SAMPLE LINE CONTAINING A CONTAINMENT ISOLATION VALVE WAS NOT ADEQUATELY SUPPORTED. THE DISCOVERY WAS MADE SEVERAL DAYS EARLIER BY CONTRACTOR PERSONNEL BUT A PRELIMINARY

EVALUATION SHOWED NO PROBLEM EXISTED. LATER, WHEN ADDITIONAL INFORMATION WAS OBTAINED IT WAS DETERMINED THAT THE VALVE WEIGHT WAS GREATER THAN THE LIMIT ESTABLISHED BY THE ANALYSIS. THE EVENT IS ATTRIBUTED TO PERSONNEL ERROR BECAUSE IN 1986 THE VALVE IN THE LINE WAS REPLACED WITH A VALVE APPROXIMATELY THREE (3) TIMES HEAVIER THAN THE ORIGINAL VALVE. WHEN THE WEIGHT INCREASE WAS ANALYZED THE INFORMATION WAS MISCOMMUNICATED ON THE ACTUAL ORIENTATION OF THE VALVE SO THE ANALYSIS WAS NOT ACCURATE. THE SAFETY SIGNIFICANCE OF THIS OCCURRENCE IS CONSIDERED MINIMAL BECAUSE PRESENT EVALUATIONS HAVE DETERMINED THAT NO PIPING FAILURES WOULD HAVE OCCURRED ALTHOUGH CODE ALLOWABLE STRESSES WOULD HAVE BEEN EXCEEDED IN A DESIGN BASIS SEISMIC EVENT. ADDITIONALLY, THE INSIDE CONTAINMENT ISOLATION VALVE WOULD HAVE REMAINED OPERABLE AND WOULD HAVE ISOLATED THE LINE. THE LINE WILL REMAIN ISOLATED UNTIL ADDITIONAL SUPPORTS ARE INSTALLED. THIS LER WILL BE DISTRIBUTED AS REQUIRED READING FOR PLANT ENGINEERING PERSONNEL.

[96] OYSTER CREEK DOCKET 50-219 LER 88-008
 STANDBY GAS INITIATION CAUSED BY PROCEDURAL NONCOMPLIANCE WHILE PLACING AUGMENTED OFFGAS SYSTEM IN SERVICE.
 EVENT DATE: 041488 REPORT DATE: 051388 NSSS: GE TYPE: BWR

(NSIC 209308) ON 4/14/88 AT 0941 HOURS, A REACTOR BUILDING ISOLATION AND STANDBY GAS TREATMENT SYSTEM AUTOMATIC INITIATION OCCURRED. THE REACTOR WAS OPERATING AT FULL POWER AT THE TIME. THE CAUSE OF THE EVENT WAS FAILURE TO DRAIN THE AUGMENTED OFFGAS (AOG) SYSTEM'S OFFGAS INLET LINE IN ACCORDANCE WITH THE SYSTEM OPERATING PROCEDURE. THIS CAUSED SYSTEM PRESSURE OSCILLATIONS WHICH EVENTUALLY FORCED RADIOACTIVE GASES PAST A DRAIN LINE SUMP WATER SEAL, INTO THE AREA UNDER THE PLANT'S VENTILATION STACK. THE SAFETY SIGNIFICANCE IS MINIMAL BECAUSE OF THE LIMITED DURATION OF THE RELEASE INTO THE STACK BASE AREA AND BECAUSE THE SAFETY SYSTEMS FUNCTIONED AS DESIGNED. IMMEDIATE CORRECTIVE ACTION TAKEN WAS TO ENTER THE PLANT'S EMERGENCY OPERATING PROCEDURES FOR SECONDARY CONTAINMENT CONTROL. THE OFFGAS INLET LINE WAS DRAINED BEFORE THE AOG SYSTEM WAS RETURNED TO SERVICE. THE AOG SYSTEM OPERATING PROCEDURE WILL BE REVISED TO DRAIN THE OFFGAS INLET LINE IMMEDIATELY BEFORE PLACING THE AOG SYSTEM IN SERVICE. THE DRAIN LINE SUMP WATER SEAL WILL BE EVALUATED FOR ADEQUACY AND MODIFIED IF NECESSARY. PERSONNEL INVOLVED IN THIS EVENT WILL RECEIVE COUNSELING ON THE IMPORTANCE OF PROPER TURNOVER AND STRICT PROCEDURAL COMPLIANCE. ADDITIONALLY, THIS REPORT WILL BE MADE REQUIRED READING FOR RADWASTE OPERATIONS PERSONNEL.

[97] PALISADES DOCKET 50-255 LER 88-006
 INADVERTENT MANUAL ACTUATION OF AUXILIARY FEEDWATER ACTUATION SYSTEM.
 EVENT DATE: 032788 REPORT DATE: 042688 NSSS: CE TYPE: PWR

(NSIC 209127) ON 3/27/88 AT 2225 AUX. FEEDWATER PUMP P-8A (BA;P) WAS INADVERTENTLY STARTED WHEN THE AUX. FEEDWATER ACTUATION SYSTEM (AFAS) WAS MANUALLY ACTUATED BY A MEMBER OF THE OPERATIONS DEPT. THE MANUAL ACTUATION OCCURRED WHILE THE OPERATOR WAS ATTEMPTING TO RESET ACTUATION CHANNEL ALARM LIGHTS. THE REACTOR WAS CRITICAL WITH THE PLANT OPERATING AT 100% OF RATED POWER WHEN THE ACTUATION OCCURRED. AT 1250 THE "C" SIGNAL CHANNEL SENSOR OF THE AFAS FAILED DUE TO A POWER SUPPLY TRIPPING WHICH RESULTED IN A LOSS OF POWER TO THE CABINET. THIS POWER FAILURE PROVIDED A TRIP SIGNAL INTO THE AFAS ACTUATION LOGIC. WHILE REVIEWING AFAS PANEL INDICATIONS AND IN ATTEMPTING TO RESET WHAT WAS THOUGHT TO BE AN IMPROPER INDICATION, AN ON-COMING OPERATOR DEPRESSED AN UNMARKED BUTTON BELOW THE ILLUMINATED INDICATOR. THIS ACTION PROVIDED A SECOND LOW LEVEL SIGNAL NECESSARY TO COMPLETE THE ACTUATION LOGIC AND STARTED P-8A. THE INADVERTENT ACTUATION HAS BEEN ATTRIBUTED TO INSUFFICIENT GUIDANCE BEING AVAILABLE IN ALARM AND RESPONSE PROCEDURES. ANOTHER CONTRIBUTING FACTOR TO THIS EVENT IS POOR LABELING OF COMPONENTS ON THE AFAS ACTUATION PANEL.

[98] PALO VERDE 1 DOCKET 50-528 LER 87-025 REV 02
 UPDATE ON MODIFICATIONS TO STEAM ISOLATION VALVES TO TURBINE DRIVEN AUXILIARY
 FEEDWATER PUMP RENDER PUMP INOPERABLE.
 EVENT DATE: 112787 REPORT DATE: 041288 NSSS: CE TYPE: PWR
 OTHER UNITS INVOLVED: PALO VERDE 2 (PWR)

(NSIC 08914) THIS IS A SUPPLEMENT TO LER 87-025-01, ON 11/27/87 AT APPROXIMATELY 0220 MST, WITH PALO VERDE UNIT 2 IN MODE 1 (POWER OPERATION) AT 100% POWER, THE TURBINE DRIVEN AUXILIARY FEEDWATER PUMP (BA)(P) DID NOT ACHIEVE RATED SPEED DURING THE MONTHLY OPERABILITY SURVEILLANCE TEST. AN INVESTIGATION FOUND THAT THE "OPEN" LIMIT SWITCH (SB)(33) SETPOINTS FOR THE "B" AND "A" TRAIN ISOLATION VALVES (SB)(JSV) WERE ADJUSTED ON OCTOBER 14 AND 15, 1987, RESPECTIVELY, TO PREVENT THE VALVE INTERNALS FROM IMPACTING ON THE BACKSEAT. THIS WAS DONE IN ACCORDANCE WITH AN APPROVED ENGINEERING EVALUATION WHICH DID NOT PROVIDE CORRESPONDING ADJUSTMENTS TO THE "RAMP UP" LIMIT SWITCHES (SB)(33), THEREFORE PREVENTING THE PUMP FROM ACHIEVING RATED SPEED. FOLLOWING THESE ADJUSTMENTS, THE PUMP WAS RETURNED TO OPERABLE STATUS, CONTRARY TO TECH SPEC 3.7.1.2. ONGOING INVESTIGATION DETERMINED THAT VALVES HAD BEEN RETURNED TO OPERABLE STATUS CONTRARY TO T.S. 3.6.3. AS IMMEDIATE CORRECTIVE ACTION THE LIMIT SWITCHES WERE READJUSTED, OPERABILITY TESTS CONDUCTED ON 11/27/87, AND THE INVESTIGATION EXPANDED TO INCLUDE UNITS 1 AND 3. PRELIMINARY EVALUATIONS IDENTIFIED THE ROOT CAUSE AS COGNITIVE PERSONNEL ERROR (UTILITY, LICENSED) IN THAT THE ENGINEERING EVALUATION DID NOT ADDRESS THE FULL IMPACT OF THE APPROVED MODIFICATION.

[99] PALO VERDE 1 DOCKET 50-528 LER 88-011
 REACTOR TRIP DUE TO PERSONNEL ERROR AND EQUIPMENT MALFUNCTION.
 EVENT DATE: 041988 REPORT DATE: 051888 NSSS: CE TYPE: PWR
 VENDOR: SOUTHERN STATES EQUIPMENT

(NSIC 209344) AT APPROXIMATELY 0148 MST ON APRIL 1-9, 1988, PALO VERDE UNIT 1 WAS IN MODE 1 (POWER OPERATION) AT 100% REACTOR (RCT) POWER WHEN THE UNIT EXPERIENCED A 100% LOAD REJECTION AND RESULTANT REACTOR POWER CUTBACK (RPCB). APPROXIMATELY 30 SECONDS AFTER THE RPCB, A REACTOR TRIP OCCURRED DUE TO A LOW DNBR TRIP FROM THE CORE PROTECTION CALCULATOR (CPC)(CPU). A CONTROL ROOM OPERATOR (UTILITY, LICENSED) INADVERTENTLY OPENED THE MOTOR OPERATED DISCONNECT (MOD) FOR UNIT 1 MAIN GENERATOR (GEN)(MOD PL-910). THIS INITIATED A LOAD REJECTION AND SUBSEQUENT GENERATOR TRIP AND TURBINE (TRB) TRIP RESULTING IN A RPCB. AN INTERLOCK BETWEEN MOD PL-910 AND THE ASSOCIATED 525 KV (FK) BREAKERS (BKR) AND MANUAL DISCONNECTS PL-916 AND PL-917 DID NOT FUNCTION. THIS ALLOWED MOD PL-910 TO OPEN INITIATING THE LOAD REJECTION. IMMEDIATE CORRECTIVE ACTION WAS TO REPAIR THE PERMISSIVE CONTACTS ON PL-916 AND PL-917 AND ENSURE THAT THE INTERLOCK WAS OPERABLE. FOR CORRECTIVE ACTION TO PREVENT RECURRENCE, THE INTERLOCK CIRCUIT WILL BE ELECTRICALLY CHECKED PERIODICALLY FOR PROPER OPERATION. AN ENGINEERING EVALUATION REQUEST HAS BEEN INITIATED FOR A REANALYSIS OF THE RPCB AND THE SOFTWARE/DATA FOR THE CPC'S. ALSO APPROPRIATE DISCIPLINARY ACTION WILL BE ADMINISTERED. NO PREVIOUS SIMILAR EVENTS HAVE BEEN REPORTED.

[100] PALO VERDE 1 DOCKET 50-528 LER 88-015
 REACTOR TRIP DUE TO TEST POWER SUPPLY FAILURE.
 EVENT DATE: 051288 REPORT DATE: 060688 NSSS: CE TYPE: PWR

(NSIC 209550) AT 1315 MST ON MAY 12, 1988, PALO VERDE UNIT 1 WAS IN MODE 1 (POWER OPERATION) AT APPROXIMATELY 91% POWER WHEN AN AUTOMATIC ACTUATION OF THE REACTOR (RCT)(AC) PROTECTION SYSTEM (RPS)(JC) OCCURRED. SURVEILLANCE TEST 36ST-9SB04 (PLANT PROTECTIVE SYSTEM (PPS)(JC) FUNCTIONAL TEST- RPS/ENGINEERED SAFETY FEATURE ACTUATION SYSTEMS (ESFAS)(JE)) WAS IN PROGRESS WHEN THE REACTOR (RCT)(AC) TRIP OCCURRED. PERFORMANCE OF 36ST-9SB04 INVOLVES A SEPARATE POWER SUPPLY (JX)(JC) UTILIZED ONLY DURING TESTING TO "HOLD" THE BISTABLE AND MATRIX RELAYS FROM

ACTUATION DURING THE TEST. THE POWER SUPPLY WAS FOUND TO BE VARYING IN AMPLITUDE INTERMITTENTLY WHICH WOULD CAUSE VARYING REMOVAL AND REINSTATEMENT OF THE BUCK AND BOOST VOLTAGE. THIS CAUSED THE TRIP OF THE "A" AND "D" REACTOR TRIP CIRCUIT BREAKERS. IMMEDIATE CORRECTIVE ACTION WAS TO REPLACE THE POWER SUPPLY WITH A PROPERLY OPERATING POWER SUPPLY. A PRECAUTION WAS ADDED TO 36ST-9SB04 TO ENSURE THAT THE TEST PERFORMER IS AWARE THAT THE POWER SUPPLY MAY EXHIBIT INSTABILITIES AS INDICATED BY LAMP "FLICKERING".

[101] PALO VERDE 2 DOCKET 50-529 LER 88-005 REV 02
 UPDATE ON INADVERTENT SAFETY INJECTION RESULTING FROM PERSONNEL ERROR.
 EVENT DATE: 022188 REPORT DATE: 060288 NSSS: CE TYPE: PWR
 VENDOR: BORG-WARNER CORP.
 GOULD INC.

(NSIC 209493) THIS IS A SUPPLEMENT TO LER 2-88-005-01. ON FEBRUARY 21, 1988, PALO VERDE UNIT 2 WAS IN MODE 5 (COLD SHUTDOWN) AT APPROXIMATELY 170 F AND 125 PSIA BEING COOLED-DOWN AND DEPRESSURIZED TO BEGIN A REFUELING OUTAGE. AT APPROXIMATELY 0719 MST AN INADVERTENT SAFETY INJECTION (JE) FROM THE SAFETY INJECTION TANKS (BP)(ACC) OCCURRED AS A RESULT OF LOW PRESSURIZER PRESSURE SIGNALS NOT BEING PROPERLY BYPASSED. THE SAFETY INJECTION WAS ACCOMPANIED BY A CONTAINMENT ISOLATION (BP)(JE) ENGINEERED SAFETY FEATURES (ESF) ACTUATION. THERE WERE NO OTHER ESF ACTUATIONS AND NONE WERE NECESSARY. DURING THE EVENT A HIGH PRESSURE SAFETY INJECTION (HPSI) VALVE (INV) DID NOT FULLY OPEN. ALL OTHER EQUIPMENT OPERATED PER D' SIGN. THE ROOT CAUSE OF THE EVENT WAS A COGNITIVE PERSONNEL ERROR ON THE PART OF UTILITY, LICENSED PERSONNEL. ADDITIONALLY DURING THE EVENT, THE HPSI LOOP INJECTION VALVE DID NOT OPEN DUE TO A BLOWN FUSE (FU). AS CORRECTIVE ACTION, APPROPRIATE DISCIPLINARY MEASURES WILL BE TAKEN. THE HPSI LOOP INJECTION VALVE WAS VERIFIED TO OPERATE PROPERLY AFTER REPLACING THE MALFUNCTIONING FUSE. THE CAUSE OF THE FUSE OPENING COULD NOT BE DETERMINED. FURTHER TESTING WAS CONDUCTED AND IT WAS DETERMINED THAT THE FUSE FAILURE WAS RANDOM AND THAT THE EXISTING FUSE SPECIFICATION IS ADEQUATE. THERE HAVE BEEN NO PREVIOUS SIMILAR OCCURRENCES.

[102] PALO VERDE 2 DOCKET 50-529 LER 88-010
 SURVEILLANCE INTERVAL EXCEEDED FOR PLANT VENT MONITORS.
 EVENT DATE: 040688 REPORT DATE: 051688 NSSS: CE TYPE: PWR

(NSIC 209345) AT APPROXIMATELY 0900 MST, ON APRIL 15, 1988, PALO VERDE UNIT 2 WAS IN MODE (REFUELING) WHEN CHEMISTRY PERSONNEL (UTILITY AND CONTRACTOR, NON-LICENSED) DETERMINED THAT THE ALLOWABLE SURVEILLANCE TEST INTERVAL HAD BEEN EXCEEDED FOR THE PLANT VENT SYSTEM MONITORS (RU-143 AND RU-144)(ALARM). SUBSEQUENT TO THE DISCOVERY THAT THE SURVEILLANCE TEST INTERVAL HAD BEEN EXCEEDED, THE S.T. WAS SATISFACTORILY PERFORMED ON APRIL 15, 1988 AT APPROXIMATELY 0946 MST FOR THE LOW RANGE MONITOR (RU-143) AND ON APRIL 16, 1988 AT APPROXIMATELY 1015 MST FOR THE HIGH RANGE MONITOR (RU-144). THE ROOT CAUSE OF THE EVENT WAS A COGNITIVE PERSONNEL ERROR BY A CHEMISTRY TECHNICIAN (CONTRACTOR, NON-LICENSED) TO COMPLETE THE S.T. WITHIN THE ALLOWABLE INTERVAL. THE TECHNICIAN MISINTERPRETED THE REQUIREMENT TO PERFORM THE S.T. ON A "DAILY" (I.E., ONCE PER CALENDAR DAY) BASIS VICE "ONCE PER 24 HOURS". AS IMMEDIATE CORRECTIVE ACTION, THE APPROPRIATE S.T. ON PLANT VENT SYSTEM MONITOR WAS SATISFACTORILY COMPLETED AT 0946 MST ON APRIL 15, 1988. THE CORRECTIVE ACTION TO PREVENT RECCURRENCE WAS A CHANGE TO S.T. (75ST-92207) TO CHANGE THE TERMINOLOGY TO BE CONSISTENT WITH THE TECHNICAL SPECIFICATION (T.S.) AND A REVIEW OF RADIOACTIVE EFFLUENT S.T.S TO ENSURE THAT THE REQUIREMENTS OF THE T.S. ARE CLEARLY AND EXPLICITLY IMPLEMENTED. NO SIMILAR EVENTS HAVE BEEN REPORTED.

[103] PALO VERDE 2 DOCKET 50-529 LER 88-007
 FUEL BUILDING EXHAUST VENTILATION ACTUATION DUE TO RADIATION MONITOR MALFUNCTION.
 EVENT DATE: 051188 REPORT DATE: 060888 NSSS: CE TYPE: PWR
 VENDOR: KAMAN SCIENCES CORP.

(NSIC 209551) ON MAY 11, 1988 AT APPROXIMATELY 1945 MST, PALO VERDE UNIT 2 WAS IN MODE 6 (REFUELING) WHEN THE LOW RANGE FUEL BUILDING EXHAUST VENTILATION MONITOR SPURIOUSLY ACTUATED THE FUEL BUILDING AND CONTROL ROOM ESSENTIAL VENTILATION SYSTEMS. THE ACTUATION OCCURRED ON THE "B" TRAIN AND CROSS-TRIPPED ON THE "A" TRAIN AS EXPECTED. THE INITIAL TROUBLESHOOTING REVEALED A LOCKUP OF THE MONITOR'S MICROPROCESSOR. PREVIOUS LOCKUPS OF SIMILAR MICROPROCESSORS WERE CORRECTED BY RESEATING THE MICROPROCESSOR BOARD; THEREFORE, THE CONTACTS ON THE MICROPROCESSOR BOARD WERE CLEANED AND THE BOARD WAS RESEATED, TESTED, AND RESTORED TO SERVICE. SUBSEQUENTLY, THE MONITOR INTERMITTENTLY SPIKED AND WAS TAKEN OUT OF SERVICE. ADDITIONAL TROUBLESHOOTING REVEALED AN INTERMITTENT MALFUNCTION OF THE THE SYSTEM BOARD WHICH CAUSED A SPURIOUS ACTUATION AND LOCK UP OF THE MICROPROCESSOR. AS IMMEDIATE CORRECTIVE ACTION, THE SYSTEM BOARD WAS REPLACED AND THE MONITOR WAS RESTORED TO SERVICE. AS CORRECTIVE ACTION TO PREVENT RECURRENCE, ADDITIONAL TESTING OF THE SYSTEM BOARD IS BEING CONDUCTED. IF ADDITIONAL INFORMATION IS DISCOVERED CONCERNING THE MALFUNCTION OF THE SYSTEM BOARD, A SUPPLEMENT TO THIS REPORT WILL BE ISSUED. NO SIMILAR EVENTS HAVE OCCURRED.

