

February 12, 1990

① see correction of 4/10/90
② Correction ltr of 5/9/90
③ see correction ltr of 4/25/91

Docket No. 50-483

Mr. Donald F. Schnell
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Dear Mr. Schnell:

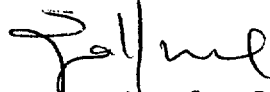
SUBJECT: AMENDMENT NO. 50 TO FACILITY OPERATING LICENSE NO. NPF-30
(TAC NO. 74883)

The Commission has issued the enclosed Amendment No. 50 to Facility Operating License No. NPF-30 for the Callaway Plant, Unit 1. This amendment revises the Technical Specifications in response to your application dated September 6, 1989.

The amendment relocates the existing procedural details of the current Radiological Effluent Technical Specifications (RETS) to the Offsite Dose Calculation Manual (ODCM), and procedural details for the solid radioactive wastes to the Process Control Program (PCP). The amendment also incorporates the respective programmatic controls into the Administrative Controls section of the Technical Specifications.

A copy of the Safety Evaluation is also enclosed. The notice of issuance will be included in the Commission's next biweekly Federal Register notice.

Sincerely,



S. V. Athavale, Project Manager
Project Directorate III-3
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Enclosures:

1. Amendment No. 50 to License No. NPF-30
2. Safety Evaluation

cc w/enclosures:

See next page

*SEE PREVIOUS CONCURRENCE

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Callaway Plant
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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

UNION ELECTRIC COMPANY

CALLAWAY PLANT, UNIT 1

DOCKET NO. STN 50-483

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 50
License No. NPF-30

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment filed by Union Electric Company (UE, the licensee) dated September 6, 1989 complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;
 - B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
 - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
 - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
 - E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.
2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 2.C.(2) of Facility Operating License No. NPF-30 is hereby amended to read as follows:

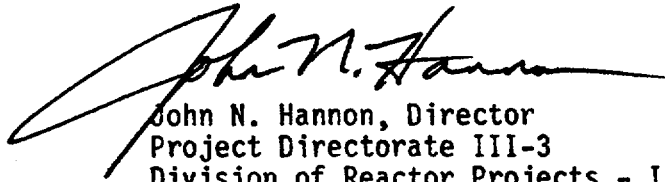
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(2) Technical Specifications and Environmental Protection Plan

The Technical Specifications contained in Appendix A, as revised through Amendment No. 50, and the Environmental Protection Plan contained in Appendix B, both of which are attached hereto, are hereby incorporated into the license. UE shall operate the facility in accordance with the Technical Specifications and the Environmental Protection Plan.

3. This license amendment is effective upon issuance and shall be implemented upon the licensee's completion of the necessary departmental procedural changes. The licensee will notify the Commission in writing when the necessary departmental procedural changes have been completed.

FOR THE NUCLEAR REGULATORY COMMISSION



John N. Hannon, Director
Project Directorate III-3
Division of Reactor Projects - III,
IV, V and Special Projects
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: February 12, 1990

ATTACHMENT TO LICENSE AMENDMENT NO. 50

OPERATING LICENSE NO. NPF-30

DOCKET NO. 50-483

Revise Appendix A Technical Specifications by removing the pages identified below and inserting the enclosed pages. The revised pages are identified by the captioned amendment number and contain marginal lines indicating the area of change. Corresponding overleaf pages are provided to maintain document completeness.

REMOVE

II
VI
VII
XII
XIII
XIV
XVII
XX
XXI
1-4
1-6
3/4 3-63 through 3/4 3-76 (16 pgs.)
3/4 11-1 through 3/4 11-18 (18 pgs.)
3/4 12-1 through 3/4 12-14 (14 pgs.)
B 3/4 3-5
B 3/4 3-6
B 3/4 11-1 through B 3/4 11-7 (7 pgs.)
B 3/4 12-1 and B 3/4 12-2
6-17 through 6-26 (10 pgs.)

INSERT

II
VI
VII
XII
XIII
XIV
XVII
XX
XXI
1-4
1-6
3/4 3-63 through 3/4 3-76
3/4 3-11-1 through 3/4 11-4
3/4 12-1 through 3/4 12-2
B 3/4 3-5
-
B 3/4 11-1 and B 3/4 11-2
B 3/4 12-1
6-17 through 6-25

INDEX

DEFINITIONS

<u>SECTION</u>	<u>PAGE</u>
<u>1.0 DEFINITIONS</u>	
1.1 ACTION.....	1-1
1.2 ACTUATION LOGIC TEST.....	1-1
1.3 ANALOG CHANNEL OPERATIONAL TEST.....	1-1
1.4 AXIAL FLUX DIFFERENCE.....	1-1
1.5 CHANNEL CALIBRATION.....	1-1
1.6 CHANNEL CHECK.....	1-1
1.7 CONTAINMENT INTEGRITY.....	1-2
1.8 CONTROLLED LEAKAGE.....	1-2
1.9 CORE ALTERATION.....	1-2
1.10 DOSE EQUIVALENT I-131.....	1-2
1.11 \bar{E} -AVERAGE DISINTEGRATION ENERGY.....	1-3
1.12 ENGINEERED SAFETY FEATURES RESPONSE TIME.....	1-3
1.13 FREQUENCY NOTATION.....	1-3
1.14 IDENTIFIED LEAKAGE.....	1-3
1.15 MASTER RELAY TEST.....	1-3
1.16 MEMBER(S) OF THE PUBLIC.....	1-3
1.17 OFFSITE DOSE CALCULATION MANUAL.....	1-4
1.18 OPERABLE - OPERABILITY.....	1-4
1.19 OPERATIONAL MODE - MODE.....	1-4
1.20 PHYSICS TESTS.....	1-4
1.21 PRESSURE BOUNDARY LEAKAGE.....	1-4
1.22 PROCESS CONTROL PROGRAM.....	1-4
1.23 PURGE - PURGING.....	1-4
1.24 QUADRANT POWER TILT RATIO.....	1-5
1.25 RATED THERMAL POWER.....	1-5
1.26 REACTOR TRIP SYSTEM RESPONSE TIME.....	1-5
1.27 REPORTABLE EVENT.....	1-5
1.28 RESTRICTED AFD OPERATION.....	1-5

INDEX

DEFINITIONS

<u>SECTION</u>	<u>PAGE</u>
<u>DEFINITIONS (Continued)</u>	
1.29 SHUTDOWN MARGIN.....	1-5
1.30 SITE BOUNDARY.....	1-5
1.31 SLAVE RELAY TEST.....	1-5
1.32 Deleted	1-6
1.33 SOURCE CHECK.....	1-6
1.34 STAGGERED TEST BASIS.....	1-6
1.35 THERMAL POWER.....	1-6
1.36 TRIP ACTUATING DEVICE OPERATIONAL TEST.....	1-6
1.37 UNIDENTIFIED LEAKAGE.....	1-6
1.38 UNRESTRICTED AREA.....	1-6
1.39 VENTILATION EXHAUST TREATMENT SYSTEM.....	1-7
1.40 VENTING.....	1-7
1.41 WASTE GAS HOLDUP SYSTEM.....	1-7
TABLE 1.1 FREQUENCY NOTATIONS.....	1-8
TABLE 1.2 OPERATIONAL MODES.....	1-9

