PROPOSED REVISION TO

RETS

EFFLUENT TREATMENT

REQUIREMENTS

that the processing and packaging of solid radioactive waste will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, and all other Federal and State regulations governing the disposal of the radioactive waste.

2. Solidification

The conversion of liquid wastes into a form that meets shipping and burial ground requirements.

F. Source Check

A source check is an assessment of channel response when the channel detector is exposed to a source of increased radiation.

G. Unrestricted Area

An unrestricted area is any area at or beyond the site boundary where access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials.

H. Gaseous Radioactive Effluent Treatment System

The gaseous radioactive effluent treatment system consists of those components or devices utilized to reduce gaseous radioactive material in effluents. The system consists of the following:

a. gas decay tanks,
b. drumming area ventilation exhaust duct filter assembly,
c. Unit 1 and 2 containment purge exhaust filter assemblies,
d. air ejector decay duct filter assembly,
e. auxiliary building ventilation filter assembly (nominal 11,214 cfm exhaust pathway),
f. chemistry laboratory exhaust duct filter assembly,
g. service building ventilation exhaust duct filter assembly,
h. auxiliary building ventilation filter assemblies (nominal 34,150 cfm exhaust pathway)

I. Liquid Radioactive Effluent Treatment System

The liquid radioactive effluent treatment system consists of those components or devices utilized to reduce liquid radioactive material in effluents. The system consists of the following:

a. blowdown evaporator or waste evaporator,
b. polishing demineralizers,
c. boric acid evaporator feed demineralizers,
d. boric acid evaporators,
e. boric acid evaporator condensate demineralizers.

2. Quarterly limits are defined as one quarter (1/4) of the annual limits.

3. Compliance with these release limits will be demonstrated by periodic calculations utilizing either of the following methods:

   a. the calculation of doses based on actual releases; or

   b. the calculation and comparison of equivalent Curies released to equivalent Curie release limits, which would result in the above described dose limits, as described in the ODCM.

   The methodology for converting actual activity to equivalent activity is provided in the ODCM and is based upon dose conversion factors contained in Regulatory Guide 1.109, Revision 1, October 1977.

C. Radioactive Gaseous Effluent Concentrations

1. Alarm setpoints for the gaseous effluent monitors shall be determined and adjusted utilizing the methodologies and parameters given in the ODCM.

2. The gaseous effluent monitor setpoints are established to ensure that radioactive materials released shall not result in concentrations to unrestricted areas in excess of the values specified in 10 CFR 20, Appendix B, Table II.

3. During the release of radioactive gaseous effluents from the gas decay tanks through the auxiliary building vent, at least one auxiliary building exhaust fan shall be in operation.

D. Radioactive Gaseous Effluent Release Limits

1. The annual calculated total quantity of radioactive materials above background released from PBNP to the atmosphere shall not result in an unrestricted area estimated annual dose or dose commitment from all exposure pathways to any individual in excess of the following:

   a. 10 millirem to the total body or 30 millirem to the skin from gaseous effluents near ground level; and

4. If the calculations required by B.3 or D.3 of this specification demonstrate that quarterly releases exceed the quarterly limit, corrective actions shall be taken to ensure that subsequent releases in that calendar year will be in compliance with quarterly and annual limits.

G. Radioactive Effluent Treatment

1. The gaseous radioactive effluent treatment system shall be operated. If the gaseous effluent treatment system becomes inoperable, the effluent reporting requirements of section 15.7.5.F of this Specification shall apply. These provisions do not include the gas decay tanks, the auxiliary building ventilation exhaust charcoal filter, and the air ejector decay duct charcoal filter assembly.
   a. A gas decay tank(s) shall be operated whenever required to maintain gaseous releases within the limits of Specification 15.7.5.D.
   b. The auxiliary building ventilation exhaust charcoal filter shall be operated when required to maintain gaseous releases within the limits of Specification 15.7.5.D for radioiodines.
   c. The air ejector charcoal filter shall be operated when required to maintain releases within the limit of Specification 15.7.5.D for radioiodines.
2. The liquid radioactive effluent treatment system shall be operated. If the liquid radioactive effluent system becomes inoperable, the effluent reporting requirements of section 15.7.5.F of this Specification shall apply. These provisions do not include the processing of steam generator blowdown, the processing of liquid wastes collected in the waste holdup tank, the processing of secondary side sampling and turbine building wastes through the retention pond, and the processing of preplanned tank batch releases.
   a. Steam generator blowdown shall be processed to reduce radioactive effluents when required to maintain releases within the limits of Specification 15.7.5.B.
   b. Wastes collected in the waste holdup tank shall be processed to reduce radioactive effluents when required to maintain releases within the limits of Specification 15.7.5.B.