[104] PALO VERDE 3 DOCKET 50-530 LER 88-002 REV 01
 UPDATE ON ASME SURVEILLANCE INTERVAL EXCEEDED FOR CONTAINMENT ISOLATION VALVE.
 EVENT DATE: 010988 REPORT DATE: 053188 NSSS: CE TYPE: PWR

(NSIC 209446) ON MARCH 24, 1988 PALO VERDE UNIT 3 WAS IN MODE 1 (POWER OPERATION) AT 100 PERCENT POWER WHEN IT WAS DISCOVERED THAT SURVEILLANCE TESTING HAD NOT BEEN CONDUCTED WITHIN THE ALLOWABLE TIME INTERVAL FOR A CONTAINMENT ISOLATION VALVE FROM THE CONTAINMENT RADWASTE SUMP (WK). ON DECEMBER 1, 1987 SURVEILLANCE TESTING HAD BEEN CONDUCTED ON THE VALVE IN ACCORDANCE WITH TECHNICAL SPECIFICATION 4.0.5 WHICH REQUIRES TESTING IN ACCORDANCE WITH SECTION XI OF THE ASME BOILER AND PRESSURE VESSEL CODE. THE VALVE MET THE REQUIRED ACCEPTANCE CRITERIA; HOWEVER, THE MEASURED STROKE TIME INCREASED BY MORE THAN 50% FROM THE PREVIOUS TEST. THE VALVE IS REQUIRED TO BE TESTED ONCE PER 3 MONTHS; HOWEVER, WHEN STROKE TIMES INCREASE BY 50% OR MORE RELATIVE TO THE PREVIOUS TEST, ASME SECTION XI REQUIRES THE TESTING FREQUENCY TO BE ADJUSTED TO A MONTHLY INTERVAL. THE TESTING SCHEDULE WAS NOT MODIFIED TO MEET THE MONTHLY SURVEILLANCE INTERVAL FOR THE VALVE. ON JANUARY 9, 1988 THE MODIFIED SURVEILLANCE INTERVAL WAS EXCEEDED. THE ROOT CAUSE OF THE EVENT WAS EVALUATED TO BE A COGNITIVE PERSONNEL ERROR BY A TECHNICIAN (UTILITY, NON-LICENSED) RESPONSIBLE FOR TRACKING THE COMPLETED TESTS. TO PREVENT RECURRENCE THE INDIVIDUAL WILL RECEIVE APPROPRIATE COUNSELING AND/OR DISCIPLINARY ACTION. A PREVIOUS SIMILAR EVENT OCCURRED AS DESCRIBED IN LER 1-87-015-00.

[105] PEACH BOTTOM 2 DOCKET 50-277 LER 87-005 REV 01
 UPDATE ON EXCEED THE ALLOWABLE CONTAINMENT LEAKAGE LIMIT DUE TO PERSONNEL ERRORS, PROCEDURAL DEFICIENCIES, AND FOREIGN MATERIAL IN VALVE SEATS.
 EVENT DATE: 040787 REPORT DATE: 052388 NSSS: GE TYPE: BWR
 VENDOR: ANCHOR/DARLING VALVE CO.

(NSIC 209367) ON APRIL 7, 1987, WITH UNIT 2 IN THE SHUTDOWN CONDITION FOR REFUELING, THE INBOARD AND OUTBOARD MAIN STEAM LINE DRAIN ISOLATION VALVES, WHICH ARE SUBJECT TO LOCAL LEAK RATE TESTS (LLRT) AS SPECIFIED IN 10 CFR 50, APPENDIX J, HAD UNSATISFACTORY TEST RESULTS BECAUSE NO "AS-FOUND" LEAKAGE RATES WERE DETERMINED FOR THE PENETRATION FROM A VALID TEST. THEREFORE, IT MUST BE ASSUMED THAT THE LEAKAGE RATE THROUGH THESE VALVES WOULD HAVE EXCEEDED THE TYPE A TEST LIMIT, CONSTITUTING A FAILURE OF THE "AS-FOUND" INTEGRATED LEAK RATE TEST. THE

CAUSE OF THE VALVES' LOCAL LEAK RATE TEST FAILURE WAS DETERMINED TO BE FINE PARTICLES IN THE VALVE SEATS RESULTING FROM PREVIOUS REPAIRS TO THE 80B MAIN STEAM ISOLATION VALVE. AN "AS FOUND" LLRT WAS NOT POSSIBLE FOR THE OUTBOARD VALVE DUE TO DAMAGE CAUSED BY ITS OPERATION WHEN THE VALVE MOTOR LEADS WERE INADVERTENTLY REVERSED FOLLOWING MAINTENANCE ACTIVITIES. THE CONSEQUENCES OF THE EVENT WERE MINIMAL BECAUSE THE OUTBOARD VALVE WAS AN EFFECTIVE PRESSURE BOUNDARY DURING THE MAIN STEAM ISOLATION VALVE LLRT, CONDUCTED ON MARCH 14, 1987. THEREFORE, EXCESS LEAKAGE CONDITIONS PROBABLY OCCURRED DURING ACTIVITIES BETWEEN SHUTDOWN FOR REFUELING AND LOCAL LEAK RATE TESTING.

[106] PEACH BOTTOM 2 DOCKET 50-277 LER 88-007
TECH SPEC FIRE BARRIER DEFICIENCIES AND FAILURE TO REPORT SOME DEFICIENCIES
WITHIN 30 DAYS DUE TO INADEQUATE CONTROLS.
EVENT DATE: 101587 REPORT DATE: 051688 NSSS: GE TYPE: BWR
OTHER UNITS INVOLVED: PEACH BOTTOM 3 (BWR)

(NSIC 209355) ON 10/15/87 IT WAS DETERMINED THAT SEVERAL FIRE BARRIERS IN THE TURBINE BUILDING AND THE RADWASTE BUILDING HAD GAPS FILLED WITH UNQUALIFIED FILL MATERIAL. THE CABLE SPREADING ROOM, AS WELL AS OTHER ROOMS, IS AFFECTED. THIS CONDITION WAS NOT REPORTED WITHIN 30 DAYS IN ACCORDANCE WITH 10 CFR 50.73 AS A RESULT OF INADEQUATE PROGRAMMATIC CONTROLS TO ENSURE THAT DEFICIENT CONDITIONS ARE EVALUATED FOR REPORTABILITY. ON 4/15/88 A HOLE (3 IN. DIA.) IN THE FLOOR (A FIRE BARRIER) OF THE CABLE SPREADING ROOM WAS DISCOVERED. A PANEL WHICH CONTAINS ANNUNCIATOR RELATED CIRCUITRY RESTS ON THIS HOLE. THESE CONDITIONS ARE REPORTABLE BECAUSE THEY VIOLATED THE TECH SPEC REQUIREMENT FOR FUNCTIONAL FIRE BARRIERS. FIRE WATCHES WERE ESTABLISHED OR VERIFIED TO ALREADY BE IN PLACE TO COMPENSATE FOR EACH OF THESE DEFICIENT BARRIERS WITHIN ONE HOUR OF DISCOVERY IN ACCORDANCE WITH THE TECH SPECS. THE HOLE IN THE CABLE SPREADING ROOM FLOOR WAS REPAIRED ON 4/25/88 TO SATISFY THE 3-HOUR FIRE RATING REQUIREMENT. A MODIFICATION HAS BEEN INITIATED TO UPGRADE THE FILL MATERIAL IN THE FIRE BARRIER SEISMIC GAPS. THIS MODIFICATION WILL BE COMPLETED BY AUGUST 1988 ON UNIT 2 AND PRIOR TO RESTART ON UNIT 3. IMPLEMENTATION OF A NEW EXPANDED PROCESS FOR IDENTIFYING AND DISPOSITIONING POTENTIALLY REPORTABLE ITEMS IS BEING IMPLEMENTED TO ENSURE COMPLIANCE WITH REPORTABILITY REQUIREMENTS.

[107] PEACH BOTTOM 2 DOCKET 50-277 LER 87- REV 01
UPDATE ON ACTUATION OF PRIMARY CONTAINMENT ISOLATION SYSTEM RESULTING DURING AN
INTERRUPTION IN OFFSITE POWER.
EVENT DATE: 123087 REPORT DATE: 042988 NSSS: GE TYPE: BWR
OTHER UNITS INVOLVED: PEACH BOTTOM 3 (BWR)
VENDOR: AGASTAT RELAY CO.

(NSIC 209260) AT 0910 HOURS ON DECEMBER 30, 1987, A PARTIAL LOSS OF OFFSITE POWER INITIATED THE ACTUATION OF THE PRIMARY CONTAINMENT ISOLATION SYSTEM (PCIS) OF BOTH UNITS 2 AND 3. THE UNEXPECTED ACTUATION OF AN ENGINEERED SAFETY FEATURE, THE PCIS, MAKES THIS EVENT REPORTABLE. OFFSITE POWER WAS INTERRUPTED WHEN A CRANE MADE CONTACT WITH AN ENERGIZED TRANSMISSION LINE MAINTAINED BY ANOTHER UTILITY. THE LOSS OF POWER FROM THIS LINE RESULTED IN A FAST TRANSFER OF FOUR OF THE EIGHT 4KV BUSES TO THE ALTERNATE SOURCE OF OFFSITE POWER. THE PCIS AND FAST TRANSFER FUNCTIONED AS DESIGNED AND THE DIESEL GENERATORS WERE AVAILABLE, BUT UNCHALLENGED. THE "2A" REACTOR PROTECTION SYSTEM MOTOR GENERATOR (RPS M/G) SET TRIPPED, RESULTING IN PCIS GROUP III AND RBVS INBOARD ISOLATIONS AND A HALF-SCRAM SIGNAL TO UNIT 2. NO CONTROL ROD MOTION OCCURRED, AND THERE WERE NO ADVERSE CONSEQUENCES AS A RESULT OF THIS EVENT. PECO'S INVESTIGATION SHOWS THAT THE RPS M/G SET TRIP WAS CAUSED BY THE FAILURE OF THE TIME DELAY RELAY (AGASTAT MODEL #7022AD). THE RELAY FAILURE IS ATTRIBUTED TO AGE. THESE RELAYS HAVE BEEN ADDED TO THE PREVENTIVE MAINTENANCE PROGRAM.

[108] PEACH BOTTOM 2 DOCKET 50-277 LER 88-005 REV 01
 UPDATE ON FAILURE OF CONTROL PANELS TO MEET ORIGINAL SEISMIC QUALIFICATIONS DUE
 TO WELDING INSTALLATION ERROR.
 EVENT DATE: 030388 REPORT DATE: 051088 NSSS: GE TYPE: BWR
 OTHER UNITS INVOLVED: PEACH BOTTOM 3 (BWR)

(NSIC 209266) ON 3/3/88 WITH UNIT 2 IN COLD SHUTDOWN AND UNIT 3 IN THE REFUELING
 MODE WITH THE CORE OFFLOADED, IT WAS CONFIRMED THAT THE AS-BUILT ANCHORAGE
 CONFIGURATIONS OF THE UNIT 2 AND 3 MAIN CONTROL ROOM PANELS DO NOT CONFORM WITH
 THE ORIGINAL INSTALLATION REQUIREMENTS, AND, THEREFORE, MAY NOT BE SUFFICIENT TO
 WITHSTAND LOADS DUE TO PEAK SEISMIC CONDITIONS. THE INVESTIGATION WAS CONTINUED
 AND ON APRIL 18, 1988, CABLE SPREADING ROOM PANELS WERE ALSO FOUND NOT TO CONFORM
 WITH THE ORIGINAL DESIGN DETAIL. THE CAUSE OF THIS DEFICIENCY WAS ORIGINAL
 INSTALLATION ERROR DURING ORIGINAL CONSTRUCTION OF THE UNITS IN THE 1970'S.
 DETAILS FOR CONTROL PANEL WELDING WERE PROVIDED ON THE ORIGINAL DESIGN DRAWINGS,
 BUT WERE NOT FOLLOWED. CORRECTIVE ACTIONS ARE TO WELD THE BASE CHANNEL OF EACH
 PANEL TO THE FLOOR EMBED ON THE OUTSIDE OF THE PANEL OR BOLT THE PANELS TO THE
 CONCRETE FLOOR WHEN THE CONCRETE EMBED IS NOT PRESENT. THIS EFFORT WILL BE
 COMPLETED PRIOR TO RESTART OF EITHER UNIT. THE REMAINING SAFETY RELATED
 FLOOR-MOUNTED PANELS IN BOTH UNITS WILL BE INSPECTED FOR VERIFICATION OF ADEQUATE
 ANCHORAGE. THERE WERE NO ACTUAL ADVERSE SAFETY CONSEQUENCES AS A RESULT OF THE
 EVENT. UNDER THE CONSERVATIVE SCENARIO OF TAKING NO CREDIT FOR EXISTING WELDS,
 CONTINUED OPERATION OF EQUIPMENT ON THE DEFICIENT PANELS COULD NOT BE ASSURED
 DURING A DESIGN BASIS EARTHQUAKE.

[109] PEACH BOTTOM 2 DOCKET 50-277 LER 88-001
 TWO BLOWN FUSES RENDERED LEAST ONE OR MORE INDEPENDENT TRAINS OF MULTIPLE
 ENGINEERED SAFETY FEATURES INOPERABLE.
 EVENT DATE: 042888 REPORT DATE: 052688 NSSS: GE TYPE: BWR

(NSIC 209389) AT 0945 HOURS ON APRIL 28, 1988 DURING THE PRELIMINARY CHECKOUT OF
 THE 'A' CHANNEL CORE SPRAY LOGIC, A FIELD ENGINEER DISCOVERED TWO BLOWN FUSES.
 THE BLOWN FUSES RENDERED AT LEAST ONE INDEPENDENT TRAIN OF SEVERAL ENGINEERED
 SAFETY FEATURES INOPERABLE, THEREBY INVOKING THE REPORTING REQUIREMENTS OF 10 CFR
 50.73(A)(2)(VII). THE FUSES WERE REPLACED AT 1100 HOURS. PECO HAS INITIATED A
 PHYSICAL INSPECTION OF THE FUSES TO DETERMINE THE FAILURE MODE. THE CONSEQUENCES
 OF THE BLOWN FUSES ARE MINIMAL. SINCE UNIT 2 WAS IN THE COLD SHUTDOWN CONDITION,
 THE HIGH PRESSURE SAFETY SYSTEMS WERE NOT REQUIRED TO BE OPERABLE AND THE
 REDUNDANT LOW PRESSURE SYSTEM TRAINS WERE AVAILABLE. NO ESF SYSTEMS ACTUATED AS A
 RESULT OF THIS EVENT.

[110] PERRY 1 DOCKET 50-440 LER 88-012
 IMPROPER D.C. BUS TRANSFER DUE TO OPERATING ERROR RESULTS IN A COMPLETE LOSS OF
 FEEDWATER AND A REACTOR SCRAM ON LOW REACTOR WATER LEVEL.
 EVENT DATE: 042788 REPORT DATE: 052788 NSSS: GE TYPE: BWR

(NSIC 209479) 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
 FAMILIARITY 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.

[111] PERRY 1 DOCKET 50-440 LER 88-013
 FLOW INDICATION INACCURACY COUPLED WITH OVERSENSITIVE FLOW CONTROL VALVES RESULT
 IN INDICATED HIGH DIFFERENTIAL FLOW AND REACTOR WATER CLEANUP SYSTEM ISOLATION.
 EVENT DATE: 042788 REPORT DATE: 052788 NSSS: GE TYPE: BWR

(NSIC 209438) ON APRIL 27, 1988 AT 2248, A REACTOR WATER CLEANUP (RWCU) SYSTEM CONTAINMENT ISOLATION OCCURRED DUE TO INDICATED HIGH DIFFERENTIAL FLOW. THE ISOLATION OCCURRED DURING AN ATTEMPT TO RESTART THE SYSTEM FOLLOWING REACTOR SCRAM AND BALANCE OF PLANT ISOLATION ON LOW REACTOR WATER LEVEL (REFERENCE LER 88012). IN RESPONSE TO THE ISOLATION, PLANT OPERATORS VERIFIED NO ACTUAL SYSTEM LEAKAGE EXISTED AND RETURNED THE RWCU SYSTEM TO SERVICE AT 2253. AS A RESULT OF THIS AND PREVIOUS SIMILAR EVENTS, AN INCREASE OF THE DIFFERENTIAL FLOW TRIP SETPOINT AND/OR TIME DELAY HAS BEEN UNDER EVALUATION TO ALLOW ADDITIONAL OPERATING MARGIN FOR THE INDICATED RWCU DIFFERENTIAL FLOW. ADDITIONALLY, AN ENGINEERING DESIGN CHANGE TO REPLACE THE RWCU FLOW CONTROL VALVES HAD PREVIOUSLY BEEN INITIATED. HOWEVER, DUE TO OPERATIONAL CONSTRAINTS, THIS CHANGE IS NOT EXPECTED TO BE IMPLEMENTED UNTIL THE FIRST REFUELING OUTAGE.

[112] PERRY 1 DOCKET 50-440 LER 88-014
 HIGH REACTOR VESSEL LEVEL FOLLOWING OPENING OF MAIN STEAM ISOLATION VALVES
 RESULTS IN REACTOR PROTECTION SYSTEM ACTUATION DUE TO FAULTY RELAY.
 EVENT DATE: 042888 REPORT DATE: 052788 NSSS: GE TYPE: BWR
 VENDOR: AMERACE CORP.

(NSIC 209439) ON APRIL 28, 1988 AT 1605 A REACTOR PROTECTION SYSTEM (RPS) ACTUATION OCCURRED ON REACTOR VESSEL HIGH LEVEL (LEVEL 8, +219.5 INCHES ABOVE TOP OF ACTIVE FUEL) DUE TO A FAULTY BYPASS RELAY IN RPS DIVISION I CHANNEL A. DIVISION II RPS WAS ALREADY IN A TRIPPED CONDITION FOR THE PERFORMANCE OF NEUTRON MONITORING INSTRUMENTATION SURVEILLANCES. THE MAIN STEAM ISOLATION VALVES WERE OPENED RESULTING IN REACTOR VESSEL LEVEL SWELL ABOVE THE HIGH LEVEL RPS TRIP SETPOINT. ALTHOUGH THE LEVEL 8 TRIP SHOULD HAVE BEEN BYPASSED IN THIS OPERATIONAL CONDITION, RPS DIVISION I CHANNEL A TRIPPED CAUSING A FULL RPS ACTUATION. RPS WAS RESET WHEN REACTOR VESSEL LEVEL DECREASED BELOW THE RPS HIGH LEVEL TRIP SETPOINT. INITIAL TROUBLESHOOTING AND BENCH TESTS DETERMINED THIS EVENT WAS CAUSED BY A FAILURE OF CONTACTS TO CLOSE IN THE BYPASS RELAY FOR RPS CHANNEL A HIGH REACTOR VESSEL LEVEL. IN ORDER TO PREVENT RECURRENCE THE RELAY HAS BEEN REPLACED AND THE NEW RELAY FUNCTIONALLY TESTED. THE OLD RELAY IS BEING RETURNED TO THE MANUFACTURER FOR CONFIRMATORY FAILURE ANALYSIS.

[113] PERRY 1 DOCKET 50-440 LER 88-015
 UNEXPECTED BYPASS VALVE OPENING DURING REACTOR STARTUP DUE TO PROCEDURAL
 DEFICIENCY RESULTS IN A LEVEL 3 REACTOR SCRAM.
 EVENT DATE: 043088 REPORT DATE: 052788 NSSS: GE TYPE: BWR

(NSIC 209440) ON APRIL 30, 1988 AT 1754, DURING PLANT STARTUP A REACTOR SCRAM OCCURRED DUE TO A REACTOR WATER LEVEL OF LESS THAN LEVEL 3 (+177.7 INCHES ABOVE TOP OF ACTIVE FUEL). THIS EVENT OCCURRED DURING A PLANT STARTUP WHEN THE STEAM BYPASS VALVES OPENED UNEXPECTEDLY UPON OPENING OF THE B MAIN STEAM ISOLATION VALVE (MSIV) RESULTING IN THE LEVEL TRANSIENT. THE ROOT CAUSE OF THIS EVENT WAS A PROCEDURAL DEFICIENCY. THE OPERATING PROCEDURES DID NOT ADEQUATELY ADDRESS THE INTERACTION OR PROVIDE ADEQUATE SETPOINT MARGIN FOR THE STEAM BYPASS AND PRESSURE REGULATING SYSTEM WHEN OPENING MSIVS. AN ADDITIONAL CONCERN ASSOCIATED WITH THIS EVENT WAS THAT THE STEAM BYPASS VALVE OPEN ALARM AND ANNUNCIATOR WERE NOT NOTICED BY THE CONTROL ROOM OPERATORS. CORRECTIVE ACTIONS TO PREVENT RECURRENCE INCLUDE: A REVISION TO THE OPERATING PROCEDURES TO ENSURE THAT THE BYPASS SYSTEM DOES NOT

UNNECESSARILY OPERATE WHEN OPENING THE MSIVS AT PRESSURE, COUNSELING OF THE OPERATORS INVOLVED REGARDING THEIR RESPONSIBILITIES TOWARD ALARM RESPONSE AND KNOWLEDGE OF PLANT CONDITIONS, AND TRAINING FOR ALL OPERATORS REGARDING THE SEQUENCE OF EVENTS. ADDITIONALLY, A HUMAN FACTORS REVIEW HAS RESULTED IN A DESIGN CHANGE WHICH WILL UPGRADE THE PRIORITY COLOR CODING OF THE BYPASS VALVE OPEN ANNUNCIATOR FROM WHITE TO AMBER.