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>3/4.2 POWER DISTRIBUTION LIMITS</u>	
3/4.2.1 AXIAL FLUX DIFFERENCE.....	3/4 2-1
FIGURE 3.2-1 AXIAL FLUX DIFFERENCE LIMITS AS A FUNCTION OF RATED THERMAL POWER.....	3/4 2-3
3/4.2.2 HEAT FLUX HOT CHANNEL FACTOR - $F_Q(Z)$	3/4 2-4
FIGURE 3.2-2 $K(Z)$ _NORMALIZED $F_Q(Z)$ AS A FUNCTION OF CORE HEIGHT.....	3/4 2-5
3/4.2.3 NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR - $F_{\Delta H}^N$	3/4 2-8
3/4.2.4 QUADRANT POWER TILT RATIO.....	3/4 2-10
3/4.2.5 DNB PARAMETERS.....	3/4 2-13
TABLE 3.2-1 DNB PARAMETERS.....	3/4 2-14
<u>3/4.3 INSTRUMENTATION</u>	
3/4.3.1 REACTOR TRIP SYSTEM INSTRUMENTATION.....	3/4 3-1
TABLE 3.3-1 REACTOR TRIP SYSTEM INSTRUMENTATION.....	3/4 3-2
TABLE 3.3-2 REACTOR TRIP SYSTEM INSTRUMENTATION RESPONSE TIMES.....	3/4 3-7
TABLE 4.3-1 REACTOR TRIP SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-9
3/4.3.2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION.....	3/4 3-13
TABLE 3.3-3 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION.....	3/4 3-14
TABLE 3.3-4 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION TRIP SETPOINTS.....	3/4 3-22
TABLE 3.3-5 ENGINEERED SAFETY FEATURES RESPONSE TIMES.....	3/4 3-29
TABLE 4.3-2 ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-33

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>INSTRUMENTATION (Continued)</u>	
3/4.3.3 MONITORING INSTRUMENTATION	
Radiation Monitoring for Plant Operations.....	3/4 3-38
TABLE 3.3-6 RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS.....	3/4 3-39
TABLE 4.3-3 RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS SURVEILLANCE REQUIREMENTS.....	3/4 3-41
Movable Incore Detectors.....	3/4 3-42
Seismic Instrumentation.....	3/4 3-43
TABLE 3.3-7 SEISMIC MONITORING INSTRUMENTATION.....	3/4 3-44
TABLE 4.3-4 SEISMIC MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-45
Meteorological Instrumentation.....	3/4 3-46
TABLE 3.3-8 METEOROLOGICAL MONITORING INSTRUMENTATION.....	3/4 3-47
TABLE 4.3-5 METEOROLOGICAL MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-48
Remote Shutdown Instrumentation.....	3/4 3-49
TABLE 3.3-9 REMOTE SHUTDOWN MONITORING INSTRUMENTATION.....	3/4 3-50
TABLE 4.3-6 REMOTE SHUTDOWN MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-51
Accident Monitoring Instrumentation.....	3/4 3-52
TABLE 3.3-10 ACCIDENT MONITORING INSTRUMENTATION.....	3/4 3-53
TABLE 4.3-7 ACCIDENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS.....	3/4 3-55
Loose-Part Detection System	3/4 3-62

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>INSTRUMENTATION (Continued)</u>	
Waste Gas Holdup System.....	3/4 3-75
3/4.3.4 TURBINE OVERSPEED PROTECTION.....	3/4 3-76
<u>3/4.4 REACTOR COOLANT SYSTEM</u>	
3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION	
Startup and Power Operation.....	3/4 4-1
Hot Standby.....	3/4 4-2
Hot Shutdown.....	3/4 4-3
Cold Shutdown - Loops Filled.....	3/4 4-5
Cold Shutdown - Loops Not Filled.....	3/4 4-6
3/4.4.2 SAFETY VALVES	
Shutdown.....	3/4 4-7
Operating.....	3/4 4-8
3/4.4.3 PRESSURIZER.....	3/4 4-9
3/4.4.4 RELIEF VALVES.....	3/4 4-10
3/4.4.5 STEAM GENERATORS.....	3/4 4-11
Table 4.4-1 MINIMUM NUMBER OF STEAM GENERATORS TO BE INSPECTED DURING INSERVICE INSPECTION.....	3/4 4-16
Table 4.4-2 STEAM GENERATOR TUBE INSPECTION.....	3/4 4-17
3/4.4.6 REACTOR COOLANT SYSTEM LEAKAGE	
Leakage Detection Systems.....	3/4 4-18
Operational Leakage.....	3/4 4-19

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>REACTOR COOLANT SYSTEM (Continued)</u>	
TABLE 3.4-1 REACTOR COOLANT SYSTEM PRESSURE ISOLATION VALVES.....	3/4 4-21
3/4.4.7 CHEMISTRY.....	3/4 4-22
TABLE 3.4-2 REACTOR COOLANT SYSTEM CHEMISTRY LIMITS.....	3/4 4-23
TABLE 4.4-3 REACTOR COOLANT SYSTEM CHEMISTRY SURVEILLANCE REQUIREMENTS.....	3/4 4-24
3/4.4.8 SPECIFIC ACTIVITY.....	3/4 4-25
FIGURE 3.4-1 DOSE EQUIVALENT I-131 REACTOR COOLANT SPECIFIC ACTIVITY LIMIT VERSUS PERCENT OF RATED THERMAL POWER WITH THE REACTOR COOLANT SPECIFIC ACTIVITY > 1 μ Ci/gram DOSE EQUIVALENT I-131.....	3/4 4-27
TABLE 4.4-4 REACTOR COOLANT SPECIFIC ACTIVITY SAMPLE AND ANALYSIS PROGRAM.....	3/4 4-28
3/4.4.9 PRESSURE/TEMPERATURE LIMITS Reactor Coolant System.....	3/4 4-29
FIGURE 3.4-2 REACTOR COOLANT SYSTEM HEATUP LIMITATIONS APPLICABLE UP TO 7 EFY.....	3/4 4-30
FIGURE 3.4-3 REACTOR COOLANT SYSTEM COOLDOWN LIMITATIONS APPLICABLE UP TO 7 EFY.....	3/4 4-31
TABLE 4.4-5 REACTOR VESSEL MATERIAL SURVEILLANCE PROGRAM - WITHDRAWAL SCHEDULE.....	3/4 4-32
Pressurizer.....	3/4 4-33
Overpressure Protection Systems.....	3/4 4-34
FIGURE 3.4-4 MAXIMUM ALLOWED PORV SETPOINT FOR THE COLD OVERPRESSURE MITIGATION SYSTEM.....	3/4 4-36
3/4.4.10 STRUCTURAL INTEGRITY.....	3/4 4-37
3/4.4.11 REACTOR COOLANT SYSTEM VENTS.....	3/4 4-38
<u>3/4.5 EMERGENCY CORE COOLING SYSTEMS</u>	
3/4.5.1 ACCUMULATORS.....	3/4 5-1
3/4.5.2 ECCS SUBSYSTEMS - $T_{avg} \geq 350^{\circ}\text{F}$	3/4 5-3
3/4.5.3 ECCS SUBSYSTEMS - $T_{avg} < 350^{\circ}\text{F}$	3/4 5-7
3/4.5.4 ECCS SUBSYSTEMS - $T_{avg} \leq 200^{\circ}\text{F}$	3/4 5-9

