ATTACHMENT B

PROPOSED CHANGES TO APPENDIX A, TECHNICAL SPECIFICATIONS, OF FACILITY OPERATING LICENSES NPF-37, NPF-66, NPF-72, and NPF-77

Revision to:	I
	II
	XVIII
	XX
	1-2
	1-2a
	1.3
	1.39
	1.4
	1.5
	1-0
	1-5a
	1-6
	3/4 3-40
	3/4 3-41 -
	3/4 11-1
	3/4 11-3
	B 3/4 11-1
	B 3/4 11-2
	5-1
	5-2
	5-4
	6-18
	6-19
	6-20
	6.21
	6.99
	C 94
	C 95
	0-20
	0-20
	6-27

INDEX

SECT	ION	PAG
1.0	DEFINITIONS	
1.1	ACTION	1-
1.2	ACTUATION LOGIC TEST	1-
1.3	ANALOG CHANNEL OPERATIONAL TEST	1-
1.4	AXIAL FLUX DIFFERENCE	1-
1.5	CHANNEL CALIBRATION	1-
1.6	CHANNEL CHECK	2-
1.7	CONTAINMENT IN EGRITY	1-
1.8	CONTROLLED LEAKAGE	1-
1.9	CORE ALTERATION	1-
1.9.	& CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL	
	STORAGE RACKS.	1-
1.10	DIGITAL CHANNEL OPERATIONAL TEST	1-
1.11	DOSE EQUIVALENT I-131.	1.
1.12	E-AVERAGE DISINTEGRATION ENERGY	1-
1.13	ENGINEERED SAFETY FEATURES RESPONSE TIME	1-
1.14	FREQUENCY NOTATION	1-
1.15	IDENTIFIED LEAKAGE	1-
1.16	MASTER RELAY TEST	1-
1.17	MEMBER(S) OF THE PUBLIC	1.
1.18	OFFSITE DOSE CALCULATION MANUAL	1.
1.19	OPERABLE - OPERABILITY	1-
1.19	a OPERATING LIMITS REPORT	1.
1.20	OPERATIONAL MODE - MODE	1.
1.21	PHYSICS TESTS	1-
1.22	PRESSURE BOUNDARY LEAKAGE	1.
1.23	PROCESS CONTROL PROGRAM	1.
1.24	PURGE - PURGING	1.
1.25	QUADRANT POWER TILT RATIO	1-
1.26	RATED THERMAL POWER	1.
1.27	REACTOR TRIP SYSTEM RESPONSE TIME	1.
1 28	REPORTABLE EVENT	1.

SECTI	ION	PAGE
(1.2B.	A RESTRICTED AREA	1-5)
1.29	SHUTDOWN MARGIN	1-50
1.30	SITE BOUNDARY	1-6
1.31	SLAVE RELAY TEST	1-6
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 NOTATION	1-8
TABLE	1.2 OPERATIONAL MODES	1-9

DESIGN FEATURES

SECTION

PAGE

5.1 SITE

5.1.1	EXCLUSION AREA	5-1
5.1.2	LOW POPULATION ZONE	5-1
5.1.3	MAP DEFINING UNRESTRICTED AREAS AND SITE BOUNDARY FOR RADIOACTIVE GASEOUS AND LIQUID EFFLUENTS	5-1
FIGURE	5.1-1 EXCLUSION AREA AND UNRESTRICTED AREA FOR RADIOACTIVE GASEOUS AND LIQUID EFFLUENTS	5-2
FIGURE	5.1-2 LOW POPULATION ZONE	5-3
5.2 C	DNTAINMENT	
5.2.1	CONFIGURATION	5-1
5.2.2	DESIGN PRESSURE AND TEMPERATURE	5-1
5.3 R	EACTOR CORE	
5.3.1	FUEL ASSEMBLIES	5-4
5.3.2	CONTROL ROD ASSEMBLIES	5-4
5.4 RI	EACTOR COOLANT SYSTEM	
5.4.1	DESIGN PRESSURE AND TEMPERATURE	5-4
5.4.2	VOLUME	5-4
5.5 ME	DELETED TEOROLOGICAL TOWER LOCATION	5-4
5.6 FL	JEL STORAGE	
5.6.1	CRITICALITY	5-5
5.6.2	DRAINAGE	5-5
5.6.3	CAPACITY	5-5
5.7 CC	MPONENT CYCLIC OR TRANSIENT LIMIT	5~5
TABLE 5	.7-1 COMPONENT CYCLIC OR TRANSIENT LIMITS	5-6

SECTION	PAGE
6.7 SAFETY LIMIT VIOLATION	6-15
6.8 PROCEDURES AND PROGRAMS	6-16
6.9 REPORTING REQUIREMENTS	6-20
6.9.1 ROUTINE REPORTS	6-20 6-20
Annual Radiological Environmental Operation Report	6-20
Semiannual Radioactive Effluent Release Report	6-22
Monthly Operating Report	6-22
Operating Limits Report	6-22
Criticality Analysis of Byron and Braidwood	0 22
Station Fuel Storage Racks	6-23
6.9.2 SPECIAL REPORTS	6-23
6.10 RECORD RETENTION	6-23
6.11 RADIATION PROTECTION PROGRAM	6-24
6.12 HIGH RADIATION AREA	6-25
6.13 PROCESS CONTROL PROGRAM (PCP)	6-26
6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)	6-26

XX

CONTAINMENT INTEGRITY

- 1.7 CONTAINMENT INTEGRITY shall exist when:
 - a. All penetrations required to be closed during accident conditions are either:
 - Capable of being closed by an OPERABLE containment automatic isolation valve system, or
 - Closed by manual valves, blind flanges, or deactivated automatic valves secured in their closed positions, except as provided in Table 3.6-1 of Specification 3.6.3.
 - b. All equipment hatches are closed and sealed.

Each air lock is in compliance with the requirements of Specification 3.6.1.3,

The containment leakage rates are within the limits of Specification 3.6.1.2, and

The sealing mechanism associated with each penetration (e.g., welds, bellows, or O-rings) is OPERABLE.

CONTROLLED LEAKAGE

C.

d.

€.

Insert

CONTROLLED

AREA definit

from Insert

MOVE

page

1-2a

1.8 CONTROLLED LEAKAGE shall be that seal water flow supplied to the reactor coolant pump seals.

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement or manipulation of any component within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATION shall not preclude completion of movement of a component to a safe conservative position.

CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS

1.9.a The CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS, is a document that provides the maximum allowable fuel enrichment for storage. These limits shall be determined and submitted in accordance with Specification 6.9.1.10. Plant operation within these limits is addressed in individual Specifications.

DIGITAL CHANNEL OPERATIONAL TEST

1.10 A DIGITAL CHANNEL OPERATIONAL TEST shall consist of exercising the digital computer hardware using data base manipulation and injecting simulated process data to verify OPERABILITY of alarm and/or trip functions.

E - AVERAGE DISINTEGRATION ENERGY

1.12 E shall be the average (weighted in proportion to the concentration of each radionuclide in the sample) of the sum of the average beta and gamma energies per disintegration (MeV/d) for the radionuclides in the sample.

ENGINEERED SAFETY FEATURES RESPONSE TIME

1.13 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 dissel generator starting and sequence loading delays where applicable.