c. Preplanned tank batch releases may be made without processing under any of the following conditions, provided the release limits of Specification 15.7.5.B are not exceeded:

1. Processing or disposal of tank contents would prevent plant operation or delay plant start-up or shutdown; or
2. The tank release is necessary to conform to Technical Specification operating requirements; or
3. The tank release is necessary to eliminate a chemical contaminant to satisfy chemistry specifications; or
4. The tank release is desired for any other reason and a cost-benefit analysis has been performed.

H. Total Dose

1. Compliance with the provisions of Appendix I to 10 CFR 50 is adequate demonstration of conformance to the standards set forth in 40 CFR 190.
2. If the calculations required by B.3 or D.3 of this specification exceed twice the annual limits as specified in Specifications 15.7.5.B.1 and 15.7.5.D.1, dose calculations shall be performed as described in the ODCM and shall include exposures from effluent pathways and direct radiation contributions from the reactor units and from any outside storage tanks.
3. A report will be submitted to the Commission within 30 days upon completion of the dose calculations required by Specification 15.7.5.H.2, if the calculated dose to any member of the general public exceeds the 40 CFR 190 annual dose limits.

I. Explosive Gas Mixture

The concentration of oxygen in the on-service gas decay tank shall be limited to less than or equal to 4% by volume.

1. If the concentration of oxygen in the on-service gas decay tank is greater than 4% by volume, immediately suspend all additions of waste gases to the on-service gas decay tank.
2. Reduce the oxygen concentration to less than 4% oxygen by volume as soon as possible. If the on-service gas decay tank is at or

near capacity and the tank must be isolated to permit the required decay time to conform with release limits of 15.7.5.D, it will not be possible to immediately reduce the oxygen concentration. In this case, the tank will be isolated and the oxygen concentration reduced as soon as the gas decay requirements are satisfied.

J. Solid Radioactive Waste

The solid radwaste system shall be used in accordance with the Process Control Program to process radioactive wastes to meet all shipping and burial ground requirements. If the provisions of the Process Control Program are not satisfied, shipments of defectively processed or defectively packaged radioactive waste from the site will be suspended. The Process Control Program shall be used to verify solidification of radwaste.

Basis

Liquid wastes from the radioactive waste disposal system are diluted by the circulating water system prior to release to Lake Michigan[1]. With two pumps operating per unit, the rated flow of the circulating water system is approximately 356,000 gpm per unit. Operation of a single circulating water pump per unit reduces the nominal flow rate by about 40%. Liquid waste from the waste disposal system may be discharged to the circulating water system of either unit via the service water return header. Because of the low radioactivity levels in the circulating water discharge, the concentrations of liquid radioactive effluents at this point are not measured directly. The concentrations in the circulating water discharge are calculated from the measured concentration of the liquid effluent, the discharge flow rate of the effluent and the nominal flow in the circulating water system.

The concentration of liquid radioactive wastes in the circulating water discharge does not exceed 10 CFR 20 MPC values. The average concentrations at the intake of the nearest public water supply are well below the MPC values of 10 CFR 20, Appendix B[2]. Thus, discharge of liquid wastes not exceeding the design release limits will not result in significant exposure to members of the public as a result of consumption of drinking water from the lake, even if the effect of potable water treatment systems on reducing radioactive concentrations of the water supply is conservatively neglected.

and a determination that the change will not reduce the overall effectiveness of the PCP or ODCM. For the ODCM, this submittal shall include revised ODCM pages affected by the change identified with a revision number and approval date.