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>3/4.8 ELECTRICAL POWER SYSTEMS</u>	
3/4.8.1 A.C. SOURCES	
Operating.....	3/4 8-1
TABLE 4.8-1 DIESEL GENERATOR TEST SCHEDULE.....	3/4 8-7
Shutdown.....	3/4 8-8
3/4.8.2 D.C. SOURCES	
Operating.....	3/4 8-9
TABLE 4.8-2 BATTERY SURVEILLANCE REQUIREMENTS.....	3/4 8-11
Shutdown.....	3/4 8-12
3/4.8.3 ONSITE POWER DISTRIBUTION	
Operating.....	3/4 8-13
Shutdown.....	3/4 8-15
3/4.8.4 ELECTRICAL EQUIPMENT PROTECTIVE DEVICES	
Containment Penetration Conductor Overcurrent Protective Devices.....	3/4 8-16
TABLE 3.8-1 CONTAINMENT PENETRATION CONDUCTOR OVERCURRENT PROTECTIVE DEVICES.....	3/4 8-18
<u>3/4.9 REFUELING OPERATIONS</u>	
3/4.9.1 BORON CONCENTRATION.....	3/4 9-1
3/4.9.2 INSTRUMENTATION.....	3/4 9-2
3/4.9.3 DECAY TIME.....	3/4 9-3
3/4.9.4 CONTAINMENT BUILDING PENETRATIONS.....	3/4 9-4
3/4.9.5 COMMUNICATIONS.....	3/4 9-5

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>REFUELING OPERATIONS (Continued)</u>	
3/4.9.6 REFUELING MACHINE.....	3/4 9-6
3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE FACILITY.....	3/4 9-8
3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION	
High Water Level.....	3/4 9-9
Low Water Level.....	3/4 9-10
3/4.9.9 CONTAINMENT VENTILATION SYSTEM.....	3/4 9-11
3/4.9.10 WATER LEVEL - REACTOR VESSEL	
Fuel Assemblies.....	3/4 9-12
Control Rods.....	3/4 9-13
3/4.9.11 WATER LEVEL - STORAGE POOL.....	3/4 9-14
3/4.9.12 SPENT FUEL ASSEMBLY STORAGE.....	3/4 9-15
FIGURE 3.9-1 MINIMUM REQUIRED FUEL ASSEMBLY EXPOSURE AS A FUNCTION OF INITIAL ENRICHMENT TO PERMIT STORAGE IN REGION 2.....	3/4 9-16
3/4.9.13 EMERGENCY EXHAUST SYSTEM.....	3/4 9-17
<u>3/4.10 SPECIAL TEST EXCEPTIONS</u>	
3/4.10.1 SHUTDOWN MARGIN.....	3/4 10-1
3/4.10.2 GROUP HEIGHT, INSERTION AND POWER DISTRIBUTION LIMITS.....	3/4 10-2
3/4.10.3 PHYSICS TESTS.....	3/4 10-3
3/4.10.4 REACTOR COOLANT LOOPS.....	3/4 10-4
3/4.10.5 POSITION INDICATION SYSTEM - SHUTDOWN.....	3/4 10-5

INDEX

LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

<u>SECTION</u>	<u>PAGE</u>
<u>3/4.11 RADIOACTIVE EFFLUENTS</u>	
Liquid Holdup Tanks.....	3/4 11-1
Explosive Gas Mixture.....	3/4 11-2
Gas Storage Tanks.....	3/4 11-3
 <u>3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING</u>	 DELETED

INDEX

BASES

<u>SECTION</u>	<u>PAGE</u>
3/4.0 APPLICABILITY.....	B 3/4 0-1
<u>3/4.1 REACTIVITY CONTROL SYSTEMS</u>	
3/4.1.1 BORATION CONTROL.....	B 3/4 1-1
3/4.1.2 BORATION SYSTEMS.....	B 3/4 1-2
3/4.1.3 MOVABLE CONTROL ASSEMBLIES.....	B 3/4 1-3
<u>3/4.2 POWER DISTRIBUTION LIMITS</u>	
3/4.2.1 AXIAL FLUX DIFFERENCE.....	B 3/4 2-1
3/4.2.2 and 3/4.2.3 HEAT FLUX HOT CHANNEL FACTOR and RCS FLOW RATE AND NUCLEAR ENTHALPY RISE HOT CHANNEL FACTOR.....	B 3/4 2-2
FIGURE B 3/4.2-1 TYPICAL INDICATED AXIAL FLUX DIFFERENCE VERSUS THERMAL POWER.....	B 3/4 2-3
3/4.2.4 QUADRANT POWER TILT RATIO.....	B 3/4 2-5
3/4.2.5 DNB PARAMETERS.....	B 3/4 2-6
<u>3/4.3 INSTRUMENTATION</u>	
3/4.3.1 and 3/4.3.2 REACTOR TRIP SYSTEM and ENGINEERED SAFETY FEATURES ACTUATION SYSTEM INSTRUMENTATION.....	B 3/4 3-1
3/4.3.3 MONITORING INSTRUMENTATION.....	B 3/4 3-3
3/4.3.4 TURBINE OVERSPEED PROTECTION.....	B 3/4 3-5
<u>3/4.4 REACTOR COOLANT SYSTEM</u>	
3/4.4.1 REACTOR COOLANT LOOPS AND COOLANT CIRCULATION.....	B 3/4 4-1
3/4.4.2 SAFETY VALVES.....	B 3/4 4-2
3/4.4.3 PRESSURIZER.....	B 3/4 4-2
3/4.4.4 RELIEF VALVES.....	B 3/4 4-2

INDEX

BASES

<u>SECTION</u>	<u>PAGE</u>
<u>REFUELING OPERATIONS (Continued)</u>	
3/4.9.6 REFUELING MACHINE.....	B 3/4 9-2
3/4.9.7 CRANE TRAVEL - SPENT FUEL STORAGE FACILITY.....	B 3/4 9-2
3/4.9.8 RESIDUAL HEAT REMOVAL AND COOLANT CIRCULATION.....	B 3/4 9-2
3/4.9.9 CONTAINMENT VENTILATION SYSTEM.....	B 3/4 9-2
3/4.9.10 and 3/4.9.11 WATER LEVEL - REACTOR VESSEL and STORAGE POOL.....	B 3/4 9-3
3/4.9.12 SPENT FUEL ASSEMBLY STORAGE.....	B 3/4 9-3
3/4.9.13 EMERGENCY EXHAUST SYSTEM.....	B 3/4 9-3
 <u>3/4.10 SPECIAL TEST EXCEPTIONS</u>	
3/4.10.1 SHUTDOWN MARGIN.....	B 3/4 10-1
3/4.10.2 GROUP HEIGHT, INSERTION, AND POWER DISTRIBUTION LIMITS....	B 3/4 10-1
3/4.10.3 PHYSICS TESTS.....	B 3/4 10-1
3/4.10.4 REACTOR COOLANT LOOPS.....	B 3/4 10-1
3/4.10.5 POSITION INDICATION SYSTEM - SHUTDOWN.....	B 3/4 10-1
 <u>3/4.11 RADIOACTIVE EFFLUENTS</u>	
3/4.11.1.4 Liquid Holdup Tanks.....	B 3/4 11-1
3/4.11.2.5 Explosive Gas Mixture.....	B 3/4 11-1
3/4.11.2.6 Gas Storage Tanks.....	B 3/4 11.1
 <u>3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING</u>	 DELETED