FREQUENCY NOTATION

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

IDENTIFIED LEAKAGE

ARFA refinition from logert

Insert H.GH

RADIATION.

1.15 IDENTIFIED LEAKAGE shall be:

- Leakage (except CONTROLLED LEAKAGE) into closed systems, such as а. 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
- Reactor Coolant System leakage through a steam generator to the Č., Secondary Coolant System.

MASTER RELAY TEST

1.16 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

delete

1.17 MEMBER(3) OF THE PUBLID 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 and 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.

BYRON - UNITS 1 & 2

1-3

Insert "A"

Insert on page 1-2 before CONTROLLED LEAKAGE

CONTROLLED AREA

1.7.a The CONTROLLED AREA shall be an area, outside of a RESTRICTED AREA but inside the SITE BOUNDARY, access to which can be limited by the licensee for any reason.

Insert on top of page 1-2a

DEEP DOSE EQUIVALENT

1.9.b DEEP DOSE EQUIVALENT, which applies to external whole-body exposure, shall be the DOSE EQUIVALENT at a tissue depth of 1 cm (1000 mg/cm^2) .

Insert on page 1-2a after DIGITAL CHANNEL OPERATIONAL TEST

DOSE EQUIVALENT

1.10.b DOSE EQUIVALENT shall be the product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. The unit of DOSE EQUIVALENT is the rem.

Insert on p. 1-3 before IDENTIFIED LEAKAGE

HIGH RADIATION AREA

1.14.a A HIGH RADIATION AREA shall be an area, accessible to individuals, in which radiation levels could result in an individual receiving a DOSE EQUIVALENT in excess of 100 mrem in one hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

Insert on page 1-5 before SHUTDOWN MARGIN

RESTRICTED AREA

1.28.a A RESTRICTED AREA shall be an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials. RESTRICTED AREAS do not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a RESTRICTED AREA.

DOSE EQUIVALENT I-131

1.11 DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microCurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites."

INSERT DEEP DOSE EQUIVALENT definition from Insert "A" Move DIGITAL CHANNEL OPERATIONAL TEST From page 1-2 here Insert DOSE EQUIVALENT definition from Insert "A" Insert "B"

DEFINITIONS

MEMBER OF THE PUBLIC

1.17 A MEMBER OF THE PUBLIC shall be an individual in a CONTROLLED or UNRESTRICTED AREA. An individual is not a MEMBER OF THE PUBLIC during any period in which the individual receives an occupational dose.

BYRON - UNITS 1 & 2 1-3a AMENDMENT NO.

OFFSITE DOSE CALCULATION MANUAL

1.18 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from 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 Sections 6.8.4e and f, and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Semiannual Radioactive Effluent Release Reports required by Specifications 6.9.1.6 and 6.9.1.7.

OPERABLE - OPERABILITY

1.19 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).

OPERATING LIMITS REPORT

1.19.a The OPERATING LIMITS REPORT is the unit-specific document that provides operating limits for the current operating reload cycle. These cycle-specific operating limits shall be determined for each reload cycle in accordance with Specification 5.9.1.9. Plant operation within these operating limits is addressed in individual specifications.

OPERATIONAL MODE - MODE

1.20 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

1.21 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, (2) authorized under the provisions of 10 CFR 50.59, or (3) otherwise approved by the Commission.

PRESSURE BOUNDARY LEAKAGE

1.22 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

1.23 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that 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, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

PURGE - PURGING

1.24 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.

QUADRANT POWER TILT RATIO

1.25 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

1.26 RATED THERMAL POWER shall be a total core heat transfer rate to the reactor coolant of 3411 MWt.

REACTOR TRIP SYSTEM RESPONSE TIME

1.27 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

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

SHUTDOWN MARGIN

move to new page (1-5a)

msert

RESTRICTED) AREA definition

Showin on

Incert "A"

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.

SOLIDIFICATION

1.32 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 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.

BYRON - UNITS 1 & 2

TABLE 3.3-6

RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS

FUN	NCTIONAL UNIT	CHANNELS TO TRIP/ALARM	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP	40110
1.	Fuel Building Isolation- Radioactivity-High and Criticality (ORE-AR055/56)	1	2	*	5 -0 /L **	MUTIU
2.	Containment Isolation- Containment Radioactivity- High				<u><</u> 2 mk/n	29
	a) Unit 1 (1RE-AR011/12) b) Unit 2 (2RE-AR011/12)	1 1	2	A11 A11	** 5100 mR/h	26
3.	Gaseous Radioactivity- RCS Leakage Detection a) Unit 1 (1RE-PRO11B) b) Unit 2 (2RE-PRO11B)	N.A.	1	1, 2, 3, 4	N. A.	28
4.	Particulate Radioactivity- RCS Leakage Detection		1	1, 2, 3, 4	N.A.	28
	a) Unit 1 (1RE-PRO11A) b) Unit 2 (2RE-PRO11A)	N.A. N.A.	1 1	1, 2, 3, 4 1, 2, 3, 4	N.A. N.A.	28 28
5.	Main Control Room Isolation- Outside Air Intake-Gaseous Radioactivity-High					
	a) Train A (ORE-PR031B/32B) b) Train B (ORE-PR033B/34B)	1	22	A11 A11	$\leq 2 mR/h$ $\leq 2 mR/h$	27

BYRON - UNITS 1 & 2

3/4 3-40

TABLE NOTATIONS

*With new fuel or irradiated fuel in the fuel storage areas or fuel building.

**Trip Setpoint is to be established such that the actual submersion dose rate would not exceed 10 mR/hr in the containment building. For containment purge or vent the Setpoint value may be increased up to twice the maximum concentration activity in the containment determined by the sample analysis performed prior to each release in accordance with Table 4.11-2 provided the value does not exceed 10% of the equivalent limits of Specification 3.11.2.1.8 in accordance with the methodology and parameters in the ODCM.

Trip setpoint may be raised temporarily maised during planned evolutions which <u>ACTION STATEMENTS</u> in the vicinity of the monitor.

ACTION 26 - With less than the Minimum Channels OPERABLE requirement, operation may continue provided the containment purge valves are maintained closed.

ACTION 27 With the number of OPERABLE channels less than the Minimum Channels OPERABLE requirement, within 1 hour switch to the redundant train of Control Room Ventilation, provided the redundant train meets the Minimum Channels OPERABLE requirement or isolate the Control Room Ventilation System and initiate operation of the Control Room Make-up System. Restore the inoperable monitors to OPERABLE status within 30 days or submit a Special Report to the Commission pursuant to Specification 6.9.2 within the following 30 days that provides the cause of the inoperability and the plans for restoration.

ACTION 28 - Must satisfy the ACTION requirement for Specification 3.4.6.1.

- With the number of OPERABLE channels one less than the Minimum ACTION 29 Channels OPERABLE requirement, ACTION a. of Specification 3.9.12 must be satisfied. With both channels inoperable, provide an appropriate portable continuous monitor with the same Alarm Setpoint in the fuel pool area with one Fuel Handling Building Exhaust filter plenum in operation. Otherwise satisfy ACTION b. of Specification 3.9.12.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

LIQUID HOLDUP TANKS

LIMITING CONDITION FOR OPERATION

3.11.1.1 Deleted 3.11.1.2 Deleted 3.11.1.3 Deleted

3.11.1.4 The quantity of radioactive material, excluding tritium and dissolved or entrained noble gases, contained in any outside tanks shall be limited to the following: less than or equal to 10 Curres.

unprotected

a. Primary Water Storage Tank < 2000 Curies, and

-b. Outside Temporary Tank < 10 Curies.