7. Special Circumstance Reports

   a. In accordance with note 7 to Table 15.7.3-1, if the Waste Gas Holdup System Explosive Gas Monitor is out of service for greater than 14 days.

   b. In accordance with 15.7.7.B.3, factors which render the LLDs stated in Table 15.7.7-2 unachievable.

   c. In accordance with 15.7.7.E.2, failure of the analytical laboratory to participate in an Interlaboratory Comparison Program.

B. Measured Radioactivity Above Notification Levels

If the confirmed level of radioactivity remains above the notification levels specified in Table 15.7.7-3 of specification 15.7.7 "Operational Environmental Monitoring Program", a written report describing the circumstance shall be prepared and submitted within thirty days of the confirmation that a notification level was exceeded.

C. Radioactive Liquid Effluent Treatment

If the radioactive liquid effluent treatment system is inoperable and liquid effluents are being discharged for 31 days without the treatment required to meet the release limits specified in Section 15.7.5, a special report shall be prepared and submitted to the Commission within thirty days which includes the following information:

1. Identification of the inoperable equipment or subsystem and the reason for inoperability.
2. Actions taken to restore the inoperable equipment to operable status.

3. Summary description of actions taken to prevent a recurrence.

D. Radioactive Gaseous Effluent Treatment

If the radioactive gaseous effluent treatment system is inoperable and gaseous effluents are being discharged for 31 days without the treatment required to meet the release limits specified in Section 15.7.5, a special report shall be prepared and submitted to the Commission within thirty days which includes the following information:

1. Identification of the inoperable equipment or subsystem and the reason for inoperability.
2. Actions taken to restore the inoperable equipment to operable status.
3. Summary description of actions taken to prevent a recurrence.

E. Radioactive Effluent Releases

If the quantity of radioactive material actually released in liquid or gaseous effluents during any calendar quarter exceeds twice the quarterly limit as specified in Section 15.7.5, a special report shall be prepared and submitted to the Commission within thirty days of determination of the release quantity.

15.7.8.5 Major Change to Radioactive Liquid, Gaseous and Solid Waste Treatment Systems

Licensee initiated major changes to the radioactive waste treatment systems (liquid, gaseous, and solid) shall be reported to the U.S. Nuclear Regulatory Commission with the annual update to the FSAR for the period in which the major change was complete. The discussion of each change shall include:

A. A summary of the evaluation that led to the determination that the change could be made in accordance with 10 CFR Part 50.59;

B. Information necessary to support the reason for the change;

TABLE 15.7.7-3 RADIOLOGICAL ENVIRONMENTAL MONITORING ANALYSIS

NOTIFICATION LEVELS

Analysis	Vegetation (pCi/g wet)	Airborne (pCi/m^3)	Milk (pCi/l)	Well Water & Lake Water (pCi/l)-T.S.	Algae (pCi/g wet)	Fish (pCi/g wet)
H-3				30,000		
I-131	0.1	0.9	3			
Cs-137	2	20	70	50	10	2
Cs-134	1	10	60	30	10	1
Co-58				1,000	10	30
Co-60				300	10	10
Ba-La-140			300	200		
Zr-Nb-95				400		
Fe-59				400		10
Zn-65				300		20
Mn-54				1,000		30

TABLE 15.7.7-2 RADIOLOGICAL ENVIRONMENTAL MONITORING ANALYSIS[1]

LOWER LIMIT OF DETECTION (LLD)[2]

Analysis	Vegetation (pCi/g wet)	Airborne (pCi/m^3)	Milk (pCi/l)	Well Water & Lake Water[3] (pCi/l)-T.S.[4]	Algae (pCi/g wet)	Fish (pCi/g wet)
Gross Beta		0.01		4	0.25	
H-3				3,000		
Gamma Scan						
I-131	0.06	0.07	0.5			
Cs-137	0.08	0.06	18	18	0.25	0.15
Cs-134	0.06	0.05	15	15	0.25	0.13
Co-58				15	0.25	0.13
Co-60				15	0.25	0.13
Ba-La-140			15	15		
Zr-Nb-95				15		
Fe-59				30		0.26
Zn-65				30		0.26
Mn-54				15		0.13