INDEX

DESIGN FEATURES

<u>SECTION</u>	<u>PAGE</u>
<u>5.1 SITE</u>	
5.1.1 EXCLUSION AREA.....	5-1
5.1.2 LOW POPULATION ZONE.....	5-1
5.1.3 MAPS DEFINING UNRESTRICTED AREAS AND SITE BOUNDARY FOR RADIOACTIVE GASEOUS AND LIQUID EFFLUENTS.....	5-1
FIGURE 5.1-1 EXCLUSION AREA.....	5-2
FIGURE 5.1-2 LOW POPULATION ZONE.....	5-3
FIGURE 5.1-3 SITE BOUNDARY FOR GASEOUS EFFLUENTS.....	5-4
FIGURE 5.1-4 SITE BOUNDARY FOR LIQUID EFFLUENTS.....	5-5
<u>5.2 CONTAINMENT</u>	
5.2.1 CONFIGURATION.....	5-1
5.2.2 DESIGN PRESSURE AND TEMPERATURE.....	5-1
<u>5.3 REACTOR CORE</u>	
5.3.1 FUEL ASSEMBLIES.....	5-6
5.3.2 CONTROL ROD ASSEMBLIES.....	5-6
<u>5.4 REACTOR COOLANT SYSTEM</u>	
5.4.1 DESIGN PRESSURE AND TEMPERATURE.....	5-6
5.4.2 VOLUME.....	5-6
<u>5.5 METEOROLOGICAL TOWER LOCATION</u>	5-6
<u>5.6 FUEL STORAGE</u>	
5.6.1 CRITICALITY.....	5-7
5.6.2 DRAINAGE.....	5-7
5.6.3 CAPACITY.....	5-7
FIGURE 5.6-1 MINIMUM REQUIRED FUEL ASSEMBLY EXPOSURE AS A FUNCTION OF INITIAL ENRICHMENT TO PERMIT STORAGE IN REGION 2.....	5-8
<u>5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT</u>	5-7
TABLE 5.7-1 COMPONENT CYCLIC OR TRANSIENT LIMIT.....	5-9

INDEX

ADMINISTRATIVE CONTROLS

<u>SECTION</u>	<u>PAGE</u>
<u>6.1 RESPONSIBILITY</u>	6-1
<u>6.2 ORGANIZATION</u>	
6.2.1 ONSITE AND OFFSITE ORGANIZATION.....	6-1
6.2.2 UNIT STAFF.....	6-2
FIGURE 6.2-1 DELETED.....	6-3
FIGURE 6.2-2 DELETED.....	6-4
TABLE 6.2-1 MINIMUM SHIFT CREW COMPOSITION.....	6-5
6.2.3 INDEPENDENT SAFETY ENGINEERING GROUP (ISEG)	
Function.....	6-6
Composition.....	6-6
Responsibilities.....	6-6
Records.....	6-6
6.2.4 SHIFT TECHNICAL ADVISOR.....	6-6
<u>6.3 UNIT STAFF QUALIFICATIONS</u>	6-6
<u>6.4 TRAINING</u>	6-7
<u>6.5 REVIEW AND AUDIT</u>	
6.5.1 ON-SITE REVIEW COMMITTEE (ORC)	
Function.....	6-7
Composition.....	6-7
Alternates.....	6-7
Meeting Frequency.....	6-7
Quorum.....	6-7
Responsibilities.....	6-8
Records.....	6-9

INDEX

ADMINISTRATIVE CONTROLS

<u>SECTION</u>	<u>PAGE</u>
6.5.2 NUCLEAR SAFETY REVIEW BOARD (NSRB)	
Function.....	6-9
Composition.....	6-10
Alternates.....	6-10
Consultants.....	6-10
Meeting Frequency.....	6-10
Qualifications.....	6-10
Quorum.....	6-10
Review.....	6-11
Audits.....	6-11
Records.....	6-12
6.5.3 TECHNICAL REVIEW AND CONTROL	
Activities.....	6-13
Records.....	6-14
6.6 <u>REPORTABLE EVENT ACTION</u>	6-14
6.7 <u>SAFETY LIMIT VIOLATION</u>	6-14
6.8 <u>PROCEDURES AND PROGRAMS</u>	6-15
6.9 <u>REPORTING REQUIREMENTS</u>	
6.9.1 ROUTINE REPORTS.....	6-19
Startup Report.....	6-19
Annual Reports.....	6-19
Annual Radiological Environmental Operating Report.....	6-20
Semiannual Radioactive Effluent Release Report.....	6-20
Monthly Operating Report.....	6-21
Peaking Factor Limit Report.....	6-21
6.9.2 SPECIAL REPORTS.....	6-21
6.10 <u>RECORD RETENTION</u>	6-21
6.11 <u>RADIATION PROTECTION PROGRAM</u>	6-23

INDEX

ADMINISTRATIVE CONTROLS

<u>SECTION</u>	<u>PAGE</u>
<u>REPORTING REQUIREMENTS (Continued)</u>	
<u>6.12 HIGH RADIATION AREA.....</u>	<u>6-23</u>
<u>6.13 PROCESS CONTROL PROGRAM (PCP).....</u>	<u>6-24</u>
<u>6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM).....</u>	<u>6-25</u>

DEFINITIONS

\bar{E} - AVERAGE DISINTEGRATION ENERGY

1.11 \bar{E} shall be the average (weighted in proportion to the concentration of each radionuclide in the reactor coolant at the time of sampling) of the sum of the average beta and gamma energies per disintegration (in MeV) for isotopes, other than iodines, with half-lives greater than 15 minutes, making up at least 95% of the total noniodine activity in the coolant.

ENGINEERED SAFETY FEATURES RESPONSE TIME

1.12 The ENGINEERED SAFETY FEATURES (ESF) RESPONSE TIME shall be that time interval from when the monitored parameter exceeds its ESF Actuation Setpoint at the channel sensor until the ESF equipment is capable of performing its safety function (i.e., the valves travel to their required positions, pump discharge pressures reach their required values, etc.). Times shall include diesel generator starting and sequence loading delays where applicable.

FREQUENCY NOTATION

1.13 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1.

IDENTIFIED LEAKAGE

1.14 IDENTIFIED LEAKAGE shall be:

- a. Leakage (except CONTROLLED LEAKAGE) into closed systems, such as pump seal or valve packing leaks that are captured and conducted to a sump or collecting tank, or
- b. Leakage into the containment atmosphere from sources that are both specifically located and known either not to interfere with the operation of Leakage Detection Systems or not to be PRESSURE BOUNDARY LEAKAGE, or
- c. Reactor Coolant System leakage through a steam generator to the Secondary Coolant System.