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 Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each of the above 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 to the tank.

RADIOACTIVE EFFLUENTS

GAS DECAY TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas decay tank shall be limited to less than or equal to 5×10^4 Curies of noble gases (considered as Xe-133 equivalent).

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in any gas decay 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 Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas decay tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank.

3/4.11 RADIOACTIVE EFFLUENTS

BASES

3/4.11.1 LIQUID EFFLUENTS

3/4.11.1.1 DELETED

3/4.11.1.2 DELETED

3/4.11.1.3 DELETED

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 N, Column 2, at the nearest potable water supply and the nearest surface water supply in an UNRESTRICTED AREA.

BYRON - UNITS 1 & 2 B 3/4 11-1

RADIOACTIVE EFFLUENTS

BASES

3/4.11.2 GASEDUS EFFLUENTS

3/4.11.2.1 DELETED

3/4.11.2.2 DELETED

3/4.11.2.3 DELETED

3/4.11.2.4 DELETED

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, automatic diversion to recombiners, or injection of dilutants to reduce the concentration below the flammability limits. 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 DECAY 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 tanks' 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.

5.0 DESIGN FEATURES

5.1 SITE

EXCLUSION AREA

5.1.1 The Exclusion Area shall be as shown in Figure 5.1-1. DELETED

LOW POPULATION ZONE

5.1.2 The Low Population Zone shall be as shown in Figure 5.1-2.

MAP DEFINING UNRESTRICTED AREAS AND SITE BOUNDARY FOR RADIOACTIVE GASEOUS AND LIQUID EFFLUENTS

5.1.3 Information regarding radioactive gaseous and liquid effluents, which will allow identification of structures and release points as well as definition of UNRESTRICTED AREAS within the SITE BOUNDARY that are accessible to MEMBERS OF THE PUBLIC, shall be as shown in Figure 5.1-1. The definition of UNRESTRICTED AREA used in implementing these Technical Specifications has been expanded over that in 10 CFR 20.3 (a)(17). The UNRESTRICTED AREA boundary may coincide with the Exclusion (fenced) Area boundary, as defined in 10 CFR 100.3(a), but the UNRESTRICTED AREA does not include areas over water bodies. The concept of UNRESTRICTED AREAS, established at or beyond the SITE BOUNDARY, is utilized in the Limiting Conditions for Operation to keep levels of radioactive materials in liquid and gaseous effluents as low as is reasonably achievable, pursuant to 10 CFR 50.36a. For the Byron Station, the Exclusion Area and UNRESTRICTED AREA boundaries are the same. Shall be located in the Offsite Dose Calculation Manual.

5.2 CONTAINMENT

CONFIGURATION

5.2.1 The containment building is a steel lined, reinforced concrete building of cylindrical shape, with a dome roof and having the following design features:

- a. Nominal inside diameter = 140 feet,
- Nominal inside height = 222 feet,
- c. Nominal thickness of concrete walls = 3.5 feet,
- d. Nominal thickness of concrete dome = 3 feet,
- e. Nominal thickness of concrete base slab = 12 feet,
- Nominal thickness of steel liner = 0.25 inch, and
- q. Net free volume = 2.8 x 10⁶ cubic feet.

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The containment building is designed and shall be maintained for a maximum internal pressure of 50 psig and a temperature of 250°F.

BYRON - UNITS 1 & 2



DESIGN FEATURES

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4, except that limited substitution of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel or by vacancies may be made if justified by a cycle specific reload analysis. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of less than 3.20 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading. The enrichment of any reload fuel design shall be determined to be acceptable for storage in either the spent fuel pool or the new fuel vault. Such acceptance criteria shall be based on the results of the CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS.

CONTROL ROD ASSEMBLIES

5.3.2 The core shall contain 53 full-length and no part-length control rod assemblies. The full-length control rod assemblies shall contain a nominal 142 inches of absorber material. All control rods shall be hafnium, silver-indium-cadmium, or a mixture of both types. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The Reactor Coolant System is designed and shall be maintained:

- a. In accordance with the Code requirements specified in Section 5.2 of theUFSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements.
- b. For a pressure of 2485 psig, and
- c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the Reactor Coolant System is 12,257 cubic feet at a nominal $T_{\rm ave}$ of 588.4°F.

DELETED

5.5 METEOROLOGICAL TOWER LOCATION

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.

BYRON - UNITS 1 & 2

PROCEDURES AND PROGRAMS (Continued)

- Identification of the procedures used to measure the values of the critical variables,
- Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,
- 4) Procedures for the recording and management of data.
- Procedures defining corrective action for all off-control point chemistry conditions, and
- 6) A procedure identifying: (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective action.

d. Post-accident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere samples under accident conditions. The program shall include the following:

- 1) Training of personnel,
- 2) Procedures for sampling and analysis, and
- 3) Provisions for maintenance of sampling and analysis equipment.
- e. 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 station procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 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.
- Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table NJ, Column 2,
- 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,

PROCEDURES AND PROGRAMS (Continued)

- 4) Limitations on the annual and quarterly doses or dosecommitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,
- 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,
- 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 20, Appendix B, Table II. Column 1, a MEMBER OF THE PUBLIC.
- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit 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 from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 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.
- f. 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:

 Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM.

BYRON - UNITS 1 & 2

PROCEDURES AND PROGRAMS (Continued)

- 2) A Land Use Census to ensure that changes in the use of areas et 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
- 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 Final Safety Analysis Report 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.

OPERATING

ANNUAL & REPORTS

6.9.1.4 Deleted

6.9.1.45 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.

The reports shall include: 1, as described in this section,

REPORTING REQUIREMENTS (Continued)

-6.9.1.5 Reports required on an annual basis shall include:

- Tabulation on an annual basis of the number of station, utility, and а. other personnel (including contractors) receiving exposures greater DEEP DOSE than 100 mrems/yr, and their associated man=rem exposure according to EQUIVALENT 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 DEEF DOSE EQUIVALENT from external sources should be assigned to specific major work functions.
 - The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following b. 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.

-*This tabulation supplements the requirements of \$20.407 of 10 CFR Part 20.

REPORTING REQUIREMENTS (Continued)

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 prior to 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** Calendar year

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 prior 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.

MONTHLY OPERATING REPORT

to April 1.

6.9.1.8 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the 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 Regional Administrator of the NRC Regional Office, no later than the 15th of each month following the calendar month covered by the report.

OPERATING LIMITS REPORT

6.9.1.9 Operating limits shall be established and documented in the OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle. The analytical methods used to determine the operating limits shall be those previously reviewed and approved by the NRC in Topical Reports: 1) WCAP 9272-P-A "Westinghouse Reload Safety Evaluations Methodology" dated July 1985, 2) WCAP-8385 "Power Distribution Control and Load Following Procedures" dated September 1974, 3) NFSR-0016 "Benchmark of PWR Nuclear Design Methods" dated July 1983, and/or 4) NFSR-0081 "Benchmark of PWR Nuclear Design Methods Using the PHOENIX-P and ANC Computer Codes" dated July 1990. The operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met. The OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

"A single submittal may be made for a multi-unit station.