[114] PILGRIM 1 DOCKET 50-293 LER 88-012
 AUTOMATIC START OF A REACTOR BUILDING CLOSED COOLING WATER SYSTEM PUMP.
 EVENT DATE: 042588 REPORT DATE: 052588 NSSS: GE TYPE: BWR
 VENDOR: INGERSOLL-RAND CO.
 KOPPERS CO., INC.

(NSIC 209395) ON APRIL 25, 1988 AT 0322 HOURS, AN AUTOMATIC START OF THE LOOP 'A' REACTOR BUILDING CLOSED COOLING WATER (RBCCW) SYSTEM PUMP 'A' OCCURRED. THE PUMP START WAS COINCIDENT WITH AN APPROPRIATE CONTROL ROOM ANNUNCIATION. THE CAUSE FOR THE PUMP START AND ANNUNCIATION W/ ACCCELERATED WEAR INDUCED FAILURE OF THE COUPLING IN THE RBCCW SYSTEM PUMP 'B'. THE COUPLING MECHANICALLY CONNECTS THE PRINCIPLE COMPONENTS (PUMP AND MOTOR) OF THE PUMP. THE COUPLING IS A MODEL 'B', SIZE 2 1/2, SELF ALIGNING (FAST'S) TYPE COUPLING MANUFACTURED BY THE KOPPERS COMPANY. THE WEAR WAS DUE TO A COMBINATION OF MISALIGNMENT AND SEPARATION OF THE GREASE (MOBILUX EP-2) USED IN THE COUPLING. THE REPLACEMENT OF THE COUPLING HAD NOT BEEN COMPLETED WHEN THIS REPORT WAS PREPARED BUT IS BEING TRACKED AND IS SCHEDULED PRIOR TO RESTART. ADDITIONAL MEASURES ARE BEING PLANNED AND SCHEDULED. THE MEASURES INCLUDE DISASSEMBLY, INSPECTION, AND LUBRICATION (WITH MOBILUX EP-1 GREASE) OF THE OTHER RBCCW SYSTEM PUMP(S) COUPLINGS. THIS EVENT OCCURRED DURING AN EXTENDED OUTAGE WHILE IN COLD SHUTDOWN CONDITIONS. THE REACTOR MODE SWITCH WAS IN THE SHUTDOWN POSITION. THE CONTROL RODS WERE IN THE INSERTED POSITION. THE REACTOR VESSEL WATER TEMPERATURE WAS 95 DEGREES FAHRENHEIT WITH NEGLIGIBLE CORE DECAY HEAT. THE REACTOR VESSEL PRESSURE WAS ZERO PSIG.

[115] PILGRIM 1 DOCKET 50-293 LER 88-013
 INADVERTENT MANUAL START OF THE 'B' EMERGENCY DIESEL GENERATOR.
 EVENT DATE: 042588 REPORT DATE: 052588 NSSS: GE TYPE: BWR

(NSIC 209396) ON 4/25/88 AT 1430 HOURS, AN INADVERTENT MANUAL START OF THE 'B' EMERGENCY DIESEL GENERATOR (EDG) OCCURRED. THE GENERATOR STARTED BUT DID NOT SUPPLY POWER TO ITS BUS (A-6) BECAUSE THE BUS WAS ALREADY ENERGIZED. FOLLOWING IMMEDIATE INVESTIGATION BY THE OPERATING SHIFT PERSONNEL, THE GENERATOR WAS RETURNED TO NORMAL STANDBY SERVICE AT APPROX. 1445 HOURS. THE CAUSE FOR THE MANUAL START WAS UTILITY TECHNICIAN PERSONNEL ERROR. THE TECHNICIAN MISTAKENLY PUSHED THE MANUAL START SWITCH INSTEAD OF AN ANNUNCIATOR RESET SWITCH DURING A WORK ACTIVITY INVOLVING THE LOCAL CONTROL PANEL OF THE GENERATOR. IMPROVEMENTS TO THE LOCAL CONTROL PANELS OF BOTH EDGS 'A' AND 'B' HAVE BEEN IDENTIFIED AND ARE BEING TRACKED. THE IMPROVEMENTS INCLUDE POSSIBLE RELOCATION OF THE ANNUNCIATOR RESET SWITCH(ES) AND MODIFICATION OF THE MANUAL START SWITCH(ES). THIS EVENT OCCURRED DURING AN EXTENDED OUTAGE WHILE IN COLD SHUTDOWN. THE REACTOR MODE SWITCH WAS IN THE SHUTDOWN POSITION. THE CONTROL RODS WERE IN THE INSERTED POSITION. THE REACTOR VESSEL WATER TEMPERATURE WAS 95 DEGREES FAHRENHEIT WITH NEGLIGIBLE CORE DECAY HEAT. THE REACTOR VESSEL PRESSURE WAS ZERO PSIG. THE REACTOR POWER LEVEL WAS ZERO MEGAWATTS-THERMAL. THE 'A' EDG WAS OPERABLE AND IN STANDBY SERVICE. EMERGENCY BUSES A-5 AND A-6 WERE ENERGIZED WITH 4160 VAC POWER FROM THE OFFSITE TRANSMISSION SYSTEM.

[116] PILGRIM 1 DOCKET 50-293 LER 88-014
 AUTOMATIC CLOSING OF THE OUTBOARD PRIMARY CONTAINMENT SYSTEM GROUP 6 ISOLATION VALVES.
 EVENT DATE: 042688 REPORT DATE: 052388 NSSS: GE TYPE: BWR

WAS NO EFFECT ON PUBLIC HEALTH AND SAFETY SINCE THE SYSTEMS OPERATED AS EXPECTED. TECH SPEC 3.3.D WAS MET AT ALL TIMES.

[119] PRAIRIE ISLAND 1 DOCKET 50-282 LER 88-003
ONE VOLTAGE RESTORING SCHEME INADVERTENTLY MADE INOPERABLE DURING RELAY TESTING.
EVENT DATE: 042688 REPORT DATE: 052688 NSSS: WE TYPE: PWR
OTHER UNITS INVOLVED: PRAIRIE ISLAND 2 (PWR)

(NSIC 209393) ON APRIL 26, 1988, UNIT 1 WAS AT STEADY-STATE FULL POWER. D2 DIESEL GENERATOR WAS OUT OF SERVICE FOR SCHEDULED ANNUAL PREVENTIVE MAINTENANCE. BUS 16 RELAY TESTING WAS BEING DONE IN CONJUNCTION WITH THE OUTAGE OF D2 DIESEL GENERATOR. A WIRE HAD BEEN LIFTED PER PROCEDURE TO ALLOW RELAY TESTING. IN ATTEMPTING TO REITERMINATE THE WIRE, THE RELAY SPECIALIST INADVERTENTLY SHORTED TWO TERMINALS, POSITIVE TO NEGATIVE, BLOWING THE PANEL POWER SUPPLY FUSE WHICH DEENERGIZED THE PANEL RELAYS, AND MAKING THE BUS 16 VOLTAGE RESTORING SCHEME INOPERABLE. THIS EVENT IS REPORTABLE UNDER 10CFR50.73(A)(2)(I)(B). DURING THE EVENT THE REDUNDANT TRAIN OF SAFEGUARDS EQUIPMENT REMAINED OPERABLE. BUS 16 REMAINED ENERGIZED FROM ITS NORMAL OFFSITE SOURCE, AND ITS ALTERNATE OFFSITE SOURCE WAS ALWAYS AVAILABLE MANUALLY. THE BLOWN FUSE FOR BUS 16 VOLTAGE RESTORING SCHEME WAS REPLACED AND THE BUS WAS DECLARED OPERABLE WITHIN 20 MINUTES. THEREFORE THIS EVENT PRESENTED MINIMAL INCREASED RISK TO THE HEALTH AND SAFETY OF THE PUBLIC. MODIFICATIONS HAVE BEEN INITIATED TO INSTALL ISOLATION SWITCHES TO ALLOW THIS TESTING WITHOUT LIFTING WIRES.

[120] QUAD CITIES 1 DOCKET 50-254 LER 88-002 REV 01
UPDATE ON MISSED CALIBRATION AND FUNCTIONAL TESTS DUE TO INADEQUATE PROCEDURE.
EVENT DATE: 011288 REPORT DATE: 052688 NSSS: GE TYPE: BWR

(NSIC 209379) ON 1/12/88, AT 0900 HOURS, IT WAS DETERMINED THAT A QUARTERLY FUNCTIONAL TEST OF THE REACTOR CORE ISOLATION (RCIC) SYSTEM LOW PRESSURE ISOLATION HAD NOT BEEN PERFORMED PRIOR TO UNIT ONE STARTUP FROM ITS REFUEL OUTAGE AS REQUIRED BY TECHNICAL SPECIFICATION TABLE 4.2-1. THE FUNCTIONAL TEST WAS IMMEDIATELY PERFORMED ON JANUARY 12, 1988 AFTER THIS WAS IDENTIFIED. ON APRIL 30, 1988, DURING A SURVEILLANCE DOCUMENT REVIEW, IT WAS DISCOVERED THAT CALIBRATIONS INVOLVING REACTOR LOW LEVEL SWITCHES AND RESIDUAL HEAT REMOVAL PUMP DISCHARGE PRESSURE SWITCHES HAD ALSO BEEN OVERLOOKED DURING THIS PERIOD. THE CAUSE FOR THE MISSED TESTS WAS AN INADEQUATE PROCEDURE. THE CALIBRATION AND FUNCTIONAL TESTS ARE NORMALLY COMPLETED CONCURRENTLY. IN THESE CASES, THE TESTS COULD NOT BE PERFORMED DUE TO SYSTEM OUT-OF-SERVICES OR ASBESTOS AREAS CREATED DURING THE REFUEL OUTAGE. THE TESTING WAS OVERLOOKED DURING THE SUBSEQUENT STARTUP FROM THE REFUEL OUTAGE BECAUSE THE PROCEDURE CHECKLIST IN USE DID NOT DIFFERENTIATE BETWEEN CALIBRATION AND FUNCTIONAL TESTING. THE PROCEDURE CHECKLIST USED AND OTHER SIMILAR CHECKLISTS HAVE BEEN REVISED TO DIFFERENTIATE BETWEEN CALIBRATION AND FUNCTIONAL TESTING. A MEMORANDUM HAS BEEN ISSUED TO INSTRUMENT MAINTENANCE PERSONNEL DETAILING THIS EVENT AND STATING THAT AN APPROPRIATE NOTATION MUST BE MADE.

[121] QUAD CITIES 2 DOCKET 50-265 LER 88-006
CONTAINMENT PENETRATION PIPING FLUED HEAD ANCHORS OUTSIDE SAFETY ANALYSIS DESIGN REQUIREMENTS DUE TO ANALYSIS DEFICIENCY.
EVENT DATE: 040488 REPORT DATE: 050288 NSSS: GE TYPE: BWR

(NSIC 209217) ON APRIL 4, 1988, QUAD-CITIES UNIT TWO WAS IN THE RUN MODE AT 93 PERCENT THERMAL POWER. AT 1410 HOURS, THE STATION WAS NOTIFIED BY THE BWR ENGINEERING DEPARTMENT THAT ELEVEN FLUED HEAD ANCHORS DID NOT MEET THE DESIGN REQUIREMENTS OF THE FINAL SAFETY ANALYSIS REPORT (FSAR). NRC NOTIFICATION OF THIS CONDITION WAS COMPLETED AT 423 HOURS TO SATISFY 10 CFR 50.72. THE CAUSE FOR THIS CONDITION WAS DUE TO MISINTERPRETATION OF SCOPE IN THAT THESE STRUCTURES

WERE NOT REASSESSED FOR DESIGN BASE REQUIREMENTS BASED ON IE BULLETIN 9-02 AND 79-14 PROGRAMS. MODIFICATION 04-02-88-017 HAS BEEN INITIATED TO REVISE THE STRUCTURES TO COMPLY WITH SAR REQUIREMENTS. A PROGRAM IS IN PLACE TO ANALYZE THE UNIT ONE STRUCTURES IN A SIMILAR MANNER. THIS REPORT IS PROVIDED TO COMPLY WITH THE REQUIREMENTS OF 10 CFR 50.73(A)(2)(II)(B).

[122] QUAD CITIES 2 DOCKET 50-265 LER 88-007
LEAK RATE FROM ALL VALVES AND PENETRATIONS IN EXCESS OF SPECIFICATION LIMITS.
EVENT DATE: 042088 REPORT DATE: 042688 NSSS: GE TYPE: BWR

(NSIC 209384) ON APRIL 10, 1988, QUAD CITIES UNIT TWO WAS SHUTDOWN FOR THE END OF CYCLE 9 REFUELING AND MAINTENANCE OUTAGE. ON APRIL 13, 1988 AT 1630 HOURS, IT WAS DETERMINED THAT THE MEASURED COMBINED LEAKAGE RATE FROM ALL PENETRATIONS AND VALVES, EXCLUDING THE MAIN STEAM ISOLATION VALVES, EXCEEDED THE TECHNICAL SPECIFICATIONS (3.7.A.2) LIMIT OF 293.75 SCFH (0.60LA). THIS WAS IDENTIFIED WHILE LOCAL LEAK RATE TESTING THE 2-220-58B AND 2-220-62B FEEDWATER CHECK VALVES. THE FAILURE MODE OF THE PENETRATIONS AND VALVES IS NOT KNOWN AT THIS TIME SINCE THE TESTING AND REPAIR OF THESE ITEMS IS NOT COMPLETE. A SUPPLEMENTAL REPORT WILL ADDRESS LEAK RATE TESTING AND REPAIRS WHEN THIS IS COMPLETED. THIS REPORT IS SUBMITTED TO COMPLY WITH THE REQUIREMENTS OF 10CFR50.73(A)(2)(II).

[123] RANCHO SECO DOCKET 50-312 LER 88-006
SPURIOUS ACTUATION OF CONTROL ROOM/TECHNICAL SUPPORT CENTER ESSENTIAL HVAC.
EVENT DATE: 041488 REPORT DATE: 051288 NSSS: BW TYPE: PWR
VENDOR: GENERAL ATOMIC CO.
ROCHESTER INSTRUMENT SYSTEMS, INC.

(NSIC 209322) ON APRIL 14, 1988, POTENTIAL DEVIATION FROM QUALITY (PDQ) 88-0121 WAS INITIATED TO REPORT NUMEROUS SPURIOUS ACTUATIONS OF THE CONTROL ROOM/TECHNICAL SUPPORT CENTER (CR/TSC) ESSENTIAL HVAC SYSTEM. THESE ACTUATIONS WERE CAUSED BY FALSE HIGH READINGS IN THE SYSTEM'S TEMPERATURE SENSOR, RADIATION DETECTION, AND CHLORINE DETECTION CIRCUITRY. THE SYSTEM HAS EXPERIENCED NUMEROUS ACTUATIONS SINCE FEBRUARY 27, 1988, WHEN IT WAS RETURNED TO NORMAL OPERATION FROM A "SYSTEM TESTING" STATUS. BECAUSE THE UPDATED SAFETY ANALYSIS REPORT (USAR) DOES NOT LIST THE CR/TSC ESSENTIAL HVAC AS AN ENGINEERED SAFETY FEATURES (ESF) SYSTEM AND THE SAFETY FEATURES ACTUATION SYSTEM (SFAS) SIGNAL HAD BEEN REMOVED, THE ACTUATIONS WERE ORIGINALLY DISPOSITIONED AS NOT REPORTABLE TO THE NRC. SUBSEQUENT REVIEW OF THE RANCHO SECO CONTROL ROOM HABITABILITY REPORT SHOWED THAT THE SYSTEM WAS THEREIN DESCRIBED TO THE NRC AS AN ESF SYSTEM. THESE ACTUATIONS ARE THEREFORE BEING REPORTED AS AN AUTOMATIC INITIATION OF AN ESF SYSTEM PURSUANT TO 10 CFR 50.73(A)(2)(IV). THE DISTRICT IS CONTINUING WITH ITS DETERMINATION OF THE ESF STATUS FOR THIS SYSTEM AND WILL REVISE THE LER IF REQUIRED. PLANNED CORRECTIVE ACTIONS INCLUDE CHANGING THE TEMPERATURE SWITCH ACTUATION SIGNAL TO AN ALARM ONLY FUNCTION, AND CHANGING THE RADIATION MONITOR'S ALERT AND ACTUATION SETPOINTS TO HIGHER LEVELS. SPURIOUS ACTUATIONS OF THE CR/TSC ESSENTIAL HVAC WERE P

[124] RANCHO SECO DOCKET 50-312 LER 88-003
POTENTIAL PROBLEM WITH GEMS SENSORS MODEL NO. 63328A MODULAR RECEIVERS.
EVENT DATE: 041588 REPORT DATE: 051688 NSSS: BW TYPE: PWR

(NSIC 209321) IN ACCORDANCE WITH 10 CFR 21.21(B)(2), THE SACRAMENTO MUNICIPAL UTILITY DISTRICT HEREBY SUBMITS A WRITTEN REPORT TO DOCUMENT A POTENTIAL PROBLEM WITH GEMS SENSORS MODEL NO. 63328A MODULAR RECEIVERS. GEMS SENSORS IS STOCKING A NONQUALIFIED MANUFACTURER'S TOGGLE SWITCH FOR THE MODULAR RECEIVER UNDER A QUALIFIED TOGGLE SWITCH PART NUMBER. GEMS SENSORS WAS UNABLE TO PRODUCE EVIDENCE THAT THEY PERFORMED THE REQUIRED ANALYSES TO ENSURE THAT THE TOGGLE SWITCHES

BEING STOCKED WERE EQUIVALENT TO THE QUALIFIED TOGGLE SWITCHES. THE MODULAR RECEIVERS INSTALLED AT RANCHO SECO HAVE THE QUALIFIED TOGGLE SWITCH INSTALLED.

[125] RANCHO SECO DOCKET 50-312 LER 88-007
 INADEQUATE SURVEILLANCE ON BATTERY CHARGER BREAKERS DUE TO PROCEDURE DEFICIENCY.
 EVENT DATE: 042888 REPORT DATE: 052688 NSSS: BW TYPE: PWR

(NSIC 209401) ON 4/3/88, AMENDMENT NO. 97 TO THE TECHNICAL SPECIFICATIONS BECAME EFFECTIVE. ONE OF THE CHANGES IN THE AMENDMENT IS A NEW SURVEILLANCE REQUIREMENT (4.6.4.F) TO PERFORM WEEKLY BREAKER ALIGNMENT VERIFICATION OF THE 125 VOLT DC AND 120 VOLT AC VITAL BUSES. IMPLEMENTATION OF SURVEILLANCE REQUIREMENT 4.6.4.F WAS TO BE INCLUDED IN REVISION 1 TO SURVEILLANCE PROCEDURE SP.3 "WEEKLY SELECTED INSTRUMENTATION CHECKS, INSPECTIONS, AND SYSTEM VERIFICATIONS"; HOWEVER, THE SURVEILLANCE REQUIREMENT WAS NOT ADEQUATELY ADDRESSED IN THIS PROCEDURE REVISION. THE FAILURE TO IMPLEMENT THE SURVEILLANCE REQUIREMENT CAUSED THE BUSES TO BE DECLARED TECHNICALLY INOPERABLE. THE TECHNICALLY INOPERABLE BUSES CONSTITUTE A CONDITION PROHIBITED BY THE TECHNICAL SPECIFICATIONS AND IS REPORTABLE PURSUANT TO 10 CFR 50.73(A)(2)(I)(B). ON 4/28/88, A SURVEILLANCE AUDIT OF TECHNICAL SPECIFICATION IMPLEMENTING PROCEDURES DISCOVERED THE PROCEDURE DEFICIENCY. PROCEDURE SP.3, REVISION 2 WAS ISSUED ON 4/29/88 TO CORRECT THE DEFICIENCY. THIS PROCEDURE ADDED WEEKLY BREAKER ALIGNMENT VERIFICATIONS FOR THE NORMAL CHARGER BREAKERS, STATIC TRANSFER SWITCHES, AND INVERTERS. THE REVISED SURVEILLANCE PROCEDURE WAS PERFORMED ON 5/2/88.

[126] RIVERBEND 1 DOCKET 50-458 LER 86-039 REV 01
 UPDATE ON REACTOR SCRAM ON TURBINE TRIP DUE TO HIGH VIBRATION SIGNAL.
 EVENT DATE: 051986 REPORT DATE: 052788 NSSS: GE TYPE: BWR
 VENDOR: GENERAL ELECTRIC CO.