MASTER RELAY TEST

1.15 A MASTER RELAY TEST shall be the energization of each master relay and verification of OPERABILITY of each relay. The MASTER RELAY TEST shall include a continuity check of each associated slave relay.

MEMBER(S) OF THE PUBLIC

1.16 MEMBER(S) OF THE PUBLIC shall include all persons who are not occupationally associated with the plant. This category does not include employees of the licensee, its contractors or vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of the site for recreational, occupational, or other purposes not associated with the plant.

DEFINITIONS

OFFSITE DOSE CALCULATION MANUAL

1.17 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses due to radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by Section 6.8.4, and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Semi-annual Radioactive Effluent Release Reports required by Specifications 6.9.1.6 and 6.9.1.7.

OPERABLE - OPERABILITY

1.18 A system, subsystem, train, component or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s), and when all necessary attendant instrumentation, controls, electrical power, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related support function(s).

OPERATIONAL MODE - MODE

1.19 An OPERATIONAL MODE (i.e., MODE) shall correspond to any one inclusive combination of core reactivity condition, power level, and average reactor coolant temperature specified in Table 1.2.

PHYSICS TESTS

1.20 PHYSICS TESTS shall be those tests performed to measure the fundamental nuclear characteristics of the core and related instrumentation: (1) described in Chapter 14.0 of the FSAR, or (2) authorized under the provisions of 10 CFR 50.59, or (3) otherwise approved by the Commission.

PRESSURE BOUNDARY LEAKAGE

1.21 PRESSURE BOUNDARY LEAKAGE shall be leakage (except steam generator tube leakage) through a nonisolable fault in a Reactor Coolant System component body, pipe wall, or vessel wall.

PROCESS CONTROL PROGRAM

1.22 The PROCESS CONTROL PROGRAM shall contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, and State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

PURGE - PURGING

1.23 PURGE or PURGING shall be any controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration, or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.

DEFINITIONS

QUADRANT POWER TILT RATIO

1.24 QUADRANT POWER TILT RATIO shall be the ratio of the maximum upper excore detector calibrated output to the average of the upper excore detector calibrated outputs, or the ratio of the maximum lower excore detector calibrated output to the average of the lower excore detector calibrated outputs, whichever is greater. With one excore detector inoperable, the remaining three detectors shall be used for computing the average.

RATED THERMAL POWER

1.25 RATED THERMAL POWER shall be a total core heat transfer rate to the reactor coolant of 3565 MWt.

REACTOR TRIP SYSTEM RESPONSE TIME

1.26 The REACTOR TRIP SYSTEM RESPONSE TIME shall be the time interval from when the monitored parameter exceeds its Trip Setpoint at the channel sensor until loss of stationary gripper coil voltage.

REPORTABLE EVENT

1.27 A REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

RESTRICTED AFD OPERATION

1.28 RESTRICTED AFD OPERATION (RAFDO) limits the AXIAL FLUX DIFFERENCE (AFD) to a $\pm 3\%$ target band about the target flux difference and restricts power levels to between APLND and either APLRAFDO or 100% RATED THERMAL POWER, whichever is less. APLND and APLRAFDO are defined in Specifications 3.2.1 and 4.2.2.3, respectively. RAFDO may be entered at the discretion of the licensee.

SHUTDOWN MARGIN

1.29 SHUTDOWN MARGIN shall be the instantaneous amount of reactivity by which the reactor is subcritical or would be subcritical from its present condition assuming all full-length rod cluster assemblies (shutdown and control) are fully inserted except for the single rod cluster assembly of highest reactivity worth which is assumed to be fully withdrawn.

SITE BOUNDARY

1.30 The SITE BOUNDARY shall be that line beyond which the land is neither owned, nor leased, nor otherwise controlled by the licensee.

SLAVE RELAY TEST

1.31 A SLAVE RELAY TEST shall be the energization of each slave relay and verification of OPERABILITY of each relay. The SLAVE RELAY TEST shall include a continuity check, as a minimum, of associated testable actuation devices.

DEFINITIONS

DELETED

SOURCE CHECK

1.33 A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

STAGGERED TEST BASIS

1.34 A STAGGERED TEST BASIS shall consist of:

- a. A test schedule for n systems, subsystems, trains, or other designated components obtained by dividing the specified test interval into n equal subintervals, and
- b. The testing of one system, subsystem, train or other designated component at the beginning of each subinterval.

THERMAL POWER

1.35 THERMAL POWER shall be the total core heat transfer rate to the reactor coolant.

TRIP ACTUATING DEVICE OPERATIONAL TEST

1.36 A TRIP ACTUATING DEVICE OPERATIONAL TEST shall consist of operating the Trip Actuating Device and verifying OPERABILITY of alarm, interlock and/or trip functions. The TRIP ACTUATING DEVICE OPERATIONAL TEST shall include adjustment, as necessary, of the Trip Actuating Device such that it actuates at the required Setpoint within the required accuracy.

UNIDENTIFIED LEAKAGE

1.37 UNIDENTIFIED LEAKAGE shall be all leakage which is not IDENTIFIED LEAKAGE or CONTROLLED LEAKAGE.

UNRESTRICTED AREA

1.38 An UNRESTRICTED AREA shall be any area at or beyond the SITE BOUNDARY access to which is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials, or any area within the SITE BOUNDARY used for residential quarters or for industrial, commercial, institutional, and/or recreational purposes.

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INSTRUMENTATION

WASTE GAS HOLDUP SYSTEM

EXPLOSIVE GAS MONITORING INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.3.10 At least one hydrogen and both the inlet and outlet oxygen explosive gas monitoring instrumentation channels for each WASTE GAS HOLDUP SYSTEM recombiner shall be OPERABLE with their Alarm/Trip Setpoints set to ensure that the limits of Specification 3.11.2.5 are not exceeded.

APPLICABILITY: During WASTE GAS HOLDUP SYSTEM operation.

ACTION:

- a. With an outlet oxygen monitor channel inoperable, operation of the system may continue provided grab samples are taken and analyzed at least once per 24 hours.
- b. With both oxygen or both hydrogen channels or both the inlet oxygen and inlet hydrogen monitor channels for one recombiner inoperable, suspend oxygen supply to the recombiner. Addition of waste gas to the system may continue provided grab samples are taken and analyzed at least once per 4 hours during degassing operations and at least once per 24 hours during other operations.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.10 Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of:

- a. A CHANNEL CHECK at least once per 24 hours,
- b. An ANALOG CHANNEL OPERATIONAL TEST at least once per 31 days, and
- c. A CHANNEL CALIBRATION at least once per 92 days with the use of standard gas samples containing a nominal:
 - 1) One volume percent hydrogen, balance nitrogen and four volume percent hydrogen, balance nitrogen for the hydrogen monitor, and
 - 2) One volume percent oxygen, balance nitrogen, and four volume percent oxygen, balance nitrogen for the inlet oxygen monitor, and
 - 3) 10ppm by volume oxygen, balance nitrogen and 80ppm by volume oxygen, balance nitrogen for the outlet oxygen monitor.