**A single submittal may be made for a multi-unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

BYRON - UNITS 1 & 2

RECORD RETENTION (Continued)

radiologically posted

- Records of radiation exposure for all individuals entering radiation control areas;
- Records of gaseous and liquid radioactive material released to the environs;
- Records of transient or operational cycles for those unit components identified in Table 5.7-1;
- f. Records of reactor tests and experiments;
- Records of training and qualification for current members of the unit staff;
- Records of in-service inspections performed pursuant to these Technical Specifications;
- i. Records of Quality Assurance activities required by the QA Program:
- Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59;
- Records of meetings and results of reviews and audits performed by the Offsite Review and Investigative Function and the Onsite Review and Investigative Function;
- 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
- Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and 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.

PADIATION

AREA

6.12 HIGH RADIATION AREA

1601 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), each high High pradiation area, as defined in 10 CFR Part 20, in which the intensity of radia- dose rate tion is equal to or less than 1000 mR/hr at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be barricaded 30 cm (Ria)) 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 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 anovided with or accompanied by one or more of the following:

(1601(a))

- A radiation monitoring device which continuously indicates the 8. radiation dose rate in the area; or
- A radiation monitoring device which continuously integrates the b. radiation dose rate in the area and alarms when a preset 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
- An individual qualified in radiation protection procedures with a C. radiation dose rate monitoring device, who is responsible for providing positive control over the activities within the area and who shall perform periodic radiation surveillance at the frequency specified in the Radiation Work Permit.

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 Foreman 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 dost 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. During emergency situations which involve personnel injury or actions taken to prevent major equipment damage, continuous surveillance and radiation monitoring of the work area by a qualified individual may be substituted for the routine RWP procedure.

Replace with Jusert "c

Insert "C"

6.12.2 In addition to the requirements of Specification 6.12.1, areas accessible to personnel with radiation levels greater than 1000 mrem/h at 30 cm (12 in.) from the radiation source or from any surface which the radiation penetrates shall require the following:

- a. Doors shall be locked to prevent unauthorized entry. The keys shall be maintained under the administrative control of the Shift Supervisor on duty and/or health physics supervision.
- b. Personnel access and exposure control requirements of activities being performed within these areas shall be specified by an approved RWP.
- c. Each person entering the area shall be provided with an alarming radiation monitoring device that continuously integrates the radiation dose rate (such as an electronic dosimeter). Surveillance and radiation monitoring by a radiation protection technician may be substituted for an alarming dosimeter.
- d. During emergency situations which involve personnel injury or actions taken to prevent major equipment damage, surveillance and radiation monitoring of the work area by a qualified individual may be substituted for the routine RWP procedure.
- e. For individual high radiation areas accessible to personnel with radiation levels of greater than 1000 mrem/h at 30 cm (12 in.) that are located within large areas where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual areas, then such individual areas shall be barricaded (by an object more substantial than rope), conspicuously posted, and a flashing light shall be activated as a warning device.

HIGH RADIATION AREA (Continued)

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 (by a more substantial obstacle than rope), conspicuously posted, and a flashing light shall be activated as a warning device.

6.13 PROCESS CONTROL PROGRAM (PCP)

- 6.13.1 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:
 - Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and,
 - 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.
 - b. Shall become effective after review and acceptance by the Onsite Review and Investigative Function (Onsite Review) and the approval of the Station Manager.

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 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:
 - 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 Onsite Review and Investigative Function and the approval of the Station Manager on the date specified by the Onsite Review and Investigative Function.

OFFSITE DOSE CALCULATION MANUAL (ODCM) (Continued)

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 effective. 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.

INDEX

-	 	-	-	(above)

Insert;

THATTANE

	SECT	ION	PAGE
	1.0	DEFINITIONS	
	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
sert:	1.6	CHANNEL CHECK	1-1
Sim	1.7	CONTAINMENT INTEGRITY	1-2
(1.1.4)	1.8	CONTROLLED LEAKAGE	1-2
	1.9	CORE ALTERATION	1-2
	1.9.4	CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL	
5.20		STORAGE RACKS.	1-2
(1.4.b)	1.10	DIGITAL CHANNEL OPERATIONAL TEST	1-20)
(1.10.a)	1.11	DOSE EQUIVALENT I-131	1-20)
	1.12	E-AVENAGE DISINTEGRATION ENERGY	1-3
	1.13	ENGINEERED SAFETY FEATURES RESPONSE TIME	1-3
	1.14	FREQUENCY NOTATION	1-3
1.14.0	1.15	IDENTIFIED LEAKAGE.	1-3
	1.16	MASTER RELAY TEST	1-3
	1.17	MEMBER(5) OF THE PUBLIC	1-3a)
	1.18	OFFSITE DOSE CALCULATION MANUAL	1-4
	1.19	OPERABLE - OPERABILITY	1-4
	1.19	a OPERATING LIMITS REPORT	1-4
	1.20	OPERATIONAL MODE - MODE	1-4
	1.21	PHYSICS TESTS	1-4
	1.22	PRESSURE BOUNDARY LEAKAGE	1-4
	1.23	PROCESS CONTROL PROGRAM	1-5
	1.24	PURGE - PURGING	1-5
	1.25	QUADRANT POWER TILT RATIO	1-5
	1.26	RATED THERMAL POWER	1-5
	1.27	REACTOR TRIF SYSTEM RESPONSE TIME	1-5
	1.28	REPORTABLE EVENT	1-5

AMENDMENT NO. 35

4444

444

14

Insert:

SECTION	PAGE
1.28. a RESTRICTED AREA	1-5
1.29 SHUTDOWN MARGIN	-1-6a
1.30 SITE BOUNDARY	1-6
1.31 SLAVE RELAY TEST	1-6
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 NOTATION	1-8
TABLE 1.2 OPERATIONAL MODES	1-9

BRAIDWOOD - UNITS 1 & 2 II

444

DESIGN FEATURES

SECTION 5.1 SITE 5.1.1 EXCLUSION AREA DELETED 5.1.2 LOW POPULATION ZONE 5.1.3 MAP DEFINING UNRESTRICTED AREAS, AND SITE BOUNDARY FOR RADIOACTIVE GASEOUS AND LIQUID EFFLUENTS..... FIGURE 5.1-1 EXCLUSION AREA AND UNRESTRICTED AREA FOR RADIOACTIVE GASEOUS AND LIQUID EFFLUENTS FIGURE 5.1-2 LOW POPULATION ZONE 5.2 CONTAINMENT 5.2.1 CONFIGURATION. 5.2.2 DESIGN PRESSURE AND TEMPERATURE..... 5.3 REACTOR CORE 5.3.1 FUEL ASSEMBLIES..... 5.3.2 CONTROL ROD ASSEMBLIES..... 5.4 REACTOR COOLANT SYSTEM 5.4.1 DESIGN PRESSURE AND TEMPERATURE..... 5.4.2 VOLUME..... 5.5 METEOROLOGICAL TOWER LOCATION 5.6 FUEL STORAGE 5.6.1 CRITICALITY 5.6.2 DRAINAGE..... 5.6.3 CAENTTY 5.7 COMPONENT CYCLIC OR TRANSIENT LIMIT.....