(NSIC 209174) AT 0654 ON 5/19/86 AN INADVERTENT FIRE PROTECTION DELUGE SYSTEM ACTUATION OCCURRED. THIS ACTUATION DELUGED MAIN TURBINE BEARINGS 1, 2 AND 3. MAIN TURBINE OPERATION, INCLUDING VIBRATION, WAS MONITORED CLOSELY WITH NO ABNORMALITIES NOTED. THE ACTUATION WAS SECURED AT APPROXIMATELY 0709. AT 1420 THAT SAME DAY, WITH THE UNIT AT 73 PERCENT POWER, THE MAIN TURBINE TRIPPED ON A HIGH BEARING VIBRATION SIGNAL CAUSING A CLOSURE OF THE TURBINE STOP VALVES AND A SUBSEQUENT REACTOR SCRAM. INVESTIGATION REVEALED WATER ACCUMULATION IN THE #3 BEARING VIBRATION PROBE CABLE CONNECTOR WHICH CAUSED A FALSE TRIP SIGNAL. WORK PER A MODIFICATION REQUEST HAS BEEN COMPLETED WHICH CHANGES THE TURBINE BEARING FIRE PROTECTION SYSTEM FROM A DELUGE TO A PRE-ACTION TYPE. THIS CHANGE WILL PREVENT THE FIRE SUPPRESSION WATER SYSTEM FROM SPRAYING WATER UNLESS AN ACTUAL FIRE IS PRESENT. ALL SYSTEMS RESPONDED NORMALLY TO THE TURBINE TRIP AND REACTOR SCRAM. THERE WAS NO ACTUAL HIGH VIBRATION OTHERWISE INDICATED. THERE WAS NO ADVERSE AFFECT ON THE SAFE OPERATION OF THE PLANT OR TO THE HEALTH AND SAFETY OF THE PUBLIC SINCE THE REACTOR SCRAM PLACED THE UNIT IN A MORE CONSERVATIVE CONDITION.

[127] RIVERBEND 1 DOCKET 50-458 LER 86-042 REV 01
 UPDATE ON REACTOR SCRAM ON IRM UPSCALE.
 EVENT DATE: 061486 REPORT DATE: 050688 NSSS: GE TYPE: BWR

(NSIC 209261) AT 2326 ON 6/14/86 DURING RESTART FROM SCRAM 86-17 (TURBINE HIGH VIBRATION, REF. LER 86-041) THE UNIT TRIPPED ON INTERMEDIATE RANGE MONITOR (IRM) UPSCALE FROM APPROXIMATELY 1% POWER. WITH THE REACTOR AT APPROXIMATELY 750 PSIG THE UNIT OPERATOR (UO) BEGAN ALIGNING STEAM LINE DRAINS PER THE STARTUP PROCEDURE IN USE AT THE TIME. AFTER OPENING TWO 3 INCH DRAINS, PRESSURE BEGAN TO REDUCE RAPIDLY. THE PRESSURE REDUCTION RESULTED IN A REACTOR WATER LEVEL SWELL AND POWER DECREASE DUE TO INCREASED VOIDS. THE IRMS WERE DOWN RANGED BY THE CONTROLS (ATC) OPERATOR TO MAINTAIN ONSCALE READINGS. THE SWELL ALSO CAUSED CLOSURE OF

THE STARTUP REGULATING VALVE, WHICH ALONG WITH THE REACTOR WATER CLEANUP (RWCU) RETURN DIVERSION, RESULTED IN WATER LEVEL REDUCTION. AS LEVEL DECREASED THE STARTUP REGULATING VALVE BEGAN TO OPEN. WITH THE STARTUP REGULATING VALVE NOW FULLY OPEN, AND THE IRMS DOWN RANGED DUE TO THE REDUCED POWER LEVELS, THE SIGNIFICANT MASS FLOW OF COLD FEEDWATER TO THE VESSEL RESULTED IN A FLUX INCREASE TO THE IRM UPSCALE SETPOINT WHICH CAUSED A REACTOR SCRAM. THE GENERAL OPERATING PROCEDURE HAS BEEN REVISED TO INCLUDE APPROPRIATE CAUTIONS IN REGARD TO OPENING STEAM DRAINS. SPECIFIC GUIDANCE AND TRAINING WAS GIVEN TO ALL CREWS AS TO THE CAUSES OF THE EVENT. THERE WAS NO ADVERSE AFFECT ON THE HEALTH AND SAFETY OF THE PUBLIC AS A RESULT OF THIS EVENT.

[128] ROBINSON 2 DOCKET 50-261 LER 88-008
OPERATION IN VIOLATION OF TECHNICAL SPECIFICATIONS DUE TO ANALYTIC INPUT ERROR.
EVENT DATE: 042088 REPORT DATE: 052688 NSSS: WE TYPE: PWR

(NSIC 209381) ON MARCH 24, 1988, WITH UNIT NO. 2 OPERATING AT SIXTY PERCENT POWER, THE FUEL VENDOR FOR H. B. ROBINSON NOTIFIED THE LICENSEE'S NUCLEAR FUEL SECTION (NFS) OF AN ERROR IN THE ANALYTIC FACTOR DECKS USED TO PROCESS IN-CORE DETECTOR MEASUREMENTS AND FOR CORE POWER DISTRIBUTION MAPPING. THE ERROR WAS CAUSED BY AN OVERTIGHT DURING THE FUEL VENDOR'S ANALYSIS WHEN INCORRECT ISOTOPIC DATA WERE ASSIGNED TO A CYCLE 12 REINSERT ASSEMBLY. SUBSEQUENT EVALUATION OF THE ERROR REVEALED THAT, AS A RESULT, NONCONSERVATIVE AXIAL FLUX DIFFERENCE TARGET BANDS WERE UTILIZED DURING THE PERIOD OF JUNE 29 THROUGH AUGUST 13, 1987. OPERATION DURING THIS PERIOD OF TIME OCCURRED WITHOUT THE USE OF THE AXIAL POWER DISTRIBUTION MONITORING SYSTEM, AS REQUIRED BY TECHNICAL SPECIFICATION 3.10.2.2.2. HOWEVER, BECAUSE OF CONSERVATISM IN THE PROCESS, NO UNSAFE CONDITION RESULTED FROM OPERATING CONTRARY TO TECHNICAL SPECIFICATION LIMITS DURING THIS PERIOD. THE FUEL VENDOR HAS REVISED THE IN-CORE INPUT DECKS, AND THE NFS HAS REANALYZED THE APPROPRIATE FLUX MAPS WITH THE CORRECTED DATA. THE LICENSEE NOTIFIED THE NRC VIA THE ENS OF THIS CONDITION ON APRIL 20, 1988, PURSUANT TO 10CFR50.72(B)(1)(II). THIS REPORT IS SUBMITTED PURSUANT TO 10CFR50.73(A)(2)(II).

[129] ROBINSON 2 DOCKET 50-261 LER 88-009
REACTOR POWER EXCEEDING TECHNICAL SPECIFICATION LIMIT DUE TO PLANT TRANSIENT.
EVENT DATE: 042288 REPORT DATE: 052088 NSSS: WE TYPE: PWR
VENDOR: WESTINGHOUSE ELECTRIC CORP.

(NSIC 209382) ON APRIL 22, 1988, UNIT 2 WAS OPERATING AT 60% REACTOR POWER, APPROXIMATELY 407 MWE NET. THE CONTROL OPERATOR ATTEMPTED TO MANUALLY ADJUST THE TURBINE LOAD WHILE IN AUTOMATIC CONTROL USING THE ELECTRO-HYDRAULIC (E-H) CONTROL SYSTEM, A NORMAL EVOLUTION. AN E-H SYSTEM TRANSIENT RESULTED. THE TURBINE DECREASED AUTOMATICALLY TO 35% MWE NET, THEN PICKED UP LOAD TO 520 MWE NET, SO THAT APPROXIMATELY 64.5% REACTOR POWER WAS ACHIEVED. THE SENIOR CONTROL OPERATOR QUICKLY PLACED THE TURBINE IN MANUAL CONTROL AND RETURNED THE TURBINE LOAD TO 410 MWE NET, APPROXIMATELY 60% REACTOR POWER. THE TRANSIENT LASTED FOR APPROXIMATELY THREE MINUTES, DURING WHICH TIME THE REACTOR POWER EXCEEDED THE 60% (1380 MWT) POWER LIMIT (TECHNICAL SPECIFICATION 3.3.1.1C). MAINTENANCE REPLACED A FAULTY E-H RELAY CARD WHICH RECEIVES A SIGNAL FROM THE GOVERNOR VALVE POSITION LIMITER. AT THE TIME OF THIS WRITING AN ADDITIONAL E-H CONTROL MALFUNCTION HAS CAUSED A TURBINE TRIP AND SUBSEQUENT REACTOR TRIP ON MAY 2, 1988. THE RESULTS OF THE INVESTIGATION REGARDING THAT EVENT INCLUDING RELATIONSHIP TO THIS EVENT WILL BE DISCUSSED IN A SUBSEQUENT REPORT (LER 88-010). THIS LER IS SUBMITTED PURSUANT TO 10CFR50.73(A)(2)(I)(B).

[130] SALEM 1 DOCKET 50-272 LER 87-018 REV 01
UPDATE ON LEAD/LAG AND DERIVATIVE AMPLIFIERS IMPROPERLY CALIBRATED DUE TO PROCEDURAL INADEQUACY.
EVENT DATE: 120987 REPORT DATE: 052588 NSSS: WE TYPE: PWR

OTHER UNITS INVOLVED: SALEM 2 (PWR)

(NSIC 209447) ON 12/09/87, IT WAS DETERMINED BY TECHNICAL DEPARTMENT SYSTEM ENGINEERING PERSONNEL THAT THE LEAD/LAG AND DERIVATIVE AMPLIFIERS IN THE PROCESS AND PROTECTION CONTROL SYSTEM HAVE BEEN INCORRECTLY CALIBRATED. THE PROCESS AND PROTECTION EQUIPMENT AFFECTED BY THE IMPROPER CALIBRATION INCLUDE: LOW STEAMLINE PRESSURE TRIP; OVERTEMPERATURE DELTA T TRIP; OVERPOWER DELTA T TRIP; LOW PRESSURIZER PRESSURE TRIP; MAIN TURBINE IMPULSE CONTROL; COOLANT AVERAGE TEMPERATURE CONTROL (PROGRAM); POWER MISMATCH CHANNEL IMPULSE CONTROLS AND STEAM DUMP CONTROL. THE ROOT CAUSE OF THIS EVENT WAS PROCEDURAL INADEQUACY. THE PROCEDURES INVOLVED HAVE BEEN REVISED TO ENSURE CORRECT CALIBRATION OF THE LEAD/LAG AND DERIVATIVE AMPLIFIERS.

[131] SALEM 1 DOCKET 50-272 LER 88-001 REV 01
 UPDATE ON DIESEL GENERATOR DAY TANKS DO NOT MEET SEISMIC CRITERIA DUE TO INADEQUATE DESIGN AND REVIEW.
 EVENT DATE: 021188 REPORT DATE: 051888 NSSS: WE TYPE: PWR

(NSIC 209386) ON FEBRUARY 11, 1988 AT 1800 HOURS, PSE&G ENGINEERING PERSONNEL IDENTIFIED A DEFICIENCY ASSOCIATED WITH THE SALEM UNIT 1 DIESEL GENERATOR (D/G) DAY TANKS DC. THE THREE TANKS WERE NOT PROPERLY ANCHORED TO THE SUPPORTING STEEL BEAM FOUNDATION. HAD A SEISMIC EVENT OCCURRED, THE TANKS COULD HAVE SHIFTED POSSIBLY RESULTING IN THE STOPPAGE OF FUEL OIL FLOW TO THE RESPECTIVE D/G EK. THE ROOT CAUSE OF THIS EVENT HAS BEEN ATTRIBUTED TO INADEQUATE DESIGN AND DESIGN REVIEW. THE DAY TANKS HAVE APPARENTLY BEEN IN THE AS FOUND CONDITION SINCE INSTALLATION. A REVIEW OF THE HISTORICAL DOCUMENTATION (E.G., PRINTS AND SPECIFICATIONS) REVEALED THAT ANCHORING OF THE DAY TANKS WAS NOT SPECIFIED. UPON DISCOVERY OF THE SALEM UNIT 1 DAY TANK DESIGN CONCERN, SALEM UNIT 2'S DAY TANKS WERE INSPECTED. THE UNIT 2 TANKS WERE FOUND TO BE PROPERLY ANCHORED. THE UNIT 1 DAY TANKS WERE WELD ANCHORED TO THE WIDE FLANGE STEEL BEAM FOUNDATION ON FEBRUARY 12, 1988 IN ACCORDANCE WITH SEISMIC DESIGN CRITERIA. ALSO, THE DAY TANK CIVIL DRAWINGS HAVE BEEN UPDATED TO IDENTIFY THE ANCHOR REQUIREMENTS.

[132] SALEM 1 DOCKET 50-272 LER 88-005
 TECH SPEC SURVEILLANCE OF SEALED SOURCES PERFORMED LATE DUE TO INADEQUATE ADMINISTRATIVE CONTROL.
 EVENT DATE: 030788 REPORT DATE: 032988 NSSS: WE TYPE: PWR
 OTHER UNITS INVOLVED: SALEM 2 (PWR)

(NSIC 208928) ON 03/07/88 AT 1200 HOURS, IT WAS IDENTIFIED THAT TECHNICAL SPECIFICATION SURVEILLANCE 4.7.8.1.2.A, SEALED SOURCE LEAK CHECKS, WAS NOT PERFORMED WITHIN SIX MONTHS FROM THE PRIOR SURVEILLANCE. THE SURVEILLANCE WAS OVERDUE AS OF 03/01/88. THE MISSED SURVEILLANCE WAS IDENTIFIED AS A RESULT OF THE INVESTIGATIVE CORRECTIVE ACTIONS REQUIRED BY RELATED LERS WHICH DEAL WITH OTHER MISSED SURVEILLANCE CONCERNS (E.G., LER 272/88-004-00). THE ROOT CAUSE OF THIS EVENT HAS BEEN ATTRIBUTED TO INADEQUATE ADMINISTRATIVE CONTROLS ASSOCIATED WITH THE NEW COMPUTER BASED WORK ACTIVITY SYSTEM, MANAGED MAINTENANCE INFORMATION SYSTEM (MMIS). THE SEALED SOURCE LEAK CHECK SURVEILLANCE WAS COMPLETED 03/14/88. NO LEAKING SOURCES WERE FOUND. A MANUAL SYSTEM FOR TRACKING SURVEILLANCES WITHIN THE RADIATION PROTECTION DEPARTMENT HAS BEEN IMPLEMENTED. THIS WILL CONTINUE UNTIL THE MMIS IS UPDATED TO HANDLE THIS SURVEILLANCE. THE RADIATION AND CHEMISTRY SURVEILLANCE REVIEW COMMITTED TO BY LER 272/88-004-00 IS CONTINUING. THE PSE&G NQA EVALUATION OF THE ADMINISTRATIVE CONTROL OF SURVEILLANCE RECURRING TASKS HAS BEEN INITIATED (REFERENCE SALEM UNIT 2 LER 311/88-004-00).

[133] SALEM 2 DOCKET 50-311 LER 88-005
 REACTOR TRIP FROM 100% POWER DUE TO FALSE NO. 23 RC LOOP LOW FLOW SIGNAL DUE TO
 PERSONNEL ERROR.
 EVENT DATE: 042188 REPORT DATE: 051088 NSSS: WE TYPE: PWR

(NSIC 209320) ON APRIL 21, 1988 AT 1533 HOURS, DURING ROUTINE POWER OPERATION, A REACTOR TRIP OCCURRED. THE TRIP WAS A RESULT OF NO. 23 REACTOR COOLANT (RC) LOOP LOW FLOW WITH THE REACTOR GREATER THAN OR EQUAL TO 36% POWER (P-8). AT THE TIME OF THE EVENT, A MAINTENANCE TECHNICIAN WAS REPAIRING A LEAK ON THE LOW PRESSURE SIDE OF NO. 23 RC LOOP FLOW TRANSMITTER. THE ROOT CAUSE OF THIS EVENT HAS BEEN ATTRIBUTED TO PERSONNEL ERROR. THIS EVENT HAS BEEN REVIEWED BY MAINTENANCE DEPARTMENT MANAGEMENT. APPROPRIATE CORRECTIVE DISCIPLINE WITH THE INDIVIDUAL(S) INVOLVED HAS BEEN COMPLETED. ALSO, THIS EVENT HAS BEEN REVIEWED WITH MAINTENANCE DEPARTMENT PERSONNEL DURING A "WORK SHOP" TYPE SESSION. THE NEED TO USE ESTABLISHED PROCEDURES FOR WORK WAS STRESSED. A SIGN (E.G., LAMACOID) WILL BE POSTED BY THE REACTOR: COOLANT FLOW TRANSMITTERS VALVING CAUTIONING PERSONNEL ABOUT THE SENSITIVITY OF THIS EQUIPMENT TO ISOLATION VALVE MANIPULATION. A HUMAN PERFORMANCE EVALUATION SYSTEM (HPES) INVESTIGATION HAS BEEN INITIATED.

[134] SAN ONOPRE 1 DOCKET 50-206 LER 87-015 REV 01
 UPDATE ON ENGINEERED SAFETY SYSTEMS DESIGN FAILS TO MEET SINGLE FAILURE CRITERIA.
 EVENT DATE: 100787 REPORT DATE: 051788 NSSS: WE TYPE: PWR

(NSIC 209368) ON OCTOBER 7, 1987, WITH UNIT 1 AT 92% POWER, AN ONGOING ENGINEERED SAFETY FEATURES (ESF) ANALYSIS DETERMINED SEVERAL SCENARIOS WHERE A SINGLE FAILURE COULD PREVENT CERTAIN ESF SYSTEMS FROM PERFORMING THEIR FUNCTIONS AS REQUIRED FOR DESIGN BASIS TRANSIENTS AND ACCIDENTS. THE CAUSE OF THE EVENT WAS DETAILED IN LETTERS FROM M. O. MEDFORD (SCE) TO DOCUMENT CONTROL DESK (NRC), SUBJECT: ESF SINGLE FAILURE ANALYSIS, DOCKET NO. 50-206, WHICH WERE SUBMITTED ON OCTOBER 16, 1987, AND NOVEMBER 6, 1987. IMMEDIATE CORRECTIVE ACTION TO PRECLUDE OCCURRENCE OR MITIGATE THE CONSEQUENCES WAS TAKEN BY ENHANCING ADMINISTRATIVE CONTROLS, OPERATOR TRAINING AND COMPLETION OF BEST ESTIMATE ANALYSIS. PLANT MODIFICATIONS TO CORRECT SINGLE FAILURE DISCREPANCIES UNDER CONSIDERATION ARE TO BE COMPLETED DURING THE NEXT REFUELING OUTAGE. THESE ARE DISCUSSED IN SEPARATE SUBMITTALS TO THE NRC DATED NOVEMBER 20, 1987, AND APRIL 5, 1988. THE HEALTH AND SAFETY OF PLANT PERSONNEL AND THE PUBLIC WERE NOT AFFECTED BY THIS EVENT.

[135] SAN ONOPRE 1 DOCKET 50-206 LER 88-007
 TECHNICAL SPECIFICATION REQUIRED EFFLUENT SAMPLE DISCARDED DUE TO INADEQUATE
 ADMINISTRATIVE CONTROLS.
 EVENT DATE: 020788 REPORT DATE: 051088 NSSS: WE TYPE: PWR

(NSIC 209306) ON 2/6-7/88, WITH UNIT 1 AT 92% POWER, THE CONTENTS OF THE CENTER HOLDUP TANK, WHICH STORES RADIOACTIVE LIQUID WASTE, WERE RELEASED. ON 4/11/88, IT WAS DETERMINED THAT A "PRE-RELEASE" SAMPLE FROM THE CENTER HOLDUP TANK WAS NOT RETAINED, WHICH IS CONTRARY TO TECH SPEC 4.5.1. THE SAMPLE IS USED TO DETERMINE THE CONTRIBUTION OF THE TANK CONTENTS TO THE AMOUNT OF ALPHA, SR-B9, SR-9, AND FE-55 RELEASED ANNUALLY. AS A RESULT, THE AMOUNT OF THESE ISOTOPES CONTAINED IN THE CENTER HOLDUP TANK EFFLUENT CANNOT BE POSITIVELY DETERMINED. THERE IS NO SAFETY SIGNIFICANCE TO THIS EVENT SINCE THE THE LOW ACTIVITY CONTAINED IN THE CENTER HOLDUP TANK SAMPLE INDICATES THAT THE CONTRIBUTIONS OF THESE ISOTOPES TO THE ANNUAL PROJECTED DOSE WOULD ALMOST CERTAINLY HAVE BEEN BELOW THE LOWER LIMIT OF DETECTION. THE PERSONNEL WHO DETERMINED, BASED ON THE RESULTS FROM THE INITIAL SAMPLE OF THE CENTER HOLDUP TANK, THAT A RELEASE WOULD BE MADE WITHOUT PROCESSING AND THEREFORE WITHOUT FURTHER SAMPLING, FAILED TO ADEQUATELY EXECUTE THE EFFLUENT SAMPLING PROCEDURE REQUIREMENT TO ENSURE THAT A "PRE-RELEASE" SAMPLE WAS RETAINED. THE ROOT CAUSE OF THIS EVENT IS THE FAILURE OF CHEMISTRY ADMINISTRATIVE CONTROLS WHICH GOVERN RELEASES TO ADEQUATELY ADDRESS THE SITUATION

WHEN AN INITIAL SAMPLE, NORMALLY USED ONLY TO DETERMINE TREATMENT REQUIREMENTS, ALSO SERVES AS THE "PRE- RELEASE" SAMPLE.