INSTRUMENTATION

3/4.3.4 TURBINE OVERSPEED PROTECTION

LIMITING CONDITION FOR OPERATION

3.3.4 At least one Turbine Overspeed Protection System shall be OPERABLE.

APPLICABILITY: MODES 1, 2*, and 3*.

ACTION:

- a. With one stop valve or one governor valve per high pressure turbine steam line inoperable and/or with one reheat stop valve or one reheat intercept valve per low pressure turbine steam line inoperable, restore the inoperable valve(s) to OPERABLE status within 72 hours, or close at least one valve in the affected steam lines, or isolate the turbine from the steam supply within the next 6 hours.
- b. With the above required Turbine Overspeed Protection System otherwise inoperable, within 6 hours isolate the turbine from the steam supply.

SURVEILLANCE REQUIREMENTS

4.3.4.1 The provisions of Specification 4.0.4 are not applicable.

4.3.4.2 The above required Turbine Overspeed Protection System shall be maintained, calibrated, tested, and inspected in accordance with the Callaway Plant's Turbine Overspeed Protection Reliability Program. Adherence to this program shall demonstrate OPERABILITY of this system. The program and any revisions should be reviewed and approved in accordance with Specification 6.5.1.60. Revisions shall be made in accordance with the provisions of 10 CFR 50.59.

*Not applicable in MODE 2 or 3 with all main steam line isolation valves and associated bypass valves in the closed position and all other steam flow paths to the turbine isolated.

RADIOACTIVE EFFLUENTS

LIQUID HOLDUP TANKS

LIMITING CONDITION FOR OPERATION

3.11.1.4 The quantity of radioactive material contained in each of the following unprotected outdoor tanks shall be limited to less than or equal to 150 Curies, excluding tritium and dissolved or entrained noble gases:

- a. Reactor Makeup Water Storage Tank,
- b. Refueling Water Storage Tank,
- c. Condensate Storage Tank, and
- d. Outside temporary tanks, excluding demineralizer vessels and the liner being used to solidify radioactive waste.

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in any of the above listed tanks exceeding the above limit, immediately suspend all additions of radioactive material to the tank, within 48 hours reduce the tank contents to within the limit, and describe the events leading to this condition in the next Semiannual Radioactive Effluent Release Report, pursuant to Specification 6.9.1.7.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each of the above listed tanks shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added and within 7 days following any addition of radioactive material to the tank.

RADIOACTIVE EFFLUENTS

EXPLOSIVE GAS MIXTURE

LIMITING CONDITION FOR OPERATION

3.11.2.5 The concentration of oxygen in the WASTE GAS HOLDUP SYSTEM shall be limited to less than or equal to 3% by volume whenever the hydrogen concentration exceeds 4% by volume.

APPLICABILITY: At all times.

ACTION:

- a. With the concentration of oxygen in the WASTE GAS HOLDUP SYSTEM greater than 3% by volume but less than or equal to 4% by volume, reduce the oxygen concentration to the above limits within 48 hours.
- b. With the concentration of oxygen in the WASTE GAS HOLDUP SYSTEM greater than 4% by volume and the hydrogen concentration greater than 4% by volume, immediately suspend all additions of waste gases to the system and reduce the concentration of oxygen to less than or equal to 4% by volume, then take ACTION a. above.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5 The concentrations of hydrogen and oxygen in the WASTE GAS HOLDUP SYSTEM shall be determined to be within the above limits by continuously monitoring the waste gases in the WASTE GAS HOLDUP SYSTEM with the hydrogen and oxygen monitors required OPERABLE by Table 3.3-13 of Specification 3.3.3.10.

RADIOACTIVE EFFLUENTS

GAS STORAGE TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas storage tank shall be limited to less than or equal to 2.5×10^5 Curies of noble gases (considered as Xe-133 equivalent).

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and, within 48 hours, reduce the tank contents to within the limit, and describe the events leading to this condition in the next Semiannual Radioactive Effluent Release Report, pursuant to Specification 6.9.1.7.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas storage tank shall be determined to be within the above limit at least once per 7 days when radioactive materials are being added and within 7 days following any addition of radioactive material to the tank.

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SECTION 3/4.12 DELETED IN ITS ENTIRETY

INSTRUMENTATION

BASES

3/4.3.3.8 LOOSE-PART DETECTION SYSTEM

The OPERABILITY of the loose-part detection instrumentation ensures that sufficient capability is available to detect loose metallic parts in the Reactor Coolant System and avoid or mitigate damage to Reactor Coolant System components. The allowable out-of-service times and Surveillance Requirements are consistent with the recommendations of Regulatory Guide 1.133, "Loose-Part Detection Program for the Primary System of Light-Water-Cooled Reactors," May 1981.

3/4.3.4 TURBINE OVERSPEED PROTECTION

This specification is provided to ensure that the turbine overspeed protection instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Although the orientation of the turbine is such that the number of potentially damaging missiles which could impact and damage safety-related components, equipment, or structures is minimal, protection from excessive turbine overspeed is required.

RADIOACTIVE EFFLUENTS

BASES

3/4.11.1.4 LIQUID HOLDUP TANKS

The tanks listed in this specification include all those outdoor radwaste tanks that are not surrounded by liners, dikes, or walls capable of holding the tank contents and that do not have tank overflows and surrounding area drains connected to the Liquid Radwaste Treatment System.

Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix B, Table II, Column 2, at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA.

3/4.11.2.5 EXPLOSIVE GAS MIXTURE

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas holdup system is maintained below the flammability limits of hydrogen and oxygen. Automatic control features are included in the system to prevent the hydrogen and oxygen concentrations from reaching these flammability limits. These automatic control features include isolation of the source of hydrogen and/or oxygen. Maintaining the concentration of hydrogen and oxygen below their flammability limits provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

3/4.11.2.6 GAS STORAGE TANKS

The tanks included in this specification are those tanks for which the quantity of radioactivity contained is not limited directly or indirectly by another Technical Specification. Restricting the quantity of radioactivity contained in each gas storage tank provides assurance that in the event of an uncontrolled release of the tank's contents, the resulting whole body exposure to a MEMBER OF THE PUBLIC at the nearest SITE BOUNDARY will not exceed 0.5 rem. This is consistent with Standard Review Plan 11.3, Branch Technical Position ETSB 11-5, "Postulated Radioactive Releases Due to a Waste Gas System Leak or Failure," in NUREG-0800, July 1981.