TABLE 5.7-1 COMPONENT CYCLIC OR TRANSIENT LIMITS.....

BRAIDWOOD - UNITS 1 & 2 XVIII

AMENDMENT NO. 35

PAGE

5-1

5-1

5-1

5-2

5-3

5-1

5-1

5-4

5-4

5-4

5-4

5-4

5-5

5-5

5-5

5-5

5-6

SECTION	PAGE
6.7 SAFETY LIMIT VIOLATION	····· 6+15
6.8 PROCEDURES AND PROGRAMS	6~16
6.9 REPORTING REQUIREMENTS	6-20
6.9.1 ROUTINE REPORTS	6-20
Startup Report	6-20
Annual Reports	6-20
Annual Radiological Environmental Operating Report	6-22
Semiannual Radioactive Effluent Release Report	6-22
Monthly Operating Report	6-22
Operating Limits Report	6-22
Criticality Analysis of Byron and Braidwood	
Station Fuel Storage Racks	6-23
6.9.2 SPECIAL REPORTS	6-23
6.10 RECORD RETENTION	6-23
6.11 RADIATION PROTECTION PROGRAM	6-24
6.12 HIGH RADIATION AREA	6-25
6.13 PROCESS CONTROL PROGRAM (PCP)	6-26
6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)	6-26

CONTAINMENT INTEGRITY

1.7 CONTAINMENT INTEGRITY shall exist when:

- All penetrations required to be closed during accident conditions a. are either:
 - 1) Capable of being closed by an OPERABLE containment automatic isolation valve system, or
 - Closed by manual valves, blind flanges, or deactivated automatic 2) valves secured in their closed positions, except as provided in Table 3.6-1 of Specification 3.6.3.

The containment leakage rates are within the limits of Specification

- All equipment hatches are closed and sealed, b.
- C. Each air lock is in compliance with the requirements of Specification 3.6.1.3.

Ingert

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page

1-20

CONTROLLED AREA !

The sealing mechanism associated with each penetration (e.g., welds, е. bellows, or O-rings) is OPERABLE. definition 1.7.a

CONTROLLED LEAKAGE

3.6.1.2, and

d.

1.8 CONTROLLED LEAKAGE shall be that seal water flow supplied to the reactor coolant pump seals.

CORE ALTERATION

1.9 CORE ALTERATION shall be the movement or manipulation of any component within the reactor vessel with the vessel head removed and fuel in the vessel. Suspension of CORE ALTERATION shall not preclude completion of movement of a component to a safe conservative position.

CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS

1.9a The CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS, is a document that provides the maximum allowable fuel enrichment for storage. These limits shall be determined and submitted in accordance with Specification 6.9.1.10. Plant operation within these limits is addressed in Insert been pose a precifications

DIGITAL CHANNEL OPERATIONAL TEST

1.10 A DIGITAL CHANNEL OPERATIONAL TEST shall consist of exercising the digital computer hardware using data base manipulation and injecting simulated process data to verify OPERABILITY of alarm and/or trip functions. Insert? DOSE EQUIVALENT definition 1.10a

DOSE EQUIVALENT I-131

1.11 DOSE EQUIVALENT I-131 shall be that concentration of I-131 (microCurie/gram) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134, and I-135 actually present. The thyroid dose conversion factors used for this calculation shall be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites."

BRAIDWOOD UNITS 1 & 2

Insert DEEP DOSE EQUIVALENT 1.9.b DEEP DOSE EQUIVALENT, which applies to external whole-body exposure, shall be the DOSE EQUIVALENT at a tissue depth of 1 cm Moved from (1000 mg/cm^2) . Piage 1-2, DIGITAL CHANNEL OPERATIONAL TEST 1.10 A DIGITAL CHANNEL OPERATIONAL TEST shall Insert DOSE EQUIVALENT 1.10.a DOSE EQUIVALENT shall be the product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. The unit of DOSE EQUIVALENT is the rem. DOSE EQUIVALENT I-131 1.11 DOSE EQUIVALENT I-131 shall....

Insert on page 1-2 before CONTROLLED LEAKAGE

CONTROLLED AREA

1.7.a The CONTROLLED AREA shall be an area, outside of a RESTRICTED AREA but inside the SITE BOUNDARY, access to which can be limited by the licensee for any reason.

New overflow page 1 - 2a

AMENDMENT NO.

Moved from page 1-3

MEMBER OF THE PUBLIC

1.17 A MEMBER OF THE PUBLIC shall be an individual in a CONTROLLED or UNRESTRICTED AREA. An individual is not a MEMBER OF THE PUBLIC during any period in which the individual receives an occupational dose.

Insert on page 1-3 before IDENTIFIED LEAKAGE

HIGH RADIATION AREA

1.14.a A HIGH RADIATION AREA shall be an area, accessible to individuals, in which radiation levels could result in an individual receiving a DOSE EQUIVALENT in excess of 100 mrem in one hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

New overflow Page 1-3a

AMENDMENT NO.

E - AVERAGE DISINTEGRATION ENERGY

1.12 E shall be the average (weighted in proportion to the concentration of each radionuclide in the sample) of the sum of the average beta and gamma energies per disintegration (MeV/d) for the radionuclides in the sample.

ENGINEERED SAFETY FEATURES RESPONSE TIME

1.13 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

1.14 The FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.1. HIGH RADIATION AREA definition 1.14-a

IDENTIFIED LEAKAGE

(Insert)

1.15 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
- Reactor Coolant System leakage through a steam generator to the Secondary Coolant System.

MASTER RELAY TEST

1.16 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 move revised definition to new overflow page 1-3a

1.17 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 and 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.

BRAIDWOOD UNITS 1 & 2

OFFSITE DOSE CALCULATION MANUAL

1.18 The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from 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 Sections 6.8.4.e and f, and (2) descriptions of the information that should be included in the Annual Radiological Environmental Operating and Semiannual Radioactive Effluent Release Reports required by Specification 6.9.1.6 and 6.9.1.7.

OPERABLE - OPERABILITY

1.19 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 relates support function(s).

OPERATING LIMITS REPORT

1.19.a The OPERATING LIMITS REPORT is the unit-specific document that provides operating limits for the current operating reload cycle. These cycle-specific operating limits shall be determined for each reload cycle in accordance with Specification 6.9.1.9. Plant Operation within these operating limits is addressed in individual specifications.

OPERATIONAL MODE - MODE

1.20 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

1.21 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, (2) authorized under the provisions of 10 CFR 50.59, or (3) otherwise approved by the Commission.

PRESSURE BOUNDARY LEAKAGE

1.22 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

1.23 The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that 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, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

PURGE - PURGING

1.24 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.

QUADRANT POWER TILT RATIO

1.25 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

1.26 RATED THERMAL POWER shall be a total core heat transfer rate to the reactor coolant of 3411 MWt.

REACTOR TRIP SYSTEM RESPONSE TIME

1.27 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

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

RESTRICTED AREA definition 1.28.a.

SHUTDOWN MARGIN

Insert

overflow page 1-5a

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.

Moved

from page 1-5 SHUTDOWN MARGIN 1.29 SHUTDOWN MARGIN shall....