[136] SAN ONOPRE 3 DOCKET 50-362 LER 88-004
 SPURIOUS CONTAINMENT PURGE ISOLATION SYSTEM (CPIS) ON FAILURE CIRCUIT ACTUATION
 DUE TO CIRCUIT ERRORS.
 EVENT DATE: 051188 REPORT DATE: 061088 NSSS: CE TYPE: PWR
 VENDOR: NUCLEAR MEASUREMENTS CORP.

(NSIC 209538) ON MAY 11, 1988, AT 0855 WHILE UNIT 3 WAS IN MODE 6 PREPARING FOR REFUELING WITH CONTAINMENT PURGE IN PROGRESS, CPIS TRAIN "A" ACTUATED ON MONITOR FAILURE WHEN THE IODINE FILTER CARTRIDGE WAS REMOVED FROM IODINE DETECTOR 3RI-7804A FOR ROUTINE REPLACEMENT. AFTER DETERMINING THAT CONTAINMENT RADIATION LEVELS WERE NORMAL AND THAT THE CPIS ACTUATION RESULTED FROM MONITOR FAILURE, THE CPIS WAS RESET AND CONTAINMENT VENTILATION WAS RESTORED AT 0905. THE CAUSE OF THE ACTUATION HAS BEEN DETERMINED TO BE INCORRECT VENDOR DRAWINGS WHICH RESULTED IN AN INCORRECT CAPACITOR BEING INSTALLED IN THE 3RI-7804A FAILURE CIRCUIT. AS A RESULT, THE FAILURE CIRCUIT ACTUATED ON A DECREASING COUNT-RATE AS THE FILTER CARTRIDGE WAS REMOVED. THE FAILURE CIRCUIT SHOULD ONLY HAVE ACTUATED AT A PFE-SET LOW COUNT RATE INDICATIVE OF MONITOR FAILURE. ACTION HAS BEEN INITIATED TO CORRECT THE VENDOR DRAWINGS AND CONFORM INSTALLED AND SPARE EQUIPMENT TO THE DRAWINGS. SCE QUALITY ASSURANCE (QA) HAS PREVIOUSLY REVIEWED THE VENDOR'S QA PROGRAM AND IDENTIFIED DESIGN AND DOCUMENT CONTROL PROBLEMS. SCE (QA) WILL REVIEW THE ADEQUACY OF RESULTING CORRECTIVE ACTIONS TAKEN BY THE VENDOR. IF NECESSARY, APPROPRIATE ADDITIONAL CORRECTIVE ACTION WILL BE DEVELOPED AND IMPLEMENTED.

[137] SEABROOK 1 DOCKET 50-443 LER 88-002 REV 01
 UPDATE ON TECH SPEC SURVEILLANCE NOT PERFORMED.
 EVENT DATE: 021188 REPORT DATE: 051688 NSSS: WE TYPE: PWR

(NSIC 209342) ON 2/1/88, IT WAS DETERMINED THAT THE SUPPLY BREAKER FOR INVERTER 1-ED-1-2B, WHICH IS SUPPLIED FROM UNIT SUBSTATION 1-EDE-US-51, HAD NOT BEEN TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF TECHNICAL SPECIFICATION 4.8.4.2. ON JANUARY 7, 1988, DURING A REVIEW OF SURVEILLANCE PROCEDURES FOR PROTECTIVE DEVICES FOR CLASS 1E POWER SOURCES CONNECTED TO NON-CLASS 1E DEVICES, IT WAS IDENTIFIED THAT THIS BREAKER WAS NOT INCLUDED. FURTHER REVIEW REVEALED THAT THIS BREAKER WAS NOT INCLUDED ON THE LIST OF BREAKERS WHICH REQUIRE TESTING PURSUANT TO TECHNICAL SPECIFICATION 3.8.4.2. THIS BREAKER HAD BEEN TESTED DURING THE PREOPERATIONAL TEST PROGRAM, AND THEREFORE IT WAS DETERMINED THAT THE SURVEILLANCE INTERVAL HAD NOT BEEN EXCEEDED. THE SUBJECT BREAKER WAS FUNCTIONALLY TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF TECHNICAL SPECIFICATION 4.8.4.2 AND WAS FOUND TO BE INOPERABLE. ON FEBRUARY 11, 1988, FURTHER REVIEW INDICATED THAT THE BREAKER HAD BEEN TESTED DURING THE PREOPERATIONAL TEST PROGRAM AND DID NOT MEET THE REQUIREMENTS OF TECHNICAL SPECIFICATION 4.8.4.2. FOLLOWING SURVEILLANCE TESTING ON THE SUPPLY BREAKER TO UNIT SUBSTATION 1-EDE-US-61, IT WAS SUBSEQUENTLY DETERMINED THAT THE TIE BREAKERS BETWEEN UNIT SUBSTATIONS 1-EDE-US-61 AND 1-EDE-US-63 AND BETWEEN 1-EDE-US-51 AND 1-EDE-US-53 HAD ALSO BEEN OMITTED FROM THIS TABLE. ACTIONS HAVE BEEN INITIATED TO ADD THESE BREAKERS TO THE LIST OF BREAKERS REQUIRING TESTING.

[138] SEQUOYAH 1 DOCKET 50-327 LER 87-039 REV 04
 UPDATE ON CONTROL ROOM EMERGENCY VENTILATION SYSTEM SINGLE FAILURE CRITERIA VIOLATED DUE TO A DESIGN ERROR WHICH COULD RESULT IN EXCEEDING ALLOWABLE EUSE TO OPERATORS.
 EVENT DATE: 071087 REPORT DATE: 051388 NSSS: WE TYPE: PWR
 OTHER UNITS INVOLVED: SEQUOYAH 2 (PWR)

(NSIC 209347) ON JULY 10, 1987, WITH UNITS 1 AND 2 IN MODE 5 (COLD SHUTDOWN), IT WAS DETERMINED THAT THE POTENTIAL EXISTED FOR A SINGLE FAILURE OF THE MAIN CONTROL ROOM (MCR) NORMAL PRESSURIZATION SYSTEM, WHEN OPERATING DURING A CONTROL ROOM ISOLATION (CRI) ACTUATION, TO VIOLATE GENERAL DESIGN CRITERIA (GDC)-19 OF 10 CFR 50 APPENDIX A, "CONTROL ROOM." A MALFUNCTION IN THE CONTROLLER OF THE OPERATING NORMAL PRESSURIZATION FAN COULD RESULT IN THE CONTROL BUILDING (CB) PRESSURE OF THE LOWER FLOORS EXCEEDING THE PRESSURE IN THE MCR THEREBY ALLOWING UNFILTERED, POTENTIALLY RADIOACTIVE AIR TO LEAK INTO THE MCR. IN ADDITION, A SINGLE FAILURE OF THE OPERATING NORMAL PRESSURIZATION FAN SUCTION DAMPER IN THE CLOSED POSITION COULD RESULT IN A LOWER THAN DESIGNED PRESSURE IN THE CB LOWER FLOORS, THEREBY CAUSING EXCESSIVE OUTLEAKAGE FROM THE MCR AND THE INABILITY OF THE CONTROL ROOM EMERGENCY VENTILATION SYSTEM (CREVS) TO MAINTAIN THE MCR HABITABILITY ZONE AT GREATER THAN OR EQUAL TO $\pm .125$ INCH WATER-GAUGE PRESSURE. TVA HAS SUBSEQUENTLY PERFORMED EXTENSIVE TESTING OF CREVS AND IDENTIFIED OTHER DEFICIENCIES THAT COULD AFFECT CREVS OPERABILITY. BECAUSE OF THESE DEFICIENCIES, THE DOSE TO MCR PERSONNEL FOLLOWING A POSTULATED DESIGN BASIS ACCIDENT WOULD HAVE EXCEEDED THE DOSE CALCULATED IN FINAL SAFETY ANALYSIS REPORT, SECTION 15.5.3

[139] SEQUOYAH 1 DOCKET 50-327 LER 87-042 REV 02
 UPDATE ON INADVERTENT STARTING OF FIRE PUMPS DURING A LOCA COULD DEGRADE THE AUXILIARY POWER SYSTEM BECAUSE OF A DESIGN ERROR.
 EVENT DATE: 072387 REPORT DATE: 052688 NSSS: WE TYPE: PWR
 OTHER UNITS INVOLVED: SEQUOYAH 2 (PWR)

(NSIC 209448) THIS REVISION PROVIDES ADDITIONAL INFORMATION CONCERNING THE LONG-TERM CORRECTIVE ACTION TVA HAS TAKEN TO PRECLUDE A POTENTIAL DEGRADATION OF THE AUXILIARY POWER SYSTEM DURING A LOSS OF COOLANT ACCIDENT (LOCA). A CONDITION ADVERSE TO QUALITY REPORT WAS INITIATED ON APRIL 14, 1987, WITH BOTH UNITS 1 AND 2 IN MODE 5 (COLD SHUTDOWN) DESCRIBING A CONDITION WHERE CALCULATIONS FOR THE AUXILIARY ELECTRIC POWER SYSTEM HAVE NOT INCLUDED THE EFFECT ON SAFETY-RELATED EQUIPMENT OF THE FIRE PUMPS STARTING AND RUNNING DURING A LOCA. THE FIRE PUMPS ARE SUPPLIED POWER FROM THE CLASS 1E POWER SYSTEM; HOWEVER, THE DESIGN BASIS FOR SEQUOYAH NUCLEAR PLANT DOES NOT INCLUDE A LOCA AND CONCURRENT FIRE. DURING A LOCA, THE CONTAINMENT TEMPERATURE CAN BE HIGH ENOUGH TO CAUSE THE FIRE PUMPS TO START BECAUSE OF THE ACTUATION OF THE TEMPERATURE SENSORS ON THE FIRE DETECTION SYSTEM. STARTING THE FIRE PUMPS CONCURRENT WITH A LOCA COULD POTENTIALLY DEGRADE THE AUXILIARY ELECTRIC POWER SYSTEM VOLTAGE AND THEREBY PREVENT SAFETY-RELATED EQUIPMENT FROM PERFORMING ITS INTENDED FUNCTION. THE ROOT CAUSE OF THE CONDITION WAS A DESIGN ERROR WHEN THE DESIGN ENGINEER DID NOT CONSIDER THE POSSIBILITY OF INADVERTENTLY STARTING THE FIRE PUMPS DURING A LOCA.

[140] SEQUOYAH 1 DOCKET 50-327 LER 87-049 REV 01
 UPDATE ON AN INADEQUATE PROCEDURE DURING CONSTRUCTION RESULTED IN IMPROPERLY SIZED MOTOR THERMAL OVERLOAD PROTECTION.
 EVENT DATE: 080687 REPORT DATE: 052488 NSSS: WE TYPE: PWR
 OTHER UNITS INVOLVED: SEQUOYAH 2 (PWR)

(NSIC 209348) THIS LER HAS BEEN REVISED IN ITS ENTIRETY TO DETAIL SEVERAL PROBLEMS THAT ARE ASSOCIATED WITH THERMAL OVERLOAD (TOL) PROTECTION DEVICES. THE MOST RECENT EVENTS INVOLVED THE TOLS BEING INCORRECTLY SIZED. THERE WERE SEVERAL ROOT CAUSES FOR THESE PROBLEMS IDENTIFIED, INCLUDING NONCONSERVATIVE ASSUMPTIONS IN DESIGN CALCULATIONS AND LACK OF COORDINATION BETWEEN DESIGN AND MAINTENANCE. TO PROVIDE THE DESIRED MARGIN FOR SAFE OPERATION, THE APPLICABLE CALCULATIONS WERE REVISED AND THE ASSOCIATED TOLS WERE REPLACED ACCORDINGLY. IN ORDER TO PREVENT RECURRENCE OF THESE EVENTS, A PROCEDURE METHOD WAS PREPARED TO ENSURE ALL LIMITING CONDITIONS IN DESIGN DOCUMENTS ARE IDENTIFIED ON THE DESIGN OUTPUT DOCUMENT. ALSO, BEFORE THE REPLACEMENT OF TOLS REQUIRING DIFFERENT SIZES, A DESIGN CHANGE WILL BE ISSUED AND DESIGN DRAWINGS WILL BE REVISED. THIS WILL PREVENT MAINTENANCE FROM CHANGING TOL SIZES WITHOUT OBTAINING A DESIGN CHANGE.

[141] SEQUOYAH 1 DOCKET 50-327 LER 88-014 REV 01
 UPDATE ON NONCOMPLIANCE WITH CONFIGURATION CONTROL REQUIREMENTS FOLLOWING A
 POSTMODIFICATION TEST OF A RADIATION MONITOR RESULTED IN A CONTAINMENT
 VENTILATION ISOLATION.
 EVENT DATE: 031488 REPORT DATE: 052488 NSSS: WE TYPE: PWR

(NSIC 209466) THIS REPORT IS BEING REVISED TO CLARIFY THE ROOT CAUSE AND INCLUDE
 ADDITIONAL CORRECTIVE ACTIONS TO BE IMPLEMENTED TO PREVENT RECURRENCE OF THIS
 EVENT. ON 3/14/88, WITH UNIT 1 IN MODE 5 (COLD SHUTDOWN), A TRAIN "A"
 CONTAINMENT VENTILATION ISOLATION (CVI) OCCURRED. AT APPROX. 1110 EST,
 INSTRUMENT MAINTENANCE (IM) PERSONNEL IMPROPERLY ACTUATED THE LOCAL START SWITCH
 FOR THE SAMPLE FLOW PUMP ON CONTAINMENT PURGE EXHAUST RADIATION MONITOR (RM)
 1-RM-90-130. THE SWITCH ACTUATION CAUSED A SPURIOUS HIGH RADIATION SPIKE WHICH
 WAS OF SUFFICIENT MAGNITUDE AND DURATION TO TRIP THE ASSOCIATED RM CIRCUITRY AND
 INITIATE A UNIT 1 "A" TRAIN CVI. OPERATIONS PERSONNEL VERIFIED THAT THE CVI WAS
 NOT CAUSED BY AN ACTUAL HIGH RADIATION CONDITION AND THEN RESET THE CVI. THE
 IMMEDIATE CAUSE OF THIS EVENT WAS AN ELECTROMAGNETIC INTERFERENCE (EMI)-INDUCED
 HIGH RADIATION SPIKE. DURING SUBSEQUENT INVESTIGATION, IT WAS DETERMINED THAT
 ACTUATION OF THE PUMP SWITCH INDUCED EMI TO THE RM SAMPLE PUMP STATUS (ON/OFF)
 CIRCUITRY AND RESULTED IN THE VI. THE ROOT CAUSE OF THIS EVENT WAS THE FAILURE
 OF IM PERSONNEL TO COMPLY WITH APPLICABLE CONFIGURATION CONTROL REQUIREMENTS.
 CORRECTIVE ACTION: THE CVI WAS RESET, AND A MEMO SENT STATING THE RM TRIP SIGNAL
 BE BLOCKED UPON PERFORMING ANY WORK.

[142] SEQUOYAH 1 DOCKET 50-327 LER 88-016 REV 01
 UPDATE ON INADVERTENT ACTUATION OF MAIN STEAM LINE ISOLATION DUE TO HIGH STEAM
 FLOW SIGNAL.
 EVENT DATE: 032488 REPORT DATE: 052688 NSSS: WE TYPE: PWR

(NSIC 209467) THIS LER IS BEING REVISED TO PROVIDE ADDITIONAL INFORMATION
 REGARDING: AN INVESTIGATION INTO THE CAUSE OF THE EVENT DESCRIBED HEREIN AND THE
 CORRECTIVE ACTION TO BE TAKEN BY TVA TO PREVENT RECURRENCE OF THIS EVENT. ON
 3/24/88, AT APPROXIMATELY 1021 EST WITH UNIT 1 IN MODE 5, AN UNPLANNED MAIN STEAM
 LINE ISOLATION SIGNAL OCCURRED. THIS SIGNAL WAS GENERATED WHEN AN INADVERTENT
 ACTUATION OF HIGH STEAM FLOW BISTABLE (1-FS-1-21A) WAS ALREADY IN THE TRIPPED
 CONDITION BECAUSE OF ONGOING MAINTENANCE WORK. ALSO, THE LO-LO TAVG (REACTOR
 COOLANT SYSTEM AVERAGE TEMPERATURE BELOW 540 DEGREES F) AND LOW STEAM LINE
 PRESSURE (BELOW 600 PSIG) SIGNALS WERE PRESENT BECAUSE OF THE PLANT BEING IN MODE
 5. THEREFORE, ALL THE REQUIRED LOGIC WAS COMPLETED (HIGH STEAM FLOW IN TWO OUT
 OF FOUR LOOPS COINCIDENT WITH LO-LO TAVG OR LOW STEAM LINE PRESSURE IN TWO OUT OF
 FOUR LOOPS) TO GIVE THE ENGINEERED SAFETY FEATURE ACTUATION SIGNAL. THE SAFETY
 INJECTION (SI) SIGNAL ALSO GENERATED FROM THIS LOGIC WAS BLOCKED AS ALLOWED BY
 TECH SPEC 3.3.2.1 BELOW PERMISSIVE P-12 (TAVG BELOW 540 DEGREES F). THEREFORE,
 SINCE THE MAIN STEAM ISOLATION VALVES WERE ALREADY CLOSED FOR MODE 5 AND THE
 AUTOMATIC SI CIRCUITRY WAS BLOCKED AS ALLOWED BY TECH SPEC, NO EQUIPMENT WAS
 ACTUATED, AND NO IMMEDIATE RECOVERY OR RESET ACTIONS WERE NECESSARY.

[143] SEQUOYAH 1 DOCKET 50-327 LER 88-018
 INCOMPLETE POSTING OF SIGNS PROHIBITING THE USE OF PORTABLE RADIOS RESULTED IN
 RADIO TRANSMISSION INTERFERENCE AND SUBSEQUENT GENERATION OF A REACTOR TRIP
 SIGNAL.
 EVENT DATE: 041188 REPORT DATE: 051088 NSSS: WE TYPE: PWR

(NSIC 209360) ON APRIL 11, 1988, AT APPROXIMATELY 0150 EDT, WHILE UNIT 1 WAS IN
 MODE 5 (COLD SHUTDOWN), A FIRST OUT REACTOR TRIP ANNUNCIATOR WAS RECEIVED IN THE
 MAIN CONTROL ROOM FOR STEAM FLOW/FEED FLOW MISMATCH, COINCIDENT WITH LOW STEAM
 GENERATOR LEVEL. THE ALARM WAS ACKNOWLEDGED AND THEN A SIMILAR FIRST OUT REACTOR
 TRIP ANNUNCIATOR ALARMED AT APPROXIMATELY 0153 EDT. A REACTOR TRIP DID NOT OCCUR
 AS A RESULT OF THESE SIGNALS BECAUSE THE REACTOR TRIP BREAKERS HAD PREVIOUSLY

BEEN OPENED. THE IMMEDIATE CAUSE OF THIS EVENT HAS BEEN ATTRIBUTED TO MODIFICATIONS PERSONNEL MAKING RADIO TRANSMISSIONS FROM THE NUMBER 4 ACCUMULATOR ROOM TO SUPPORT VALVE TESTING. THE NUMBER 4 ACCUMULATOR ROOM CONTAINS REACTOR PROTECTION SYSTEM CIRCUITS FROM THE NUMBER 3 STEAM GENERATOR LEVEL AND STEAM FLOW TRANSMITTERS. THE ROOT CAUSE OF THIS EVENT HAS BEEN ATTRIBUTED TO INADEQUATE POSTING OF SIGNS TO PROHIBIT THE USE OF PORTABLE RADIOS IN OR NEAR THE ACCUMULATOR ROOMS. AS IMMEDIATE CORRECTIVE ACTION, PERSONNEL WILL BE BETTER INFORMED REGARDING THE PROHIBITION OF RADIO TRANSMISSION AROUND THE ACCUMULATOR ROOMS BY POSTING ADDITIONAL SIGNS IN THE VICINITY OF THE ACCUMULATOR ROOMS. TO PREVENT RECURRENCE OF THIS EVENT, TVA WILL ENSURE THAT PLANT PERSONNEL ARE COGNIZANT OF THE REQUIREMENTS OF SQ036, "CONTROL AND USE OF PORTABLE RADIOS."

