

RAD-CHEM PROCEDURE

SPECIFICATIONS AND SURVEILLANCE REFUELING AND SPENT FUEL POOL SYSTEM

Approved by _____ Part / of _____
RSCE JAT 1-20-
POSRC 60-9
Chief ENCL 60-9

POOR ORIGINAL

Attachment 1

1.0 PURPOSE

The purpose of this procedure is to specify the chemistry and radiochemistry requirements and the surveillance program for the Refueling and Spent Fuel Pool System (RWP and SFP). Since the water used in the refueling pool is the same as the water used in the refueling water tank (RWT), this RCP also covers the RWT.

2.0 SPECIFICATIONS - TABLE 1

- 2.1 The specifications for the chemistry and radiochemistry requirements are given in Table 1.
- 2.2 The optical clarity of the pool water must be maximized so that fuel bundle inspection can be performed easily. Minimum optical clarity is defined as being able to read fuel bundle lettering which is 3/8" high, 3/16" wide, and 1/16" thick at 25 feet below the surface of the water with the aid of optical instruments.
- 2.3 Consideration of spent fuel pool ion exchanger resin replacement should be made if any of the below listed guidelines are exceeded.
 - 2.3.1 Effluent concentrations exceed reactor coolant specifications RCP 1-202.
 - 2.3.2 An average Decontamination factor less than 10 for gamma emitters is determined.
 - 2.3.3 Influent and effluent lithium concentrations are equal.
 - 2.3.4 A ion exchanger vessel contact radiation level of 50 R/hr is exceeded.
- 2.4 Consideration of spent fuel pool filter replacement should be made if any of the below listed guidelines are exceeded.
 - 2.4.1 Decontamination factors less than 10 for suspended solids.

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DO NOT REMOVE
CALVERT CLIFFS
NUCLEAR POWER PLANT

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2.4.2 A vessel radiation level in excess of 50R/hr on contact
is exceeded.

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3.0 SURVEILLANCE - Table 1

3.1 Sampling of the Refueling and Spent Fuel Pool System will be
accomplished in accordance with frequencies listed in Table 1.

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REFUELING AND SPENT FUEL POOL SYSTEMTABLE 1

POOR ORIGINAL

<u>ANALYSIS PROCEDURE/METHOD</u>	<u>SPECIFICATION</u>	<u>FREQUENCY</u>
A. <u>SPENT FUEL POOL AND REFUELING WATER TANKS</u>		
1. Conductivity/901	(1)	1/M
2. pH @ 25°C/902	4.5 - 10.2 (2)	1/M
3. Boron/903 (Tech Spec 3.5.4)	1720-2200ppm (5)	1/7 days
4. Chloride/906	0.15 ppm (max)	1/M
5. Fluoride/907	0.10 ppm (max)	1/M
6. Lithium/908	0.5 ppm (max)	1/M
7. Ammonia/909	50 ppm (max)	As Required
8. Total Solids/911	(3)	As Required
9. Gross Beta-Gamma degassed Activity (1hr)/1001	$1 \times 10^{-3} \mu\text{Ci/cc}$	1/M
10. Optical Clarity	See Section 2.2	As Required
B. <u>ION EXCHANGER EFFLUENT</u>		
1. Conductivity/901	(1)	1/M
2. pH @ 25°C/902	(1)	1/M
3. Chloride/906	0.15 ppm (max)	1/M
4. Fluoride/907	0.10 ppm (max)	1/M
5. Lithium/908	0.5 ppm (max)	1/M
6. Quantitative Gamma Activity	$DF_{avg}=10(\text{min})(4)$	1/M
7. Dose Rate, Vessel Contact	50R/hr (max)	1/M

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REFUELING AND SPENT FUEL POOL SYSTEMTABLE 1 (Continued)

<u>ANALYSIS</u> <u>PROCEDURE/METHOD</u>	<u>SPECIFICATION</u>	<u>FREQUENCY</u>
C. <u>FILTER</u>		
1. Suspended Solids/911	DF = 10 (min)	1/M
2. Dose Rate, Vessel Contact	50 R/hr (max)	1/M
(1) Should be consistent with concentrations of chemical additives		
(2) Expected range		
(3) Depends on desirable optical clarity		
(4) DF = influent/effluent		
(5) Any time Boron does not fall within this range, the Shift Supervisor <u>and</u> the RSCF must be immediately notified and a confirmation sample drawn.		