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Section Bases 3/4.12 deleted in its entirety

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

e. Turbine Overspeed Protection Reliability Program

A program to increase the assurance that the Turbine Overspeed Protection System functions, if challenged, and to assure structural integrity of turbine components which could result in missile generation in the event of an actual overspeed occurrence. The program shall include the following:

- 1) Periodic testing and inspection requirements,
- 2) Specification of test and inspection intervals, and
- 3) Administrative restrictions and procedural guidance for program implementation such as: record keeping; reporting; evaluation and disposition of discrepancies; review and approval of revisions to the program; and authorization(s) required to deviate from the program guidelines.

f. Radioactive Effluent Controls Program

A program shall be provided conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,
- 2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2,
- 3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM,
- 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,
- 5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

f. Radioactive Effluent Controls Program (Continued)

- 6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,
- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 50, Appendix B, Table II, Column 1,
- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

g. Radiological Environmental Monitoring Program

A program shall be provided to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- 2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and

ADMINISTRATIVE CONTROLS

PROCEDURES AND PROGRAMS (Continued)

g. Radiological Environmental Monitoring Program (Continued)

- 3) Participation in a Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

6.9 REPORTING REQUIREMENTS

ROUTINE REPORTS

6.9.1 In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following reports shall be submitted to the Regional Administrator of the NRC Regional Office unless otherwise noted.

STARTUP REPORT

6.9.1.1 A summary report of plant startup and power escalation testing shall be submitted following: (1) receipt of an Operating License, (2) amendment to the License involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufactured by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant.

6.9.1.2 The Startup Report shall address each of the tests identified in the FSAR and shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

6.9.1.3 Startup Reports shall be submitted within: (1) 90 days following completion of the Startup Test Program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of Startup Test Program, and resumption or commencement of commercial operation) supplementary reports shall be submitted at least every 3 months until all three events have been completed.

ANNUAL REPORTS

6.9.1.4 Annual Reports covering the activities of the unit as described below for the previous calendar year shall be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

ADMINISTRATIVE CONTROLS

ANNUAL REPORTS (Continued)

6.9.1.5 Reports required on an annual basis shall include a tabulation on an annual basis of the number of station, utility, and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man-rem exposure according to work and job functions,* e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignments to various duty functions may be estimated based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources should be assigned to specific major work functions.

The report shall also include the results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT

6.9.1.6 The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analysis of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in (1) the ODCM and (2) Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

6.9.1.7 The Semiannual Radioactive Effluent Release Report covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

* This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.

ADMINISTRATIVE CONTROLS

MONTHLY OPERATING REPORT

6.9.1.8 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the pressurizer PORVs or RCS safety valves, shall be submitted on a monthly basis to the Director, Office of Resource Management, U.S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the NRC Regional Office, no later than the 15th of each month following the calendar month covered by the report.

PEAKING FACTOR LIMIT REPORT

6.9.1.9 The $W(z)$ functions for Normal and RESTRICTED AFD OPERATION and the value for APLND (as required) shall be established for at least each reload core and shall be maintained available in the Control Room. The limits shall be established and implemented on a time scale consistent with normal procedural changes.

The analytical methods used to generate the $W(z)$ functions and APLND shall be those previously reviewed and approved by the NRC*. If changes to these methods are deemed necessary, they will be evaluated in accordance with 10 CFR 50.59 and submitted to the NRC for review and approval prior to their use if the change is determined to involve an unreviewed safety question or if such a change would require amendment of previously submitted documentation.

A report containing the $W(z)$ functions, as a function of core height (and burnup, if applicable) and APLND shall be provided to the NRC Document Control Desk with copies to the Regional Administrator and the Resident Inspector within 30 days of their implementation.

SPECIAL REPORTS

6.9.2 Special Reports shall be submitted to the Regional Administrator of the NRC Regional Office within the time period specified for each report.

6.10 RECORD RETENTION

In addition to the applicable record retention requirements of Title 10, Code of Federal Regulations, the following records shall be retained for at least the minimum period indicated.

6.10.1 The following records shall be retained for at least 5 years:

- a. Records and logs of unit operation covering time interval at each power level;

*WCAP-8385, "Power Distribution Control and Load Following Procedures," WCAP-9272-A, "Westinghouse Reload Safety Evaluation Methodology," and WCAP-10216-P-A, "Relaxation of Constant Axial Offset Control / Fq Surveillance Technical Specification."

ADMINISTRATIVE CONTROLS

RECORD RETENTION (Continued)

- b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety;
- c. All REPORTABLE EVENTS;
- d. Records of surveillance activities; inspections and calibrations required by these Technical Specifications;
- e. Records of changes made to the procedures required by Specification 6.8.1;
- f. Records of radioactive shipments;
- g. Records of sealed source and fission detector leak tests and results; and
- h. Records of annual physical inventory of all sealed source material of record.

6.10.2 The following records shall be retained for the duration of the unit Operating License:

- a. Records and drawing changes reflecting unit design modifications made to systems and equipment described in the Final Safety Analysis Report;
- b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories;
- c. Records of radiation exposure for all individuals entering radiation control areas;
- d. Records of gaseous and liquid radioactive material released to the environs;
- e. Records of transient or operational cycles for those unit components identified in Table 4.7-1;
- f. Records of reactor tests and experiments;
- g. Records of training and qualification for current members of the unit staff;
- h. Records of in-service inspections performed pursuant to these Technical Specifications;
- i. Records of quality assurance activities required by the QA Program;

ADMINISTRATIVE CONTROLS

RECORD RETENTION (Continued)

- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59;
- k. Records of meetings of the ORC and the NSRB;
- l. Records of the service lives of all hydraulic and mechanical snubbers required by Specification 3.7.8 including the date at which the service life commences and associated installation and maintenance records;
- m. Records of secondary water sampling and water quality;
- n. Records of analysis required by the Radiological Environmental Monitoring Program that would permit evaluation of the accuracy of the analysis at a later date. This should include procedures effective at specified times and QA records showing that these procedures were followed; and
- o. Records of reviews performed for changes made to APA-ZZ-01003, the OFFSITE DOSE CALCULATION MANUAL and APA-ZZ-01011, the PROCESS CONTROL PROGRAM.

6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

6.12 HIGH RADIATION AREA

6.12.1 Pursuant to Paragraph 20.203(c)(5) of 10 CFR Part 20, in lieu of the "control device" or "alarm signal" required by Paragraph 20.203(c)(2) each high radiation area, as defined in 10 CFR Part 20, in which the intensity of radiation is equal to or less than 1000 mR/h at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit (RWP). Individuals qualified in radiation protection procedures (e.g., Health Physics Technician) or personnel continuously escorted by such individuals may be exempt from the RWP issuance requirement during the performance of their assigned duties in high radiation areas with exposure rates equal to or less than 1000 mR/h, provided they are otherwise following plant radiation protection procedures for entry into such high radiation areas. Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device which continuously indicates the radiation dose rate in the area, or

ADMINISTRATIVE CONTROLS

6.12 HIGH RADIATION AREA (Continued)

- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a pre-set integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate levels in the area have been established and personnel have been made knowledgeable of them, or
- c. An individual qualified in radiation protection procedures with a radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by Health Physics management personnel in the RWP.

6.12.2 In addition to the requirements of Specification 6.12.1, areas accessible to personnel with radiation levels greater than 1000 mR/h at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be provided with locked doors to prevent unauthorized entry, and the keys shall be maintained under the administrative control of the Shift Supervisor/ Operating Supervisor on duty and/or health physics supervision. Doors shall remain locked except during periods of access by personnel under an approved RWP which shall specify the dose rate levels in the immediate work areas and the maximum allowable stay time for individuals in that area. In lieu of the stay time specification of the RWP, direct or remote (such as closed-circuit TV cameras) continuous surveillance may be made by personnel qualified in radiation protection procedures to provide positive exposure control over the activities being performed within the area.