[144] SHOREHAM DOCKET 50-322 LER 88-004
SEISMIC MONITORING INSTRUMENTATION IN REACTOR BUILDING OUT OF SERVICE FOR MORE THAN 30 DAYS.
EVENT DATE: 041488 REPORT DATE: 052488 NSSS: GE TYPE: BWR

(NSIC 209463) THIS SPECIAL REPORT IS SUBMITTED PURSUANT TO TECH SPEC 6.9.2 TO COMPLY WITH TECH SPEC 3.3.7.2. ON APRIL 24, 1988 SEISMIC MONITORING INSTRUMENTS (ACCELEROGRAPHS) IN THE REACTOR BUILDING WERE TAKEN OUT OF SERVICE FOR CALIBRATION. CURRENTLY THERE ARE 3 ACCELEROGRAPHS THAT HAVE BEEN INOPERABLE FOR 30 DAYS, AND SHORTLY THERE WILL BE 2 MORE. THESE INSTRUMENTS HAVE BEEN SUCCESSFULLY RECALIBRATED AND ARE AWAITING A SURVEY TEAM TO VERIFY EXACT PLACEMENT OF THE ACCELEROGRAPHS. THIS IS AN 18 MONTH FREQUENCY SURVEILLANCE; THE LAST TIME THE SURVEILLANCE WAS RUN, THE TIME OUT OF SERVICE LIMITATIONS WERE EXCEEDED FOR THE ACCELEROGRAPHS AND A SPECIAL REPORT WAS REQUIRED (SEE LER 87-002). THE FIX AT THAT TIME WAS TO REVISE THE PROCEDURE THAT WOULD MINIMIZE THE TIME OUT OF SERVICE FOR THE VARIOUS SEISMIC INSTRUMENTS WHEN DOING ROUTINE REPAIRS OR CALIBRATIONS. WHILE AWAITING ISSUANCE OF THE NEWLY REVISED PROCEDURE, THE CURRENT PROCEDURE WAS USED TO PERFORM THIS TECH SPEC REQUIRED INSTRUMENT CALIBRATION. THE NEW PROCEDURE HAS BEEN APPROVED AND WILL BE ISSUED IN TWO WEEKS. THIS WILL ELIMINATE THE INSTRUMENT TIME OUT OF SERVICE PROBLEM.

[145] SHOREHAM DOCKET 50-322 LER 88-006
EMERGENCY BUS 101 DEENERGIZED DUE TO PERSONNEL ERROR DURING I&C SURVEILLANCE TEST RESULTING IN EDG START AND LOAD AND NUMEROUS ESF ACTUATIONS.
EVENT DATE: 043088 REPORT DATE: 052788 NSSS: GE TYPE: BWR

(NSIC 209465) ON APRIL 30, 1988, AT 1245, A LOSS OF EMERGENCY BUS 101 OCCURRED WITH A SUBSEQUENT START OF EDG 101 AND NUMEROUS ESF ACTUATIONS DUE TO PERSONNEL ERROR. THE PLANT WAS IN OPERATIONAL CONDITION 4 (COLD SHUTDOWN) WITH THE MODE SWITCH IN SHUTDOWN AND ALL RODS INSERTED IN THE CORE. AN INSTRUMENT AND CONTROLS (I&C) TECHNICIAN WAS PERFORMING A SURVEILLANCE TEST ON THE EMERGENCY BUS LOAD PROGRAM (SP 44.309.04). BY PROCEDURE, HE LIFTED A LEAD TO PREVENT THE EMERGENCY BUS 101 FROM BECOMING COMPLETELY DE-ENERGIZED. BEFORE GOING TO LUNCH, THE TECHNICIAN RE-LANDED THIS LEAD TO RESTORE THE EMERGENCY BUS PROGRAM TO NORMAL. FOLLOWING LUNCH, THE TECHNICIAN FORGOT HE HAD RE-LANDED THE LIFTED LEAD AND PROCEEDED AS IF THE LEAD WAS LIFTED. AT 1245, THROUGH RELAY ACTUATION DUE TO TESTING, THE EMERGENCY BUS WAS DE-ENERGIZED. THIS RESULTED IN THE ACTUATION OF THE EMERGENCY BUS PROGRAM. THE EMERGENCY DIESEL GENERATOR (101) STARTED AND ITS OUTPUT BREAKER CLOSED ON THE DE-ENERGIZED EMERGENCY BUS. NUMEROUS ESF ACTUATIONS ALSO OCCURRED. THE DIESEL STARTED AND RAN WITHOUT INCIDENT FOR 45 MINUTES. THE BUS WAS RETURNED TO ITS NORMAL AND THE EDG SHUT DOWN. THE TECHNICIAN WHO PERFORMED THIS TEST WAS PROHIBITED FROM ANY FURTHER TESTING PENDING FURTHER TRAINING AND DISCIPLINARY ACTION.

[146] SHOREHAM DOCKET 50-322 LER 88-005
 METEOROLOGICAL INSTRUMENTATION OUT OF CALIBRATION.
 EVENT DATE: 050988 REPORT DATE: 052688 NSSS: GE TYPE: BWR

(NSIC 209464) THIS IS A SPECIAL REPORT SUBMITTED UNDER TECH SPEC 6.9.2 AS REQUIRED BY TECH SPEC 3.3.7.3 UNDER THE ACTION STATED THEREIN. THE INSTRUMENT AND CONTROL (I&C) SECTION IS CURRENTLY UNABLE TO CALIBRATE THE METEOROLOGICAL INSTRUMENTS AS SPECIFIED IN REGULATORY GUIDE 1.23. THE APPLICABLE TOLERANCE CALLED OUT IN THE REG GUIDE IS: WIND DIRECTION +/- 5 DEGREES. THE APPLICABLE PROCEDURE SP 44.654.02 (RFL TELEMETER SYSTEM CALIBRATION) ACCEPTANCE CRITERIA WAS NOT ABLE TO BE MET AND A LIMITING CONDITION FOR OPERATION (LCO) WAS DECLARED 5/9/88. THE CAUSE OF THIS PROBLEM IS THE INABILITY OF THE INSTALLED INSTRUMENTATION TO MEET THE RECOMMENDED TOLERANCE OF THE REG GUIDE. EVEN THOUGH THE INSTRUMENTATION IS IN SERVICE AND AVAILABLE FOR USE, IT IS BY DEFINITION INOPERABLE BECAUSE TECH SPEC BASES STATE THAT THE INSTRUMENTATION SHOULD BE CONSISTENT WITH THE RECOMMENDATIONS OF THE REG GUIDE. A REVIEW IS BEING CONDUCTED TO ENSURE PROPER INFORMATION IS INCLUDED IN THE SEMI-ANNUAL EFFLUENT RELEASE REPORT. AN INVESTIGATION BY I&C IS BEING CONDUCTED TO DETERMINE IF ALTERNATIVE CALIBRATION TECHNIQUES COULD BE EMPLOYED TO IMPROVE THE ACCURACY OF THE INSTRUMENTATION.

[147] ST. LUCIE 2 DOCKET 50-389 LER 88-004
 MISSED SURVEILLANCE OF SPECIFIC ACTIVITY SAMPLE ANALYSIS DUE TO EQUIPMENT FAILURE AND PERSONNEL ERROR.
 EVENT DATE: 040788 REPORT DATE: 050988 NSSS: CE TYPE: PWR

(NSIC 209282) ON APRIL 7, 1988, ST LUCIE UNIT 2 WAS IN MODE 1 AND AT 100% POWER. DURING A PLANNED DOWNPOWER, A THERMAL POWER CHANGE OF 21% IN ONE HOUR WAS ACHIEVED. PLANT'S TECHNICAL SPECIFICATIONS REQUIRE THAT DURING A POWER CHANGE EXCEEDING 15% IN ONE HOUR, A SAMPLE OF THE REACTOR COOLANT SPECIFIC ACTIVITY ON DOSE EQUIVALENT IODINE I-131 (DEQ I-131) BE TAKEN 2 TO 6 HOURS FOLLOWING THE POWER CHANGE. A SAMPLE WAS TAKEN AT 0841 EDT ON APRIL 8, 1988, 8 HOURS PAST THE TIME LIMIT. THE ROOT CAUSE WAS A PROGRAM ERROR ON THE THERMAL POWER CHANGE (QRP) ALARM SETPOINT. THE ALARM WAS SET AT 27.45% INSTEAD OF 15% THERMAL POWER CHANGE. THE ALARM DID NOT ACTUATE WHEN A 21% POWER CHANGE WAS REACHED. A CONTRIBUTING FACTOR WAS A COGNITIVE PERSONNEL ERROR BY A LICENSED UTILITY OPERATOR FOR FAILURE TO VERIFY THE ACTUAL POWER CHANGE AND HIS FAILURE TO NOTIFY CHEMISTRY DEPARTMENT TO TAKE AND DO A SAMPLE ANALYSIS. THE SAMPLE ANALYSIS SHOWED THE SPECIFIC ACTIVITY TO BE 0.0689 MICROCURIE PER GRAM DEQ I-131, WELL BELOW THE TECHNICAL SPECIFICATION LIMIT OF 1 MICROCURIE PER GRAM DEQ I-131. THE PROGRAM ERROR WAS CORRECTED AND THE ALARM SETPOINT WAS TESTED AND VERIFIED TO ACTUATE AT 15% POWER CHANGE. THE HEALTH AND SAFETY OF THE PUBLIC WAS NOT ENDANGERED DURING THE EVENT.

[148] SUMMER 1 DOCKET 50-395 LER 88-004
 TWO 2-INCH CORE DRILLS FOUND UNSEALED DUE TO UNKNOWN CAUSES.
 EVENT DATE: 052681 REPORT DATE: 042288 NSSS: WE TYPE: PWR

(NSIC 209021) TWO 2-INCH CORE DRILLS CONTAINING ONE AND A HALF INCH CONDUIT WERE FOUND UNSEALED. A REVIEW OF CONSTRUCTION DOCUMENTATION IDENTIFIED THAT BOTH CORE DRILLS WERE INSTALLED UNDER A FIELD CHANGE REQUEST "B" THAT WAS INITIATED IN MAY 1981. THE ELECTRICAL CIRCUITS CONTAINED IN THE CONDUITS ARE IDENTIFIED ON THE E-SERIES (ELECTRICAL) DRAWINGS; HOWEVER, THE CORE DRILLS WERE NOT IDENTIFIED ON THE COMPOSITE (FLOOR/WALL LAYOUT) DRAWINGS. IMMEDIATELY UPON DISCOVERY, THE SHIFT SUPERVISOR WAS NOTIFIED, A CONTINUOUS FIRE WATCH ESTABLISHED, AND A PRIORITY 1 MAINTENANCE WORK REQUEST INITIATED FOR REPAIR. THE CONSEQUENCES DUE TO THIS EVENT WERE MINIMAL. THE CORE DRILL PENETRATED FIFTY-ONE INCHES OF CONCRETE AND EACH TWO INCH CORE DRILL HAS A ONE AND A HALF INCH CONDUIT PASSING THROUGH IT WHICH REDUCES THE PENETRATION OPENING TO ONE QUARTER INCH AROUND THE INSIDE CIRCUMFERENCE. THE FIRE LOADING IN EACH AREA, AS PROVIDED IN THE FIRE PROTECTION

EVALUATION REPORT, IS SUCH A SMALL VALUE THAT THE REQUIRED FIRE BARRIER BETWEEN THE AREAS WOULD BE LESS THAN THIRTY MINUTES. IN ADDITION, NO SAFE SHUTDOWN EQUIPMENT IS LOCATED IN THE AFFECTED AREAS. TWO ADDITIONAL WALLS HAVE BEEN INSPECTED WITH THE RESIDENT NRC INSPECTOR PRESENT DURING THE INSPECTION OF ONE AND NO DISCREPANCIES IDENTIFIED. THE LICENSEE CONSIDERS THIS TO BE AN ISOLATED EVENT AND PLANS NO ADDITIONAL ACTION.

[149] SURRY 1 DOCKET 50-280 LER 88-010
 INOPERABLE INDIVIDUAL ROD POSITION INDICATORS DUE TO INSTRUMENT DRIFT.
 EVENT DATE: 041088 REPORT DATE: 051088 NSSS: WE TYPE: PWR
 VENDOR: MAGNETICS DIV SPANG INDUSTRIES, INC.

(NSIC 209267) ON APRIL 9, 1988 AT 1400 HOURS, FOLLOWING A REACTOR SHUTDOWN, WITH UNIT 1 SOURCE RANGE INSTRUMENTATION AT 200 COUNTS PER SECOND, IT WAS OBSERVED THAT THE INDIVIDUAL ROD POSITION INDICATORS (IRPIS) (EIIS-ZI) FOR ALL CONTROL RODS (EIIS-ROD) IN SHUTDOWN BANKS 'A' AND 'B' DIFFERED FROM THE ROD GROUP DEMAND COUNTER BY GREATER THAN 12 STEPS. THE IRPI POSITIONS WERE LOGGED AND THE INTERPRETATION OF TECHNICAL SPECIFICATION (T.S.) 3.12.E WAS APPLIED. THIS INTERPRETATION WAS THAT THE 12 STEP DEVIATION FROM THE GROUP DEMAND COUNTER APPLIED AT HOT SHUTDOWN AND ABOVE. SUBSEQUENTLY, ON APRIL 10, 1988 AT 0335 HOURS, A REEVALUATION DETERMINED THAT THE IRPIS WERE INOPERABLE AS T. S. 3.12.E APPLIED WHENEVER THE REACTOR TRIP BREAKERS WERE CLOSED AND THE CONTROL RODS WERE NOT FULLY INSERTED. TECHNICAL SPECIFICATION 3.0 WAS ENTERED EFFECTIVE 1400 HOURS ON APRIL 9, 1988 WHEN THE IRPIS WERE OBSERVED TO VARY GREATER THAN 12 STEPS FROM THE DEMAND COUNTER. A WORK REQUEST WAS SUBMITTED TO CALIBRATE THE IRPIS. THE REACTOR TRIP BREAKERS WERE OPENED AT 1758 HOURS ON APRIL 10, 1988. A PROPOSED T. S. CHANGE IS BEING EVALUATED WHICH WILL RECOGNIZE THE EFFECT OF TEMPERATURE ON THE ROD POSITION INDICATORS. A SETPOINT CHANGE IS BEING EVALUATED WHICH WILL LOWER THE P-250 ROD DEVIATION ALARM TO WARN THE OPERATOR BEFORE THE 12 STEP DEVIATION IS REACHED.

[150] SURRY 1 DOCKET 50-280 LER 88-011
 FAIL TO MANUALLY OPEN PORVS.
 EVENT DATE: 041588 REPORT DATE: 051188 NSSS: WE TYPE: PWR

(NSIC 209312) ON APRIL 15, 1988 AT 0505 HOURS, UNIT 1 WAS AT COLD SHUTDOWN WITH REACTOR COOLANT TEMPERATURE AT 130 DEGREES FAHRENHEIT AND PRESSURE AT 40 PSIG. DURING A NORMAL DEPRESSURIZATION EVOLUTION, BOTH POWER OPERATED RELIEF VALVES (PORV EIIS-RV) PCV-1455C AND PCV-1456 FAILED TO MANUALLY OPEN WHEN THE RESPECTIVE THREE POSITION (CLOSE-AUTO-OPEN) SELECTOR SWITCHES WERE PLACED IN THE OPEN POSITION FROM THE AUTO POSITION. BOTH PORVS WERE LATER OPENED WHEN THE SELECTOR SWITCHES WERE PLACED IN THE OPEN POSITION FROM THE CLOSED POSITION. THESE VALVES WERE DECLARED INOPERABLE AND LEFT OPEN IN ACCORDANCE WITH TECHNICAL SPECIFICATION T. S. 3.1.G. A FOUR HOUR EVENT NOTIFICATION WAS SUBMITTED IN ACCORDANCE WITH 10CFR50.72(B)(2)(III)(D). THIS EVENT IS REPORTABLE PURSUANT TO 10CFR50.73(A)(2)(V)(D). THE CAUSE OF THE PORV MALFUNCTION IS BEING INVESTIGATED. THE SELECTOR SWITCHES, AIR SUPPLY AND VALVES WILL BE EXAMINED FOR MALFUNCTIONS.

[151] SURRY 1 DOCKET 50-280 LER 88-014
 FAILURE TO COMPLY WITH TECHNICAL SPECIFICATION DUE TO ADMINISTRATIVE OVERSIGHT.
 EVENT DATE: 042188 REPORT DATE: 051188 NSSS: WE TYPE: PWR
 VENDOR: ROBERTSHAW CONTROLS COMPANY

(NSIC 209313) ON APRIL 21, 1988 AT 1700 HOURS, WITH UNIT 1 IN REFUELING SHUTDOWN, DURING THE PERFORMANCE OF A PERIODIC TEST, THE THREE CONTAINMENT SMOKE DETECTORS (EIIS-IC) LOCATED IN THE AIR RECIRCULATION DUCT WORK WERE DETERMINED TO BE INOPERABLE. TECHNICAL SPECIFICATION 3.21.B.1 REQUIRES THAT A MINIMUM OF ONE OF THESE DETECTORS BE OPERABLE OR A FIRE PATROL WATCH INSPECT THE AREA HOURLY. A

THE EVENT OF A FIRE. THIS CONDITION APPEARS TO HAVE BEEN OVERLOOKED DURING THE PREVIOUS PERFORMANCE OF THE SURVEILLANCE. UPON NOTIFICATION OF THE INOPERABLE FIRE DAMPERS, THE REQUIRED COMPENSATORY ACTIONS WERE IMPLEMENTED PER TECHNICAL SPECIFICATION 3.7.7. AS THE EXACT DATE WHEN THESE FIRE DAMPERS BECAME INOPERABLE CANNOT BE DETERMINED, THIS OCCURRENCE IS BEING REPORTED PER 10CFR50.73(A)(2)(I)(B). THE FIRE DAMPERS WERE REPAIRED BY INSTALLATION OF THE APPROPRIATE FUSIBLE LINK INTO THE CHAIN MECHANISM UNDER WORK AUTHORIZATION (WA) V83578. FURTHER REVIEW REVEALED THAT THE FUSIBLE LINK WAS PROPERLY INSTALLED IN THE REMAINING SIX SIMILAR FIRE DAMPERS AT THE STATION. THE ABOVE CONDITION IS BEING REVIEWED WITH THE APPROPRIATE INSPECTION PERSONNEL.

[155] THREE MILE ISLAND 1 DOCKET 50-289 LER 88-001
FAILURE OF CRD BREAKER UNDERVOLTAGE DEVICE DURING SURVEILLANCE TESTING.
EVENT DATE: 031688 REPORT DATE: 060388 NSSS: BW TYPE: PWR
VENDOR: GENERAL ELECTRIC CO.

(NSIC 209527) AT APPROXIMATELY 1100 HOURS ON MARCH 16, 1988 DURING THE REACTOR PROTECTION SYSTEM SURVEILLANCE TEST, A CONTROL ROD DRIVE (CRD) BREAKER FAILED THE UNDERVOLTAGE (UV) TRIP TEST. THE BREAKER DID HOWEVER TRIP VIA THE SHUNT TRIP DEVICE. THE UV TRIP PADDLE HAD LODGED OVER THE UV ARMATURE DISK. THIS EVENT IS NOT REPORTABLE IN ACCORDANCE WITH 10 CFR 50.72 OR 50.73. THEREFORE THIS LER IS SUBMITTED VOLUNTARILY. THE BREAKER WAS REPLACED AND TESTED SATISFACTORILY. INVESTIGATION REVEALED DEFECTS IN TWO PARTS (THE UNDERVOLTAGE DEVICE ARMATURE DISK AND THE UNDERVOLTAGE TRIP PADDLE). BOTH PARTS WERE REPLACED AND THE UNIT TESTED SATISFACTORILY. NO SAFETY SYSTEMS ACTUATED AS A RESULT OF THIS COMPONENT FAILURE. THIS MALFUNCTION WOULD NOT HAVE PREVENTED THE BREAKER FROM TRIPPING BECAUSE OF THE REDUNDANT SHUNT TRIP DEVICE FEATURE. REDUNDANT BREAKERS ARE ALSO PROVIDED. ALL CRD BREAKERS WILL BE CHECKED. MAINTENANCE PROCEDURES WILL BE CHANGED TO PROVIDE DIRECTION FOR VERIFYING DIMENSIONS. RECEIPT INSPECTION FOR REPLACEMENT PARTS WILL BE REQUIRED IF THE VENDOR CANNOT PROVIDE DIMENSIONAL CERTIFICATION.

[156] THREE MILE ISLAND 2 DOCKET 50-320 LER 88-007
CONTAINMENT AIRLOCK DOOR DISCOVERED IN THE OPEN POSITION.
EVENT DATE: 042888 REPORT DATE: 052788 NSSS: BW TYPE: PWR

(NSIC 209462) AT APPROXIMATELY 1445 HOURS ON APRIL 28, 1988, A FUEL HANDLING SENIOR REACTOR OPERATOR (FHSRO) OBSERVED THAT ONLY ONE (1) OF THE TWO (2) REACTOR BUILDING (RB) PERSONNEL AIRLOCK (PAL) DOORS WAS BEING MAINTAINED IN THE CLOSED POSITION ALTHOUGH THERE WAS NO RB ENTRY OR EXIT IN PROGRESS. TMI-2 TECH SPEC 3.6.1.3 REQUIRES THAT EACH CONTAINMENT AIRLOCK SHALL BE OPERABLE WITH BOTH DOORS CLOSED EXCEPT WHEN THE AIRLOCK IS BEING USED FOR TRANSIT ENTRY AND EXIT THROUGH THE CONTAINMENT; THEN, AT LEAST ONE (1) DOOR SHALL BE CLOSED. THUS, THE CONDITION IDENTIFIED BY THE FHSRO IS REPORTABLE PER 10 CFR 50.73(A)(2)(I)(B) DUE TO A CONDITION PROHIBITED BY THE PLANT'S TECH SPECS. THE ROOT CAUSE OF THIS EVENT WAS PERSONNEL ERROR BY THE AIRLOCK ATTENDANTS AND ENTRY SUPERVISORS, BASED ON A LACK OF UNDERSTANDING OF THE ABOVE TECH SPEC REQUIREMENT. CONTRIBUTING CAUSES INCLUDED A FAILURE OF THE OPERATORS TO SPECIFY THE AIRLOCK DOORS TO SPECIFY THE REFERENCED TECH SPEC REQUIREMENTS. A LACK OF UNDERSTANDING ON THE PART OF SOME LICENSED OPERATORS CONCERNING THE REQUIREMENTS OF THIS TECH SPEC AS IT RELATED TO FREQUENT CONTAINMENT ACCESS. IT WAS GENERALLY MISUNDERSTOOD THAT IT WAS ACCEPTABLE FOR THE OUTER PAL DOOR TO BE LEFT OPEN AND THE INNER PAL DOOR CLOSED IN ANTICIPATION OF PERSONNEL ENTERING OR EXITING THE RB.