Insert on page 1-5 before SHUTDOWN MARGIN

RESTRICTED AREA

1.28.a A RESTRICTED AREA shall be an area, access to which is limited by the licensee for the purpose of protecting individuals against undue risks from exposure to radiation and radioactive materials. RESTRICTED AREAS do not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a RESTRICTED AREA.

New overflow Fage 1-5a

AMENDMENT NO.

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.

SOLIDIFICATION

1.32 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 test schedule for 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.

BRAIDWOOD UNITS 1 & 2

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RADIATION MONITORING INSTRUMENTATION FOR PLANT OPERATIONS

FUN	CTIONAL UNIT	CHANNELS TO TRIP/ALARM	MINIMUM CHANNELS OPERABLE	APPLICABLE MODES	ALARM/TRIP SETPOINT	ACTION
1.	Fuel Building Isolation- Radioactivity-High and Criticality (ORE-AR055/56)	1	2	*	<5 mR/h **	29
2.	Containment Isolation- Containment Radioactivity- High a) Unit 1 (1RE-AR011/12) b) Unit 2 (2RE-AR011/12)	1	2	A11 A11	AR ±100 mR/h ** AR ±100 mR/h **	26 26
 з.	Gaseous Radioactivity- RCS Leakage Detection a) Unit 1 (1RE-PR011B) b) Unit 2 (2RE-PR011B)	N.A. N.A.	1	1, 2, 3, 4 1, 2, 3, 4	N. A. N. A.	28 28
4.	Particulate Radioactivity- RCS Leakage Detection a) Unit 1 (1RE-PR011A) b) Unit 2 (2RE-PR011A)	N.A. N.A.	1	1, 2, 3, 4 1, 2, 3, 4	N. A. N. A.	28 28
5.	Main Control Room Isolation- Outside Air Intake-Gaseous Radioactivity-High a) Train A (ORE-PR031B/32B) b) Train B (ORE-PR033B/34B)	1	2	A11 A11	< 2 mR/h ⋜ 2 mR/h	27 27

BRAIDWOOD - UNITS 1 & 2

3/4 3-40

TABLE NOTATIONS

"With new fuel or irradiated fuel in the fuel storage areas or fuel building.

**Trip Setpoint is to be established such that the actual submersion dose rate would not exceed 10 mR/hr in the containment building. For containment purge or vent the Setpoint value may be increased up to twice the maximum concentration activity in the containment determined by the sample analysis performed prior to each release in accordance with Table 4.11-2 provided the value does not exceed 10% of the equivalent limits of Specification 3.11.2.1.a in accordance with the methodology and parameters in the ODCM.

** This setpoint may be temporarily raised during planned evolutions which elevate the ambient background in the vicinity of the monitor.

ACTION STATEMENTS

- ACTION 26 With less than the Minimum Channels OPERABLE requirement, operation may continue provided the containment purge valves are maintained closed.
- ACTION 27 With the number of OPERABLE channels less than the Minimum Channels OPERABLE requirement, within 1 hour switch to the redundant train of Control Room Ventilation, provided the redundant train meets the Minimum Channels OPERABLE requirement or isolate the Control Room Ventilation System and initiate operation of the Control Room Make-up System. Restore the inoperable monitors to OPERABLE status within 30 days or submit a Special Report to the Commission pursuant to Specification 6.9.2 within the following 30 days that provides the cause of the inoperability and the plans for restoration.
- ACTION 28 Must satisfy the ACTION requirement for Specification 3.4.6.1.
- ACTION 29 With the number of OPERABLE channels one less than the Minimum Channels OPERABLE requirement, ACTION a. of Specification 3.9.12 must be satisfied. With both channels inoperable, provide an appropriate portable continuous monitor with the same Alarm Setpoint in the fuel pool area with one Fuel Handling Building Exhaust filter plenum in operation. Otherwise satisfy ACTION b. of Specification 3.9.12.

BRAIDWOOD - UNITS 1 & 2

3/4 3-41

AMENDMENT NO. 37

D.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

LIQUID HOLDUP TANKS

LIMITING CONDITION FOR OPERATION

3.11.1.1 Deleted 3.11.1.2 Deleted 3.11.1.3 Deleted

3.11.1.4 The quantity of radioactive material, excluding tritium and dissolved or entrained noble gases, contained in any outside tanks shall be limited to the following: less than or equal to 10 curies.

unprotected)

a. Primary Water Storage Tank < 2000 Curies, and

b. Outside Temporary Tank < 10 Curies.

APPLICABILITY: At all times.

ACTION:

- With the quantity of radioactive material in any of the above listed а. 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.
- The provisions of Specification 3.0.3 are not applicable. b.

SURVEILLANCE REQUIREMENTS

4.11.1.4 The quantity of radioactive material contained in each of the above 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 to the tank.

RADIOACTIVE EFFLUENTS

GAS DECAY TANKS

LIMITING CONDITION FOR OPERATION

3.11.2.6 The quantity of radioactivity contained in each gas decay tank shall be limited to less than or equal to 5×10^4 Curies of noble gases (considered as Xe-133 equivalent).

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in any gas decay 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 Specification 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.6 The quantity of radioactive material contained in each gas decay tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank.

3/4.11 RADIOACTIVE EFFLUENTS

- BASES

3/4.11.1 LIQUID EFFLUENTS

3/4.11.1.1 DELETED

3/4.11.1.2 DELETED

3/4.11.1.3 DELETED

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.

BRAIDWOOD - UNITS 1 & 2 B 3/4 11-1

3/4.11 RADIOACTIVE EFFLUENTS

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3/4.11.2 GASEOUS EFFLUENTS

3/4.11.2.1 DELETED

3/4.11.2.2 DELETED

3/4.11.2.3 DELETED

3/4.11.2.4 DELETED

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, automatic diversion to recombiners, or injection of dilutants to reduce the concentration below the flammability limits. 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 DECAY 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.

P tricting the quantity of radioactivity contained in each gas storage tank p.ovides assurance that in the event of an uncontrolled release of the tanks' 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.

BRAIDWOOD - UNITS 1 & 2

B 3/4 11-2

5.0 DESIGN FEATURES

5.1 SITE

EXCLUSION AREA

5.1.1 The Exclusion Area shall be as shown in Figure 5.1-1. DELETED

LOW POPULATION ZONE

5.1.2 The Low Population Zone shall be as shown in Figure 5.1-2.

MAP DEFINING UNRESTRICTED AREAS, AND SITE BOUNDARY FOR RADIOACTIVE GASEOUS AND

5.1.3 Information regarding radioactive gaseous and liquid effluents, which will allow identification of structures and release points as well as definition of UNRESTRICTED AREAS within the SITE BOUNDARY that are accessible to MEMBERS OF THE PUBLIC, shall be as shown in Figure 5.1-1. The definition of UNRESTRICTED AREA used in implementing these Technical Specifications has been expanded over that in 10 CFR 20.3 (a)(17). The UNRESTRICTED AREA boundary may coincide with the Exclusion (fenced) Area boundary, as defined in 10 CFR 100.3(a), but the UNRESTRICTED AREA does not include areas over water bodies. The concept of UNRESTRICTED AREAS, established at or beyond the SITE BOUNDARY, is utilized in the Limiting Conditions for Operation to keep levels of radioactive materials in liquid and gaseous effluents as low as is reasonably achievable, pursuant to 10 CFR 50.36a. For the Braidwood Station, the Exclusion Area lies within the-UNRESTRICTED AREA boundary. shall be located in the Offsite base Calculation Manual.