For individual high radiation areas accessible to personnel with radiation levels of greater than 1000 mR/h that are located within large areas, such as PWR containment, where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual area, that individual area shall be barricaded, conspicuously posted, and a flashing light shall be activated as a warning device.

6.13 PROCESS CONTROL PROGRAM (PCP)

Changes to the PCP:

- a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.20. This documentation shall contain:
 - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and
 - 2) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.

ADMINISTRATIVE CONTROLS

6.13 PROCESS CONTROL PROGRAM (PCP) (Continued)

- b. Shall become effective after review and acceptance by the ORC and the approval of the Plant Manager.

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

Changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained as required by Specification 6.10.20. This documentation shall contain:
 - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
 - 2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- b. Shall become effective after review and acceptance by the ORC and the approval of the Plant Manager.
- c. Shall be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Semiannual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and shall indicate the date (e.g., month/year) the change was implemented.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
RELATED TO AMENDMENT NO. 50 TO FACILITY OPERATING LICENSE NO. NPF-30

UNION ELECTRIC COMPANY
CALLAWAY PLANT, UNIT 1
DOCKET NO. STN 50-483

1.0 INTRODUCTION

By letter dated September 6, 1989, Union Electric Company (the licensee) proposed to incorporate programmatic controls for radiological effluents and radiological environmental monitoring in the Administrative Controls section of the Technical Specifications (TS) consistent with the requirements of 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50. At the same time, the licensee proposed to transfer the procedural details of the Radiological Effluent Technical Specifications (RETS) from the TS to the Offsite Dose Calculation Manual (ODCM) or to the Process Control Program (PCP) for solid radioactive wastes as appropriate. With these changes, the specifications related to RETS reporting requirements were simplified. Finally, changes to the definitions of the ODCM and PCP were proposed consistent with these changes. Guidance on these proposed changes was provided to all power reactor licensees and applicants by Generic Letter 89-01 dated January 31, 1989.

2.0 EVALUATION

The licensee's proposed changes to the TS are in accordance with the guidance provided in Generic Letter 89-01 and are addressed below.

- (1) The licensee has proposed to incorporate programmatic controls for radioactive effluents and radiological environmental monitoring in Specification 6.8, "Procedures and Programs," of the TS as noted in the guidance provided in Generic Letter 89-01. The programmatic controls ensure that programs are established, implemented, and maintained to ensure that operating procedures are provided to control radioactive effluents consistent with the requirements of 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50.
- (2) The licensee has confirmed that the detailed procedural requirements addressing Limiting Conditions for Operation, their applicability, remedial actions, associated surveillance requirements, or reporting requirements for the following specifications have been prepared for inclusion in the ODCM or PCP. These changes to the ODCM and PCP have been prepared in accordance with the new Administrative Controls in the TS on changes to the ODCM and PCP so that they will be implemented in the ODCM or PCP following issuance of this amendment and upon the licensee's completion of the necessary departmental procedural changes within approximately 90 days.

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The specifications and associated procedural details discussed above that the licensee is proposing to delete from the TS and include in the ODCM or PCP are as follows:

<u>SPECIFICATION</u>	<u>TITLE</u>
3/4.3.3.9	RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION
3/4.3.3.10	RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION
3/4.11.1.1	RADIOACTIVE EFFLUENTS: LIQUID EFFLUENTS CONCENTRATION
3/4.11.1.2	RADIOACTIVE EFFLUENTS: LIQUID EFFLUENTS DOSE
3/4.11.1.3	RADIOACTIVE EFFLUENTS: LIQUID RADWASTE TREATMENT SYSTEM
3/4.11.2.1	RADIOACTIVE EFFLUENTS: GASEOUS EFFLUENTS DOSE RATE
3/4.11.2.2	RADIOACTIVE EFFLUENTS: DOSE - NOBLE GASES
3/4.11.2.3	RADIOACTIVE EFFLUENTS: DOSE - IODINE-131, IODINE-133, TRITIUM, AND RADIOACTIVE MATERIAL IN PARTICULATE FORM
3/4.11.2.4	RADIOACTIVE EFFLUENTS: [GASEOUS RADWASTE TREATMENT] SYSTEM
3/4.11.3	RADIOACTIVE EFFLUENTS: SOLID RADIOACTIVE WASTES
3/4.11.4	RADIOACTIVE EFFLUENTS: TOTAL DOSE
3/4.12.1	RADIOLOGICAL ENVIRONMENTAL MONITORING: MONITORING PROGRAM
3/4.12.2	RADIOLOGICAL ENVIRONMENTAL MONITORING: LAND USE CENSUS
3/4.12.3	RADIOLOGICAL ENVIRONMENTAL MONITORING: INTERLABORATORY COMPARISON PROGRAM
6.9.1.6	ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT
6.9.1.7	SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT
6.15	MAJOR CHANGES TO LIQUID, GASEOUS, AND SOLID RADWASTE TREATMENT SYSTEMS

These procedural details that have been removed from the TS are not required by the Commission's regulations to be included in TS. They have been prepared for incorporation in the ODCM or PCP upon implementation of this license amendment and may be subsequently changed by the licensee without prior NRC approval. Changes to the ODCM and PCP are documented and will be retained for the duration of the operating license in accordance with Specification 6.10.2o.

- (3) The licensee has proposed replacing the existing specifications in the Administrative Controls section of the TS for the Annual Radiological Environmental Operating Report, Specification 6.9.1.6 for the Semiannual Radioactive Effluent Release Report, Specification 6.9.1.7, for the Process Control Program, Specification 6.13, and for the Offsite Dose Calculation Manual, Specification 6.14, with the updated specifications that were provided in Generic Letter 89-01.

The following specifications that are included under the heading of Radioactive Effluents have been retained in the TS. This is in accordance with the guidance of Generic Letter 89-01.

<u>SPECIFICATION</u>	<u>TITLE</u>
3/4.3.3.10	EXPLOSIVE GAS MONITORING INSTRUMENTATION (Retained existing requirements of this specification)
3/4.11.1.4	LIQUID HOLDUP TANKS
3/4.11.2.5	EXPLOSIVE GAS MIXTURE
3/4.11.2.6	GAS STORAGE TANKS

On the basis of the above, the staff finds that the changes included in the proposed TS amendment request are consistent with the guidance provided in Generic Letter 89-01. Because the control of radioactive effluents continues to be limited in accordance with operating procedures that must satisfy the regulatory requirements of 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50, the NRC staff concludes that this change is administrative in nature and there is no impact on plant safety as a consequence. An additional change deletes inappropriate footnote references to a multiple unit station.

3.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of a facility component located within the restricted area as defined in 10 CFR Part 20 or a change to a surveillance requirement. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or

cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). This amendment also involves changes in record-keeping, reporting or administrative procedures or requirements. Accordingly, with respect to these items, the amendments meet the eligibility criteria for categorical exclusion set forth in 10 CFR §51.22(c)(10). Pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

4.0 CONCLUSION

On the basis of the considerations discussed above, the staff concludes that (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

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Dated: February 12, 1990