[157] THREE MILE ISLAND 2 DOCKET 50-320 LER 88-008
REMOVAL OF TRASH FROM A RADIOLOGICALLY CONTROLLED AREA WITHOUT PROPER SURVEY.
EVENT DATE: 050488 REPORT DATE: 060388 NSSS: BW TYPE: PWR

(NSIC 209571) THIS LER DESCRIBES TWO (2) EVENTS INVOLVING REMOVAL OF TRASH CONTAINING SOLID CONTAMINATED DEBRIS IN EXCESS OF ESTABLISHED LIMITS. THE FIRST EVENT INVOLVED A HOUSEKEEPING ACTIVITY IN A RADIOLOGICALLY CLEAN AREA AND THE SECOND INVOLVED REMOVAL OF TRASH FROM A RADIOLOGICALLY CONTROLLED AREA (RCA) WITHOUT PROPER RELEASE SURVEYS. THE GPU NUCLEAR CORPORATION RADIATION PROTECTION PLAN, A TMI-2 LICENSING BASIS DOCUMENT PER THE TMI-2 TECH SPECS, ESTABLISHES LIMITS FOR UNRESTRICTED RELEASE OF 1000 DPM/100 CM(2) LOOSE SURFACE CONTAMINATION AND 5000 DPM/100 CM(2) TOTAL (FIXED PLUS REMOVABLE). THEREFORE, THIS EVENT IS REPORTABLE PURSUANT TO 10 CFR 20.405(A)(1)(V) SINCE THE CONTAMINATION LEVELS DISCOVERED AT THE TRASH COMPACTOR WERE IN EXCESS OF TEN (10) TIMES THE LIMIT SET FORTH IN THE PLAN. THE EARLIEST EVENT DATE OF THIS LER IS MAY 4, 1988; THUS, THE DUE DATE OF THIS REPORT IS JUNE 3, 1988 (I.E., 30 DAYS FROM DETERMINATION OF REPORTABILITY). IN BOTH EVENTS, A RADIOLOGICAL CONTROLS TECHNICIAN WAS PERFORMING A ROUTINE SURVEY AT THE TRASH COMPACTOR AND DISCOVERED SEVERAL BAGS OF TRASH CONTAMINATED TO VARIOUS LEVELS IN EXCESS OF ALLOWABLE LIMITS. THE BAGS WERE REMOVED TO A CONTROLLED AREA AND SURVEYED; THE CONTAMINATED MATERIAL WAS REMOVED AND IDENTIFIED.

[158] TROJAN DOCKET 50-344 LER 87-008 REV 01
 UPDATE ON FUEL PARTICLES CONTAMINATING CONTAINMENT AND TECHNICIAN EXPOSURE TO RADIATION.
 EVENT DATE: 040987 REPORT DATE: 070187 NSSS: WE TYPE: PWR
 VENDOR: WESTINGHOUSE ELECTRIC CORP.

(NSIC 209194) AT ABOUT 1400 HRS ON APRIL 9, 1987, RADIOACTIVE CONTAMINATION WAS DISCOVERED ON WORKERS INSIDE CONTAINMENT. THE CONTAMINATION WAS FOUND TO CONSIST OF DECAYED FISSION PRODUCTS. THE SOURCE OF THE CONTAMINATION WAS FUEL PELLET FRAGMENTS LOCATED ON THE REACTOR VESSEL FLANGE NEAR STUD HOLE NUMBER 48. THE FUEL PELLET ORIGINATED FROM FUEL ROD FAILURES THAT OCCURRED IN 1980-1982. WORK INSIDE CONTAINMENT WAS STOPPED. THE MAJORITY OF FUEL FRAGMENTS ON THE REACTOR FLANGE WERE RETRIEVED. FOLLOWING RESUMPTION OF WORK INSIDE CONTAINMENT, AT ABOUT 1050 HRS ON APRIL 17, 1987, THE TECHNICIAN'S EXPOSURE FOR THE SECOND QUARTER WAS SUBSEQUENTLY DETERMINED TO BE 1.21 REM TO THE WHOLE BODY, 4.62 REM TO THE SKIN, AND 9.57 REM TO THE EXTREMITIES. WORK INSIDE THE CONTAINMENT WAS STOPPED FOR ONE WEEK. NEW PROCEDURES WERE DEVELOPED FOR RADIATION SURVEYING, CONTAMINATION CONTROL OF RADIOACTIVE PARTICLES, AND DECONTAMINATION. TRAINING WAS PERFORMED ON THE NEW PROCEDURES. EXTENSIVE SURVEYING WAS PERFORMED, AND DECONTAMINATION WAS COMPLETED AS NECESSARY, PRIOR TO THE INITIATION OF REFUELING. THESE EVENTS HAD NO EFFECT ON PUBLIC HEALTH AND SAFETY.

[159] TROJAN DOCKET 50-344 LER 88-006
 CENTRIFUGAL CHARGING PUMP SEAL LEAKAGE GREATER THAN FINAL SAFETY ANALYSIS REPORT ASSUMED LIMITS.
 EVENT DATE: 040588 REPORT DATE: 050588 NSSS: WE TYPE: PWR
 VENDOR: KANE PACKING CO.

(NSIC 209775) ON APRIL 5, 1988, IT WAS DISCOVERED THAT THE "B" CENTRIFUGAL CHARGING PUMP (CCP) WAS LEAKING THROUGH ITS MECHANICAL SHAFT SEAL TO THE AUXILIARY BUILDING ATMOSPHERE AT 50 CUBIC CENTIMETERS (CC)/MINUTE (3000 CC/HR). THE CCP IS LOCATED IN THE EMERGENCY CORE COOLING SYSTEM FLOW PATH AND THE LEAKAGE EXCEEDED THE 1500 CC/HR ASSUMED IN THE FINAL SAFETY ANALYSIS REPORT (FSAR) FOR SYSTEMS OUTSIDE CONTAINMENT WHICH COULD CONTAIN RADIOACTIVE WATER FOLLOWING A DESIGN BASIS ACCIDENT (DBA). THIS LEAKAGE COULD HAVE RESULTED IN THYROID DOSES TO CONTROL ROOM OPERATORS FOLLOWING A DBA EXCEEDING THOSE STATED IN THE FSAR. THE CONTROL ROOM EMERGENCY VENTILATION SYSTEMS WERE DECLARED INOPERABLE UNTIL THE LEAKAGE WAS STOPPED. THE CAUSE OF THIS EVENT WAS LEAKAGE THROUGH THE MECHANICAL SEAL OF CCP "B". THE SEAL LEAKAGE WAS DUE TO UNEVEN WEAR ON THE SEALS AND A BUILDUP OF BORIC ACID CRYSTALS ON THE SEALS AND SEALING SURFACES WHILE THE PUMP WAS IDLE. CCP "B" WAS ISOLATED TO STOP THE LEAK 35 MINUTES AFTER ITS DISCOVERY.

THE PUMP'S MECHANICAL SEAL WAS REPLACED, AND THE PUMP WAS RETURNED TO OPERABLE STATUS ON APRIL 7. OPERATING PRACTICE WILL BE REVISED TO PROVIDE FOR MORE FREQUENT PUMP OPERATION TO PREVENT BORIC ACID BUILDUP ON THE SEALS. THIS EVENT HAD NO EFFECT ON PUBLIC HEALTH AND SAFETY.

[160] TROJAN DOCKET 50-344 LER 88-007
CONTROL ROOM NORMAL AIR CONDITIONING SYSTEM ISOLATION LUE TO SPURIOUS HIGH CHLORINE SIGNAL.
EVENT DATE: 041088 REPORT DATE: 051088 NSSS: WE TYPE: PWR
VENDOR: FISCHER & PORTER CO.

(NSIC 209276) ON APRIL 10, 1988, AN OPERATOR OBSERVED APPARENT INDICATION OF LOW SAMPLE FLOW ON THE CHANNEL "B" CHLORINE DETECTOR LOCATED AT THE CONTROL ROOM NORMAL AIR CONDITIONING SYSTEM (CB-2) AIR INTAKE. DURING INVESTIGATION OF THE LOW FLOW RATE, A MOMENTARY SPURIOUS HIGH CHLORINE ALARM WAS INITIATED ON THIS INSTRUMENT WHICH GENERATED AN ISOLATION SIGNAL FOR CB-2. THE CHANNEL "B" CHLORINE DETECTOR WAS CONFIRMED TO HAVE A LOW SAMPLE FLOW RATE AND WAS DECLARED INOPERABLE. MAINTENANCE WAS INITIATED WHICH RESULTED IN REPLACEMENT OF THE CHLORINE DETECTOR. THE CHLORINE DETECTOR WAS REENERGIZED ON APRIL 12 AND CB-2 ISOLATION WAS AGAIN INITIATED. SHUTDOWN OF THE CB-2 SYSTEM OCCURRED AS DESIGNED ON BOTH OCCASIONS. FAILURE OF THE CHLORINE DETECTOR WAS EVALUATED AND FOUND TO BE DUE TO NORMAL EQUIPMENT WEAR AND AGING. ISOLATION OF CB-2 UPON REENERGIZATION OF THE CHLORINE DETECTOR WAS NOT ANTICIPATED BECAUSE WORK AND REENERGIZATION INSTRUCTIONS DID NOT IDENTIFY THAT THIS ISOLATION WOULD OCCUR. THE FAULTY DETECTOR WAS REPLACED AND RETESTED SATISFACTORILY. STEPS WILL BE TAKEN TO INCLUDE EXPECTED EQUIPMENT RESPONSE DURING MAINTENANCE AND REENERGIZATION INTO WORK INSTRUCTIONS. THIS EVENT HAD NO EFFECT ON PUBLIC HEALTH AND SAFETY.

[161] TROJAN DOCKET 50-344 LER 88-008
PRESSURIZER SAFETY VALVE SETPOINT FOUND OUT-OF-TOLERANCE DURING SURVEILLANCE TESTING.
EVENT DATE: 041388 REPORT DATE: 051388 NSSS: WE TYPE: PWR
VENDOR: CROSBY VALVE & GAGE CO.

(NSIC 209277) DURING PERFORMANCE OF PRESSURIZER SAFETY VALVE (PSV) TESTING ON APRIL 13, 1988, PSV-8010C LIFTED AT 2370 PSIG. THIS WAS OUTSIDE THE TROJAN TECHNICAL SPECIFICATION (TTS) ALLOWED TOLERANCE OF 2485 +/- 2 (IE, 2435 TO 2535 PSIG). THE VALVE LIFT SETPOINT WAS ADJUSTED AND THE VALVE RETESTED SATISFACTORILY. THE EXACT CAUSE OF THIS EVENT IS UNKNOWN AND IS STILL BEING EVALUATED. THE VALVE WILL BE INSPECTED TO ATTEMPT TO DETERMINE THE CAUSE OF THE LOW SETPOINT. TEST METHODS AND THE NEED TO PERFORM ADDITIONAL PSV TESTING ARE BEING EVALUATED. THIS EVENT HAD NO EFFECT ON PUBLIC HEALTH AND SAFETY. THIS REPORT IS SUBMITTED IN ACCORDANCE WITH THE SPECIAL REPORTING REQUIREMENTS OF TTS 3.4.3.1.

[162] TROJAN DOCKET 50-344 LER 88-010
CONTAINMENT VENTILATION ISOLATION ON HIGH CONTAINMENT RADIOACTIVITY SIGNAL.
EVENT DATE: 042188 REPORT DATE: 052088 NSSS: WE TYPE: PWR

(NSIC 209326) ON APRIL 21, 1988, THE PLANT WAS IN MODE 6 WITH REACTOR VESSEL WATER LEVEL JUST ABOVE THE TOP OF THE LOOPS AND THE REACTOR HEAD VENT PATH OPEN. THE CONTAINMENT PURGE SUPPLY AND EXHAUST SYSTEMS WERE IN OPERATION. WHILE RAISING REACTOR VESSEL WATER LEVEL, A CONTAINMENT VENTILATION ISOLATION WAS INITIATED BY A HIGH CONTAINMENT RADIOACTIVITY SIGNAL FROM THE CONTAINMENT LOW LEVEL NOBLE GAS MONITOR (PRY-1C). THE CONTAINMENT PURGE SYSTEM ISOLATION VALVES CLOSED AS REQUIRED. THE INCREASE IN CONTAINMENT GASEOUS ACTIVITY WAS CAUSED BY GASES BEING FORCED OUT OF THE REACTOR VESSEL AND INTO CONTAINMENT WHEN REACTOR VESSEL WATER LEVEL WAS INCREASED. IMMEDIATE CORRECTIVE ACTION WAS TO STOP

RAISING REACTOR VESSEL WATER LEVEL. A TEMPORARY PROCEDURE WAS IMPLEMENTED THAT PROVIDED FOR REDUCTING GASES FROM THE REACTOR VESSEL AND DIRECTING THEM TO THE REFUELING CAVITY EXHAUST SYSTEM. THE METHOD FOR ESTABLISHING THE PRM-1C SET POINT WAS REVISED TO INCORPORATE A MORE REPRESENTATIVE BACKGROUND DETERMINATION WHEN A RELEASE IS PLANNED. THIS EVENT HAD NO EFFECT ON PUBLIC HEALTH AND SAFETY.

[163] TURKEY POINT 3 DOCKET 50-250 LER 88-006
 MISSED SURVEILLANCE OF GAS DECAY TANK HYDROGEN AND OXYGEN CONCENTRATION DUE TO PERSONNEL ERROR.
 EVENT DATE: 040888 REPORT DATE: 052388 NSSS: WE TYPE: PWR
 OTHER UNITS INVOLVED: TURKEY POINT 4 (PWR)

(NSIC 209377) ON 4/8/88, WITH UNITS 3 AND 4 AT 100% POWER, THE SURVEILLANCE OF THE HYDROGEN AND OXYGEN CONCENTRATION OF THE IN-SERVICE GAS DECAY TANK WAS NOT PERFORMED. TECHNICAL SPECIFICATION (TS) 3.9.2.G.1 REQUIRES THE HYDROGEN AND OXYGEN CONCENTRATION TO BE DETERMINED ONCE PER DAY DURING OPERATIONS OTHER THAN DEGASSING. THE SURVEILLANCE WAS PERFORMED ON APRIL 7 AT 1100, AND WAS NEXT PERFORMED ON APRIL 9 AT 1045, WITH SATISFACTORY RESULTS EACH TIME. THE 48 HOURS BETWEEN SURVEILLANCES DOES NOT MEET TS REQUIREMENTS. THE CAUSE OF THE MISSED SURVEILLANCE WAS PERSONNEL ERROR. WORK WAS BEING PERFORMED IN THE ROOM WHERE THE SAMPLE AND ANALYSIS EQUIPMENT IS LOCATED. DURING SHIFT TURNOVER, THE CHEMISTRY TECHNICIAN AND HIS SUPERVISOR DISCUSSED THE FACT THAT THE WORK WOULD HAVE TO BE STOPPED AND THE SYSTEM LINED UP IN ORDER TO TAKE THE SAMPLE OF THE IN-SERVICE GAS DECAY TANK TO PERFORM THE TS REQUIRED ANALYSIS. THE CHEMISTRY TECHNICIAN MISUNDERSTOOD THIS CONVERSATION TO MEAN THAT THE SUPERVISOR WOULD PERFORM THE TS REQUIRED SURVEILLANCE. THEREFORE, THE DAILY TS REQUIRED ANALYSIS OF THE IN-SERVICE GAS DECAY TANK WAS NOT PERFORMED AS REQUIRED. THE SURVEILLANCE HAS BEEN INCORPORATED IN THE CHEMISTRY DAILY WORKSHEETS. VERIFICATION OF THE SATISFACTORY COMPLETION OF THE SURVEILLANCE IS PERFORMED BY THE SUPERVISOR INITIALING THE WORKSHEET. THE SUPERVISOR IN CHARGE AND THE TECHNICIAN WERE COUNSELED.

[164] TURKEY POINT 3 DOCKET 50-250 LER 88-005
 LOSS OF FLOWPATH FROM BORIC ACID STORAGE TANKS TO REACTOR COOLANT SYSTEM DUE TO COUPLING FAILURE OF THE 3B BORIC ACID TRANSFER PUMP (BATP) AND SEAL FAILURE OF THE 3A BATP.
 EVENT DATE: 041588 REPORT DATE: 051388 NSSS: WE TYPE: PWR
 OTHER UNITS INVOLVED: TURKEY POINT 4 (PWR)
 VENDOR: DURAMETALLIC CORP.
 GOULDS PUMPS INC.

(NSIC 209353) ON 4/14/88, AT 0305, THE 3B BORIC ACID TRANSFER PUMP (BATP) WAS TAKEN OUT OF SERVICE (OOS) DUE TO THE PUMP'S FAILURE TO DELIVER FLOW. TS 3.6.B.4 REQUIRES A FLOW PATH FROM THE BORIC ACID STORAGE TANKS (BAST) WHEN A REACTOR IS CRITICAL. ON 4/15, AT 1315, A NUCLEAR OPERATOR REPORTED THAT THE 3A BATP SEAL TANK WAS SHOWING NO WATER. AS BOTH PUMPS WHICH WERE ALIGNED TO UNIT 3 WERE NOW OOS, NO FLOW PATH FROM THE BASTS TO UNIT 3 FOR WHICH CREDIT COULD BE TAKEN EXISTED. THIS PLACED THE UNIT IN TS 3.0.1, WHICH REQUIRES THAT ACTION BE INITIATED WITHIN ONE HOUR TO PLACE THE UNIT IN A MODE IN WHICH TS 3.6.B.4 DOES NOT APPLY (MODE 3). AT 1415, THE 4A BATP WAS ALIGNED TO UNIT 3. THE UNIT EXITED TS 3.0.1 AND ENTERED TS 3.6.D.2, WHICH PERMITS CONTINUED POWER OPERATION WITH ONE OF THE THREE REQUIRED BATPS OOS FOR 24 HRS. 1ST OF THE 3B BATP WAS COMPLETED AND THE PUMP WAS RETURNED TO SERVICE AT 1715 ON 4/15, AT WHICH TIME THE UNIT EXITED TECH SPEC 3.6.D.2. THE CAUSE OF THE 3B BATP'S FAILURE WAS A LOOSE SET SCREW IN THE MOTOR/PUMP COUPLING. THE CAUSE OF THE 3A BATP'S SEAL WATER LEVEL DECREASE WAS A FAILED SEAL. THE 4A BATP WAS REALIGNED TO PROVIDE A BORIC ACID FLOWPATH TO UNIT 3, AND THE 3B BATP WAS RETURNED TO SERVICE AT 1715 ON 4/15. THE MECHANICAL SEAL FOR THE 3A BATP WAS REPLACED PUMP RETURNED TO SERVICE ON 4/18.

[165] TURKEY POINT 4 DOCKET 50-251 LER 88-004
 TECH SPEC ACTION STATEMENT EXCEEDED WHEN 480 VOLT UNDERVOLTAGE RELAY FAILED
 DURING PERIODIC TESTING.
 EVENT DATE: 040988 REPORT DATE: 050988 NSSS: WE TYPE: PWR
 VENDOR: GENERAL ELECTRIC CO.