5.2 CONTAINMENT

CONFIGURATION

5.2.1 The containment building is a steel lined, reinforced concrete building of cylindrical shape, with a dome roof and having the following design features:

- Nominal inside diameter = 140 feet.
- b. Nominal inside height = 222 feet,
- c. Nominal thickness of concrete walls = 3.5 feet.
- d. Nominal thickness of concrete dome = 3 feet.
- e. Nominal thickness of concrete base slab = 12 feet.
- f. Nominal thickness of steel liner = 0.25 inch, and
- g. Net free volume = 2.8 x 10⁶ cubic feet.

DESIGN PRESSURE AND TEMPERATURE

5.2.2 The containment building is designed and shall be maintained for a maximum internal pressure of 50 psig and a temperature of 250°F.



FIGURE 5.1-1

-EXCLUSION AREA AND UNRESTRICTED AREA FOR RADIOACTIVE LIQUID EFFLUENTS (THIS FIGURE NOT USED)

DESIGN FEATURES

5.3 REACTOR CORE

FUEL ASSEMBLIES

5.3.1 The core shall contain 193 fuel assemblies with each fuel assembly containing 264 fuel rods clad with Zircaloy-4, except that limited substitution of fuel rods by filler rods consisting of Zircaloy-4 or stainless steel or by vacancies may be made if justified by a cycle specific reload analysis. Each fuel rod shall have a nominal active fuel length of 144 inches. The initial core loading shall have a maximum enrichment of less than 3.20 weight percent U-235. Reload fuel shall be similar in physical design to the initial core loading. The enrichment of any reload fuel design shall be determined to be acceptable for storage in either the spent fuel pool or the new fuel vault. Such acceptance criteria shall be based on the results of the CRITICALITY ANALYSIS OF BYRON AND BRAIDWOOD STATION FUEL STORAGE RACKS.

CONTROL ROD ASSEMBLIES

5.3.2 The core shall contain 53 full-length and no part-length control rod assemblies. The full-length control rod assemblies shall contain a nominal 142 inches of absorber material. All control rods shall be hafnium, silver-indium-cadmium, or a mixture of both types. All control rods shall be clad with stainless steel tubing.

5.4 REACTOR COOLANT SYSTEM

DESIGN PRESSURE AND TEMPERATURE

5.4.1 The Reactor Coolant System is designed and shall be maintained:

- a. In accordance with the Code requirements specified in Section 5.2 of the FSAR, with allowance for normal degradation pursuant to the applicable Surveillance Requirements.
- b. For a pressure of 2485 psig, and
- c. For a temperature of 650°F, except for the pressurizer which is 680°F.

VOLUME

5.4.2 The total water and steam volume of the Reactor Coolant System is 12,257 cubic feet at a nominal $T_{\rm avg}$ of 588.4°F.

5.5 METEOROLOGICAL TOWER LOCATION DELETED

5.5.1 The meteorological tower shall be located as shown on Figure 5.1-1.

Amendment No. 19

PROCEDURES AND PROGRAMS (Continued)

- Identification of the procedures used to measure the values of the critical variables,
- Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in-leakage,
- .) Frocedures for the recording and management of data.
- frocedures defining corrective action for all off-control point hemistry conditions, and
- 6) a procedure idencifying: (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective action.

d. Post-accident Sampling

A program which will ensure the capability to obtain and analyze reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and conta and it atmosphere samples under accident conditions. The program shall include the following:

- 1) Training of personnel,
- 2) Procedures for sampling and analysis, and
- 3) Provisions for maintenance of sampling and analysis equipment.

e. 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 station procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 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.
- Limitations on the concentration; of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table 11, Column 2,
- 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.

BRAIDWOOD - UNITS 1 & 2

PROCEDURES AND PROGRAMS (Continued)

- 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit 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,
- 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 20, Appendix B, Table II, Column 1, a MEMBER OF THE PUBLIC,
- Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit 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 from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 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.

f. 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:

 Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM.

BRAIDWOOD - UNITS 1 & 2

PROCEDURES AND PROGRAMS (Continued)

- 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
- 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 Final Safety Analysis Report 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^AREPORTS

6.9.1.4 DELETED

6.9.1.4⁵ 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. As described in this section,

The report shall include:

DEEP DOSE

DEEP DOSE

EGUIVALENT

REPORTING REQUIREMENTS (Continued)

6.9.1.5 Reports required on an annual basis shall include:

Tabulation on an annual basis of the number of station, utility, and а. other personnel (including contractors) redeiving exposures greater than 100 mrems/yr, and their associated man-rem exposure according to EUNIVALENT 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.

person-rem

b. 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.

*This tabulation supplements the requirements of \$20,407 of 10 CFR Part 20.

REPORTING REQUIREMENTS (Continued)

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 prior to 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 prior to April 1 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.

MONTHLY OPERATING REPORT

6.9.1.8 Routine reports of operating statistics and shutdown experience, including documentation of all challenges to the 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 Regional Administrator of the NRC Regional Office, no later than the 15th of each month following the calendar month covered by the report.

OPERATING LIMITS REPORT

6.9.1.9 Operating limits shall be established and documented in the OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle. The analytical methods used to determine the operating limits shall be those previously reviewed and approved by the NRC in Topical Reports: 1) WCAP 9272-P-A "Westinghouse Reload Safety Evaluations Methodology" dated July 1985, 2) WCAP-8385 "Power Distribution Control and Load Following Procedures" dated September 1974, 3) NFSR-0016 "Benchmark of PWR Nuclear Design Methods" dated July 1983, and/or 4) NFSR-0081 "Benchmark of PWR Nuclear Design Methods Using the PHOENIX-P and ANC Computer Codes" dated July 1990. The operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met. The OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

*A single submittal may be made for a multi-unit station.

**A single submittal may be made for a multi-unit station. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

RECORD RETENTION (Continued)

- c. Records of radiation exposure for all individuals entering radiation posted control areas;
- 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 5.7-1;
- f. Records of reactor tests and experiments;
- Records of training and qualification for current members of the unit staff;
- Records of in-service inspections performed pursuant to these Technical Specifications;
- i. Records of Quality Assurance activities required by the QA Program;
- Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59;
- Records of meetings and results of reviews and audits performed by the Offsite Review and Investigative Function and the Onsite Review and Investigative Function;
- 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
- Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and 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.

BRAIDWOOD - UNITS 1 & 2

6.12 HIGH RADIATION AREA

6.12.1 Pursuant to Paragraph 20.203(c)(5) of 10 CFR Part 20, in lieu of the RADIATION "control device" or "alarm signal" required by paragraph 20.203(c), each high HIGH " radiation area, as defined in 10 CFR Part 20, in which the intensity of radia" dose rate AREA tion is equal to or less than 1000, mR/hr at 45 cm (18 in.) from the radiation source or from any surface which the radiation penetrates shall be barricaded mremily at 30 cm (n in.)) 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 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:

1601(0)

- A radiation monitoring device which continuously indicates the radiation dose rate in the area; or
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset 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 in the Radiation Work Permit.