(NSIC 209265) ON APRIL 8, 1988, THE REQUIREMENTS OF TECHNICAL SPECIFICATION (TS) TABLE 3.5-2, ITEM 3.2.B WERE EXCEEDED. DURING THE PERFORMANCE OF OPERATING PROCEDURE (OP) 9404.2, 4160 VOLT AND 480 VOLT SWITCHGEAR - UNDERVOLTAGE TEST, THE UNDERVOLTAGE PROTECTION CIRCUIT FOR THE 4A 480 VOLT LOAD CENTER WOULD NOT PASS THE TEST. THIS CHANNEL WAS DECLARED OUT OF SERVICE AND MAINTENANCE WAS REQUESTED TO INVESTIGATE THE FAILURE. TS SECTION 3.5, TABLE 3.5-2, ITEM 3.2.B REQUIRES THAT FOR THE 480V LOAD CENTERS, POWER OPERATION MAY CONTINUE WITH ONE CHANNEL INOPERABLE AS LONG AS THE INOPERABLE CHANNEL IS PLACED IN THE TRIPPED CONDITION. OPERATIONS WAS UNABLE TO PLACE THE CHANNEL IN THE TRIPPED CONDITION. THEREFORE, THE REQUIREMENTS OF TS TABLE 3.5-2, ITEM 3.2.B COULD NOT BE MET AND UNIT 4 WAS REQUIRED TO BE PLACED INTO TS 3.0.1 WHICH REQUIRES THE UNIT TO BE IN HOT STANDBY IN 7 HOURS. MAINTENANCE REPLACED RELAYS 327TX/4A1 AND 327TX/4A2, OP 9404.2 WAS RECOMMENCED AND THE REPLACED RELAYS WERE SATISFACTORILY TESTED. THIS TOOK THE UNIT OUT OF TS 3.0.1. THE CAUSE OF THE EVENT WAS FAILURE OF RELAYS 327TX/4A1 AND 327TX/4A2 IN THE UNDERVOLTAGE PROTECTION SCHEME FOR THE 4A 480 VOLT LOAD CENTER. FPL'S ENGINEERING DEPARTMENT HAS BEEN REQUESTED TO EVALUATE THIS FAILURE TO DETERMINE ROOT CAUSE AND APPROXIMATE CORRECTIVE ACTIONS.

[166] TURKEY POINT 4 DOCKET 50-251 LER 88-005
 CALIBRATION OF NUCLEAR INSTRUMENTATION SYSTEM POWER RANGE DETECTORS PERFORMED
 LATE DUE TO PERSONNEL ERROR.
 EVENT DATE: 042588 REPORT DATE: 052488 NSSS: WE TYPE: PWR

(NSIC 209378) 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, 4/25 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.

[167] VERMONT YANKEE DOCKET 50-271 LER 88-005
 POTENTIAL LOSS OF SGBT TRAIN DUE TO EXTENSION OF LOOP SEAL.
 EVENT DATE: 041788 REPORT DATE: 052788 NSSS: GE TYPE: EWR

(NSIC 209454) DURING 100% POWER OPERATION ON 04/17/88, AN OPERATOR IDENTIFIED THAT THE EXISTING TYGON TUBING HAD BEEN REPLACED WITH TUBING THAT HAD INCREASED THE VERTICAL HEIGHT OF THE DRAIN LOOP SEALS FOR BOTH STANDBY GAS TREATMENT (SGBT) TRAINS (E11S-BH). FOLLOWUP BY THE OPERATOR REVEALED THAT EXCESSIVE DRAIN LOOP SEAL WATER COLUMN HEIGHT COULD PREVENT THE SGBT MOISTURE SEPARATOR FROM DRAINING. THE FILLING OF THE SGBT TRAINS WOULD RESULT IN A REDUCTION OF IODINE ADSORPTION BY THE ACTIVATED CHARCOAL BEDS. THE TUBING WAS REPAIRED TO RETURN THE LOOP SEAL

WATER COLUMN TO ITS ORIGINAL HEIGHT. THE LENGTH OF ADDITIONAL TUBING FOR THE "A" TRAIN WAS SHORTER THAN THAT FOR THE "B" TRAIN. IT WAS DETERMINED THAT THE "B" TRAIN WOULD HAVE BEEN AFFECTED DURING POST-LOCA LONG TERM CONTAINMENT CLEANUP, AND THAT THE "A" TRAIN WOULD HAVE OPERATED NORMALLY. THE ROOT CAUSE COULD NOT BE DETERMINED BUT A PROBABLE CAUSE HAS BEEN IDENTIFIED THAT LED TO THE EVENT. THE USE OF TYGON TUBING ON THE SBTG DRAIN LOOP SEAL WILL BE EVALUATED PER A MECHANICAL BYPASS REQUEST. A WALKDOWN WILL BE PERFORMED TO ASSURE THAT ANY OTHER TUBING BEING USED IN AN OPERATIONAL CONFIGURATION IS DOCUMENTED AND CONTROLLED. PLANT PERSONNEL WILL BE GIVEN SPECIFIC TRAINING ON THIS EVENT. TO IDENTIFY THE PROPER ROOT CAUSE AND CORRECTIVE ACTION, AN EXTENSION OF 10 DAYS WAS REQUESTED OF AND GRANTED BY THE NRC SENIOR RESIDENT INSPECTOR.

[168] VERMONT YANKEE DOCKET 50-271 LER 88-004
ISOLATION OF RADIATION MONITORS DUE TO PERSONNEL ERROR.
EVENT DATE: 042088 REPORT DATE: 052088 NSSS: GE TYPE: BWR

(NSIC 209354) AT 17:00 HOURS ON 4/10/88, WITH THE PLANT OPERATING AT 100% POWER, IT WAS DETERMINED THAT THE MANUAL ISOLATION VALVES IN THE SUPPLY AND RETURN LINES TO THE TWO ADVANCED OFF GAS (EIGS-WF) RADIATION MONITORS WERE CLOSED, THUS PREVENTING THEM FROM SUPERVISING STEAM RADIATION LEVELS. THESE MONITORS INITIATE AUTOMATIC SYSTEM ISOLATION UPON DETECTION OF HIGH RADIATION LEVELS. UPON DISCOVERY, THE VALVES WERE REOPENED AND FLOW WAS IMMEDIATELY RESTORED TO THE MONITORS. INVESTIGATION OF THIS EVENT HAS FOUND THE ROOT CAUSE TO BE PERSONNEL ERROR. THE MONITOR INLET AND OUTLET VALVES WERE CLOSED AS PART OF A ROUTINE DRAINING OPERATION AND WERE INADVERTENTLY LEFT CLOSED AFTER DRAINING WAS COMPLETE. CORRECTIVE ACTION CONSISTED OF A DISCUSSION WITH THE PERSONNEL INVOLVED CONCERNING THE IMPORTANCE OF RETURNING THE SUBJECT VALVES TO THEIR OPEN POSITION. IN ADDITION, THE SPECIFIC DRAINING OPERATION STEPS HAVE BEEN INCORPORATED INTO A PROCEDURE TO BE USED DURING FUTURE DRAINING EVOLUTIONS. THIS WILL ASSURE A RETURN TO THE PROPER VALVE ALIGNMENT AFTER DRAINING IS COMPLETE.

[169] WATERFORD 3 DOCKET 50-382 LER 88-006
FIRE BARRIER DEGRADED DUE TO INADEQUATE ADMINISTRATIVE CONTROL.
EVENT DATE: 040588 REPORT DATE: 050688 NSSS: CE TYPE: PWR

(NSIC 209333) AT 1429 HOURS ON APRIL 5, 1988, WATERFORD STEAM ELECTRIC STATION UNIT 3 WAS IN COLD SHUTDOWN WHEN A VITAL AREA FIRE DOOR (VAFD) WAS DISCOVERED TO BE IMPAIRED. THE VAFD WAS POSTED BY SECURITY SINCE APRIL 1, 1988 DUE TO A MALFUNCTIONING LOCK. ON APRIL 5, 1988 A UTILITY MECHANIC REMOVED THE LOCK BUT COULD NOT REPAIR IT AND SECURED FROM THE JOB AT 0146. AT 1015 HOURS THE AREA WAS DEVITALIZED AND A POSTED SECURITY OFFICER WAS NO LONGER REQUIRED. AT 1429 HOURS A SECURITY OFFICER, TRAINED IN FIRE DOOR INTEGRITY, WAS PERFORMING THE DAILY FIRE DOOR SURVEILLANCE WHEN HE DISCOVERED THE DOOR WITH ITS LOCKING MECHANISM MISSING. SINCE REMOVAL OF THE LOCK IS A FIRE BARRIER DESIGN DEVIATION A FIRE IMPAIRMENT WAS ISSUED IN ACCORDANCE WITH TECHNICAL SPECIFICATION 3.7.11. THE ROOT CAUSE OF THIS EVENT WAS INADEQUATE ADMINISTRATIVE CONTROL. THERE WAS NO POSITIVE MEANS TO ENSURE A FIRE IMPAIRMENT WAS ISSUED. TO PREVENT RECURRENCE A NOTE HAS BEEN ADDED TO THE WORK AUTHORIZATION INSTRUCTIONS. PROCEDURES ARE BEING REVISED TO REQUIRE A FIRE PROTECTION IMPAIRMENT BE ISSUED WHEN A PROBLEM IS IDENTIFIED WITH A FIRE PROTECTION APPLIANCE. FIRE DETECTION EQUIPMENT WAS OPERABLE ON ONE SIDE OF THE DOOR AND QUALIFIED FIRE WATCHES TRANSITED THE AREA AT LEAST ONCE PER HOUR. THE PLANT WAS IN A MODE IN WHICH A FIRE IN THIS AREA WOULD NOT HAVE AFFECTED PLANT SAFETY. THERE WAS THEREFORE, NO SAFETY SIGNIFICANCE TO THIS EVENT.

[170] WATERFORD 3 DOCKET 50-382 LER 88-007
MISSED CHEMISTRY SAMPLE DUE TO COGNITIVE PERSONNEL ERROR.
EVENT DATE: 041388 REPORT DATE: 051288 NSSS: CE TYPE: PWR

(NSIC 209334) AT 1121 HOURS ON APRIL 13, 1988, WATERFORD STEAM ELECTRIC STATION UNIT 3 WAS IN COLD SHUTDOWN WHEN IT WAS DISCOVERED THAT A MONTHLY TECHNICAL SPECIFICATION (TS) SAMPLING REQUIREMENT WAS MISSED. THE PREVIOUS PLANT STACK TRITIUM SAMPLE WAS PERFORMED ON MARCH 3, 1988. ON APRIL 11, 1988 A SUPERVISOR DISCOVERED THE SAMPLE WAS OVERDUE, BUT INCORRECTLY CONCLUDED THE CONTAINMENT PURGE SAMPLE SATISFIED THE SURVEILLANCE. ON APRIL 13, 1988 THE SUPERVISOR LEARNED THE SAMPLE CANNOT BE SUBSTITUTED AND THE PLANT STACK TRITIUM SAMPLE WAS TAKEN. THE MAXIMUM ALLOWABLE SURVEILLANCE INTERVAL WAS EXCEEDED ON APRIL 8, 1988, THEREFORE THE PLANT OPERATED IN A CONDITION PROHIBITED BY TS FOR FIVE DAYS. THE ROOT CAUSE OF THIS EVENT IS COGNITIVE PERSONNEL ERROR DUE TO NOT FILING THE SURVEILLANCE TICKLER CARDS. THIS RESULTED IN THE SAMPLE NOT BEING SCHEDULED. CONTRIBUTING CAUSES WERE THAT THE COMPUTER TRACKING SYSTEM DID NOT INCLUDE THIS SAMPLE AND NO ONE WAS ASSIGNED SPECIFIC RESPONSIBILITY TO ENSURE THE TICKLER CARDS ARE FILED PROPERLY. THE SAMPLE WAS TAKEN AND FOUND TO BE IN SPECIFICATION. CHEMISTRY TECHNICIANS AND THEIR SUPERVISOR WERE COUNSELED. PROCEDURES ARE BEING REVISED AND AN INDEPENDENT EVALUATION OF THE CHEMISTRY TS PROGRAM HAS BEEN PERFORMED. SINCE THE SAMPLE WAS IN SPECIFICATION WHEN PERFORMED AND THE PLANT IS SHUTDOWN FOR REFUELING THERE IS NO HEALTH HAZARD OR SAFETY SIGNIFICANCE TO THIS EVENT.

[171] WATERFORD 3 DOCKET 50-382 LER 88-008
 ESP VENTILATION ACTUATIONS DUE TO VOLTAGE FLUCTUATIONS ON A VITAL UNINTERRUPTABLE BUS.
 EVENT DATE: 041788 REPORT DATE: 051788 NSSS: CE TYPE: PWR

(NSIC 209335) AT 0547 HOURS ON APRIL 17, 1988, AND 2217 HOURS ON APRIL 20, 1988, WATERFORD STEAM ELECTRIC STATION UNIT 3 WAS SHUTDOWN IN THE REFUELING MODE WHEN A VOLTAGE FLUCTUATION ON THE 'A' TRAIN VITAL UNINTERRUPTABLE BUS, POWER DISTRIBUTION PANEL (PDP) 390-SA, RESULTED IN AN AUTOMATIC START OF THE 'A' TRAIN CONTROL ROOM AND FUEL HANDLING BUILDING EMERGENCY FILTRATION UNITS AND ISOLATION OF THE 'A' TRAIN SUPPLY AND RETURN VALVES TO THE NON-SAFETY COMPONENT COOLING WATER HEADER. THE AFFECTED EQUIPMENT WAS RETURNED TO NORMAL AND AN INVESTIGATION WAS BEGUN. THESE EVENTS ARE REPORTABLE AS ENGINEERED SAFEGUARDS FEATURES (ESF) ACTUATIONS. TROUBLESHOOTING HAS NOT DEFINITELY DETERMINED A ROOT CAUSE FOR THESE EVENTS. THE CAUSE IS SUSPECTED TO BE RELATED TO MAINTENANCE ACTIVITIES ASSOCIATED WITH LOADS SUPPLIED BY PDP 390-SA. IF A ROOT CAUSE IS DETERMINED FOR THESE EVENTS, IT WILL BE DESCRIBED IN A REVISION TO THIS REPORT. THE AFFECTED EQUIPMENT OPERATED AS DESIGNED AND WAS RESTORED TO ITS NORMAL OPERATING CONDITION IMMEDIATELY AFTER EACH EVENT. THERE WAS NO EFFECT ON 'B' SAFETY TRAIN COMPONENTS. THUS, THERE WAS NO SAFETY SIGNIFICANCE TO THESE EVENTS.

[172] WOLF CREEK 1 DOCKET 50-482 LER 88-006
 ENGINEERED SAFETY FEATURES ACTUATION DUE TO CONTROL ROOM VENTILATION ISOLATION SIGNAL CAUSED BY SPURIOUS SPIKE OF A CHLORINE MONITOR.
 EVENT DATE: 04 REPORT DATE: 050988 NSSS: WE TYPE: PWR
 VENDOR: M D A SCIENTIFIC, INC.

(NSIC 209289) ON APRIL 22, 1988, AT 2324 CST, A CONTROL ROOM VENTILATION ISOLATION SIGNAL (CRVIS) OCCURRED DUE TO CHLORINE MONITOR GK-AITS-2 INDICATING HIGH CHLORINE LEVEL IN THE OUTSIDE AIR MAKEUP TO THE CONTROL BUILDING HEATING, VENTILATING AND AIR CONDITIONING SYSTEM. NO CHLORINE WAS PRESENT AS EVIDENCED BY NORMAL READINGS ON THE REDUNDANT CHLORINE MONITOR. CONTROL ROOM PERSONNEL CONFIRMED THAT THE SIGNAL WAS THE RESULT OF A SPURIOUS SPIKE AND NOT THE RESULT OF AN ACTUAL HIGH CHLORINE CONDITION. DURING SUBSEQUENT TROUBLESHOOTING BY INSTRUMENTATION AND CONTROLS PERSONNEL, A ROOT CAUSE FOR THE SPURIOUS SPIKE COULD NOT BE POSITIVELY DETERMINED, HOWEVER, IT IS BELIEVED THAT THIS SPIKE WAS CAUSED BY A RADIO TRANSMISSION IN THE IMMEDIATE VICINITY OF THE MONITOR. A SIMILAR SPIKE CAUSED BY RADIO TRANSMISSION WAS RECREATED DURING TESTING IN THE INSTRUMENTATION AND CONTROLS SHOP. TO PREVENT FUTURE ACTUATIONS CAUSED BY RADIO TRANSMISSIONS,

SIGNS WERE PLACED IN THE AREA PREVENTING RADIO TRANSMISSION. A LETTER WAS PLACED IN SECURITY REQUIRED READING TO ENSURE THAT SECURITY PERSONNEL WILL NOT USE THEIR RADIOS IN THIS AREA.

[173] YANKEE ROWE DOCKET 50-029 LER 88-006
SWITCHGEAR ROOM HALON SYSTEM OUT OF SERVICE FOR MORE THAN 14 DAYS.
EVENT DATE: 042088 REPORT DATE: 052088 NSSS: WE TYPE: PWR

(NSIC 209349) ON 4/6/88, AT 1115 HOURS, DURING NORMAL STEADY STATE OPERATION, (MODE 1 - 100 PERCENT POWER) THE SWITCHGEAR ROOM HALON SYSTEM WAS DECLARED INOPERABLE. THE DEGRADATION WAS DECLARED WHEN ONE OF THE SIX HALON BOTTLES WAS FOUND, BY SURVEILLANCE, TO WEIGH TWO POUNDS LESS THAN THE 95 PERCENT OF FULL CHARGE WEIGHT ALLOWED BY TECH SPECS 3.7.10.5. ARRANGEMENTS WERE MADE TO ESTABLISH AN HOURLY FIRE WATCH PATROL, WITH BACKUP FIRE SUPPRESSION EQUIPMENT IN THE AREA WHEN THE CONTINUOUS FIRE WATCH ESTABLISHED BY THE SURVEILLANCE PROCEDURE WAS NO LONGER REQUIRED. PYROTRONICS, THE HALON SYSTEM MANUFACTURER, WAS CONTACTED THE SAME DAY TO OBTAIN INFORMATION ABOUT RECHARGING THE LOW WEIGHT BOTTLE AND TWO OTHERS WHICH WEIGHED LESS THAN 100 PERCENT OF FULL CHARGE WEIGHT. THE PURCHASE ORDER PROCESS FOR RECHARGING THE THREE BOTTLES WAS COMPLETED ON 4/13/88. THE BOTTLES WERE PICKED UP ON 4/14/88. THE BOTTLES WERE RECHARGED ON 4/15/88 AND RETURNED TO THE PLANT ON TUESDAY 4/19/88. RECEIPT INSPECTION AND INSTALLATION OF THE HALON BOTTLES WAS COMPLETED ON 4/20/88, AT 1243 HOURS, WHEN THE SYSTEM WAS DECLARED OPERATIONAL. THE HALON SYSTEM WAS INOPERABLE FOR 1 HOUR AND 28 MINUTES LONGER THAN THE 14 DAYS ALLOWED IN THE TECH SPEC ACTION STATEMENT.

[174] YANKEE ROWE DOCKET 50-029 LER 88-007
INADVERTENT OPENING OF THE PRESSURIZER SOLENOID OPERATED RELIEF VALVE.
EVENT DATE: 043088 REPORT DATE: 052788 NSSS: WE TYPE: PWR

(NSIC 209451) ON 4/30/88 AT 1510 HOURS WITH THE PLANT IN MODE 3 AND THE REACTOR COOLANT SYSTEM AT OPERATING TEMPERATURE AND PRESSURE, THE PRESSURIZER SOLENOID OPERATED RELIEF VALVE (PR-SOV-90) WAS INADVERTENTLY OPENED. THE EVENT OCCURRED WHEN INSTRUMENTATION AND CONTROL (I&C) DEPARTMENT PERSONNEL WERE PERFORMING A PRECRITICAL OPERABILITY CHECK OF THE REACTOR PROTECTIVE SYSTEM INSTRUMENTATION. A TESTER, UNDER THE SUPERVISION OF A TECHNICIAN, INSERTED A CIRCUIT TEST PLUG INTO TEST JACKS OF PR-SOV-90 CONTROL CIRCUIT INSTRUMENTATION INSTEAD OF REACTOR COOLANT LOOP 3 FLOW MONITORING INSTRUMENTATION. THE ERROR WAS NOTICED IMMEDIATELY BY THE TECHNICIAN, AND THE TEST PLUG WAS REMOVED, CLOSING PR-SOV-90. BECAUSE THE ISOLATION VALVE (PR-MOV-512) UPSTREAM OF PR-SOV-90 WAS CLOSED, THERE WAS NO FLOW FROM THE PRESSURIZER. THE EVENT IS ATTRIBUTED TO PERSONNEL ERROR, IN THAT THE TESTER FAILED TO CORRECTLY IDENTIFY THE TEST CIRCUIT PRIOR TO INSERTING A TEST PLUG. THE NRC WAS NOTIFIED VIA ENS AT 1830 HRS. CORRECTIVE ACTIONS INCLUDE COUNSELING THE I&C TESTERS AND TECHNICIANS, AND IMPROVED IDENTIFICATION OF THE TEST CIRCUITS WITHIN THE MAIN CONTROL BOARD. THE PROCEDURE FOR PERFORMING THE SURVEILLANCE WAS REVIEWED AND DETERMINED TO PROVIDE ADEQUATE INSTRUCTIONS AND PRECAUTIONS.

[175] ZION 1 DOCKET 50-295 LER 88-035
REACTOR TRIP DUE TO STEAM GENERATOR LEVEL TRANSIENT AFTER FEEDWATER PUMP TEST.
EVENT DATE: 022488 REPORT DATE: 032588 NSSS: WE TYPE: PWR
VENDOR: FISHER CONTROLS CO.

(NSIC 209451) A. APPROXIMATELY 1000 HOURS ON FEBRUARY 24, 1988, ZION UNIT 1 TRIPPED OFF 2% POWER. THE TECHNICAL STAFF HAD BEEN PERFORMING LOW PRESSURE STEAM PUMP TESTING ON 1B FEEDWATER (FW) PUMP PER TFCB 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

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