This section rewritten and reformatted. See insert page after page 6-26. 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 Foreman 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. During emergency situations which involve personnel injury or actions taken to prevent major equipment damage, continuous surveillance and radiation monitoring of the work area by a qualified individual may be substituted for the routine RWP procedure.

BRAIDWOOD - UNITS 1 & 2

6-25

HIGH RADIATION AREA (Continued)

This section rewritten and reformatted. See following insert Page. 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 (by a more substantial obstacle than rope), conspicuously posted, and a flashing light shall be activated as a warning device.

6.13 PROCESS CONTROL PROGRAM (PCP)

6.13.1 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:
 - Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and,
 - 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.
- b. Shall become effective after review and acceptance by the Onsite Review and Investigative Function (Onsite Review) and the approval of the Station Manager.

6.14 OFFSITE DOSE CALCULATION MANUAL (ODCM)

6.14.1 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:
 - 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 Onsite Review and Investigative Function and the approval of the Station Manager on the date specified by the Onsite Review and Investigative Function.

Insert in place of 6.12.2

6.12.2 In addition to the requirements of Specification 6.12.1, areas accessible to personnel with radiation levels greater than 1000 mrem/hr at 30 cm (12 in.) from the radiation source or from any surface which the radiation penetrates shall require the following:

- a. Doors shall be locked to prevent unauthorized entry. The keys shall be maintained under the administrative control of the Shift Supervisor on duty and/or health physics supervision.
- b. Personnel access and exposure control requirements of activities being performed within these areas shall be specified by an approved RWP.
- c. Each person entering the area shall be provided with an alarming radiation monitoring device that continuously integrates the radiation dose rate (such as an electronic dosimeter). Surveillance and radiation monitoring by a radiation protection technician may be substituted for an alarming dosimeter.
- d. During emergency situations which involve personnel injury or actions taken to prevent major equipment damage, surveillance and radiation monitoring of the work area by a qualified individual may be substituted for the routine RWP procedure.
- e. For individual high radiation areas accessible to personnel with radiation levels of greater than 1000 mrem/hr at 30 cm (12 in.) that are located within large areas where no enclosure exists for purposes of locking, and where no enclosure can be reasonably constructed around the individual areas, then such individual areas shall be barricaded (by an obstacle more substantial than rope), conspicuously posted, and a flashing light shall be activated as a warning device.

OFFSITE DOSE CALCULATION MANUAL (ODCM) (Continued)

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 effective. 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.

ATTACHMENT C

EVALUATION OF SIGNIFICANT HAZARDS CONSIDERATIONS

Commonwealth Edison has evaluated this proposed amendment and determined that it involves no significant hazards considerations. According to 10CFR50.92(c), a proposed amendment to an operating license involves no significant hazards if operation of the facility in accordance with the proposed amendment would not:

- 1. Involve a significant increase in the probability or consequences of an accident previously evaluated; or
- 2. Create the possibility of a new or different kind of accident from any accident previously evaluated; or
- 3. Involve a significant reduction in a margin of safety.

The proposed amendment makes several changes to Byron Station's and Braidwood Station's Technical Specifications. These changes are: (1) adding definitions for controlled area, deep dose equivalent, dose equivalent, high radiation area, and restricted area; revising definitions for member of the public and unrestricted area; (2) reducing the curie content limit of the primary water storage tank and updating the radioactive effluent holdup tank limit reference; (3) relocating certain information in Section 5; (4) revising high radiation area controls; (5) extending the Radioactive Effluent Release Report submittal frequency from semiannual to annual; and (6) revising radiation monitoring instrumentation requirements; and (7) editorial changes.

A. The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed changes to the definitions, radioactive effluent holdup tank limits and location of previous 10CFR20 requirements do not impact previously evaluated accidents because there is no change in the types and amounts of effluents that will be released. There will be no increase in individual or cumulative occupational radiation exposures. The proposed changes to the high radiation area controls provide more controls for enhanced exposure monitoring; they do not change the effluents or exposures.

Relocating information to the Offsite Dose Calculation Manual (ODCM) and the editorial changes are administrative in nature. The proposed changes do not reduce the requirements of any Technical Specification requirement. The changes provide consistency and improve readability. The information deleted from Section 5 is covered in more detail in the ODCM. Therefore, the level of control is maintained.

Changing the frequency of submitting the Radiological Effluent Release Report from semiannual to annual is consistent with the revised requirements of 10CFR50.36a. The change does not adversely impact the ability to meet applicable regulatory requirements related to liquid and gaseous effluents. The report is a historical record of station effluents and has no impact on the actual release process. The NRC will continue to receive the same information, only on a different, approved schedule.

The changes to the radiation monitor setpoints are consistent with the monitoring requirements of the applicable accident (fuel handling accident) described in Chapter 15 of the UFSAR. The setpoints and revised table note provide more specific requirements.

B. The proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

The changes in radiation monitoring instrumentation requirements are more specific. Calculations were performed to determine the appropriate setpoints based on the current plant design and operation. The changes provide better control over the instrumentation.

The remaining proposed changes have no effect on the probability of an accident. The changes are administrative in nature and do not affect plant design or operation. There is no change to the types and amounts of effluent that will be released, nor is there an increase in individual or cumulative occupational radiation exposures.

C. The proposed changes do not involve a significant reduction in a margin of safety.

Reducing the activity limit for the primary water storage tank from 2000 curies to 10 curies is conservative. The 10 curie limit, which would apply to all unprotected outside tanks is within the revised limits in 10CFR20. Compliance with the limits of 10CFR20.1301 (revised) will be demonstrated by operating within the limits of 10CFR50 Appendix I, and 40CFR190.

The proposed changes to the radiation monitoring instrumentation provide additional controls over the current requirements. The instrumentation continues to meet the requirements described in the bases. The bases themselves are unchanged.

The remaining changes are editorial and have no effect on the margin of safety for any Technical Specification.

Therefore, based on the above evaluation, Commonwealth Edison has concluded that these changes do not involve significant hazards considerations.

ATTACHMENT D

ENVIRONMENTAL ASSESSMENT

Commonwealth Edison has evaluated the proposed amendment against the criteria for and identification of licensing and regulatory actions requiring environmental assessment in accordance with 10CFR51.21. It has been determined that the proposed change meets the criteria for a categorical exclusion as provided for under 10CFR51.22(c)(9). This determination is based on the fact that this change is being proposed as an amendment to a license issued pursuant to 10CFR50 and the amendment meets the following specific criteria:

(i) the amendment involves no significant hazards considerations

As demonstrated in Attachment C, this proposed amendment does not involve any significant hazards considerations.

(ii) there is no significant change in the types or significant increase in the amounts of any effluents that may be released offsite

As documented in Attachment A, there will be no change in the types or significant increase in the amounts of any effluents released offsite.

(iii) there is no significant increase in individual or cumulative occupational radiation exposure

The proposed change will not result in c anges in the operation or configuration of the facility. There will be no change in the level of controls or methodology used for processing of radioactive effluents or handling of solid radioactive waste, nor will the proposal result in any change in the normal radiation levels within the plant. Therefore there will be no increase in individual or cumulative occupational radiation exposure resulting from this change.