

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1) DONALD C. COOK NUCLEAR PLANT UNIT 1										DOCKET NUMBER (2) 0 5 0 0 0 3 1 5					PAGE (3) 1 OF 0 2					
TITLE (4) RADIATION MONITORING SYSTEM SETPOINTS																				
EVENT DATE (5)			LER NUMBER (6)				REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)										
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	MONTH	DAY	YEAR	FACILITY NAMES				DOCKET NUMBER(S)							
0	9	1	2	8	4	8	4	0	2	2	0	0	1	0	1	0	8	4	D. C. COOK UNIT 2	0 5 0 0 0 3 1 6
THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §. (Check one or more of the following) (11)																				
OPERATING MODE (9)		1																		
POWER LEVEL (10)		1 0 0																		
		20.402(b)				20.405(e)				50.73(a)(2)(iv)				73.71(b)						
		20.405(a)(1)(i)				50.38(e)(1)				50.73(a)(2)(v)				73.71(c)						
		20.405(a)(1)(ii)				50.38(e)(2)				50.73(a)(2)(vii)				OTHER (Specify in Abstract below and in Text, NRC Form 350A)						
		20.405(a)(1)(iii)				X 50.3(a)(2)(i)				50.73(a)(2)(viii)(A)										
		20.405(a)(1)(iv)				50.73(a)(2)(ii)				50.73(a)(2)(viii)(B)										
		20.405(a)(1)(v)				50.73(a)(2)(iii)				50.73(a)(2)(ix)										
LICENSEE CONTACT FOR THIS LER (12)																				
NAME T. A. KRIESEL - TECHNICAL/PHYSICAL SCIENCES DEPARTMENT										TELEPHONE NUMBER 6 1 6 4 6 5 - 5 9 0 1										
COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)																				
CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC		CAUSE	SYSTEM	COMPONENT	MANUFACTURER	REPORTABLE TO NRC										
SUPPLEMENTAL REPORT EXPECTED (14)												EXPECTED SUBMISSION DATE (15)		MONTH	DAY	YEAR				
<input type="checkbox"/> YES (If yes, complete EXPECTED SUBMISSION DATE)												<input checked="" type="checkbox"/> NO								

ABSTRACT (Limit to 1400 spaces, i.e., approximately fifteen single space typewritten lines) (16)

ON SEPTEMBER 12, 1984 WITH UNIT 1 AND UNIT 2 REACTOR COOLANT SYSTEMS IN MODE 1 AND BOTH UNITS AT 100 PERCENT REACTOR THERMAL POWER IT WAS DISCOVERED DURING A REVIEW OF THE SETPOINT ADJUSTMENT FORMULA THAT INCORRECT DOSE RATE FACTORS WERE BEING CALCULATED, PER PROCEDURE, WHEN USING THE "SETPOINT 3" COMPUTER PROGRAM. THE "SETPOINT 3" COMPUTER PROGRAM IS USED TO CALCULATE THE DOSES AND DOSE RATES FOR BATCH GASEOUS RELEASES FROM THE PROVIDED LABORATORY ANALYSIS. THE ERROR RESULTED IN THE RADIATION MONITORING SYSTEM (RMS) BEING IN NONCOMPLIANCE WITH THE OFF SITE DOSE CALCULATION MANUAL (ODCM). THE RMS ALARM SETPOINT FOR BATCH RELEASES WAS 1.7 TIMES HIGH FOR SKIN DOSE RATE AND 2.0 TIMES HIGH FOR THE TOTAL BODY DOSE RATE PER THE ODCM. THE ERROR WAS CAUSED WHEN THE GASEOUS WASTE RELEASE WAS BEING CALCULATED BASED ON THE EFFLUENT DOSE CALCULATION OPTION TO THE "SETPOINT 3" COMPUTER PROGRAM. AS A CORRECTIVE ACTION THE GASEOUS WASTE RELEASES PROCEDURE WAS CHANGED SO THAT THE DOSE RATES USED TO CALCULATE THE RELEASE LIMIT COMPLIANCE AND RMS SETPOINT CALCULATIONS ARE AS PER THE ODCM. THE DISCOVERY OF THE PROCEDURAL ERROR WAS PART OF A RECENTLY DEVELOPED PROGRAM OF INDEPENDENT PROCEDURE REVIEW BY CORPORATE PERSONNEL. CORPORATE PERSONNEL ARE CONTINUING TO INDEPENDENTLY REVIEW PLANT PROCEDURES TO INSURE TECHNICAL ACCURACY.

THE HEALTH AND SAFETY OF THE PUBLIC WERE NOT AFFECTED.

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PDR ADOCK 05000315
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LICENSEE EVENT REPORT (LER) TEXT CONTINUATION

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED OMB NO. 3150-0104

EXPIRES: 8/31/85

FACILITY NAME (1)	DOCKET NUMBER (2)	LER NUMBER (5)	PAGE (3)											
D. C. COOK NUCLEAR PLANT UNIT 1		<table border="1"><tr><th data-bbox="1030 224 1108 252">YEAR</th><th data-bbox="1113 224 1273 252">SEQUENTIAL NUMBER</th><th data-bbox="1278 224 1372 252">REVISION NUMBER</th></tr><tr><td data-bbox="1030 252 1108 273">84</td><td data-bbox="1113 252 1273 273">-022</td><td data-bbox="1278 252 1372 273">-00</td></tr></table>	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	84	-022	-00	<table border="1"><tr><td data-bbox="1377 224 1455 252">01</td><td data-bbox="1460 224 1538 252">2</td><td data-bbox="1542 224 1571 252">OF</td><td data-bbox="1377 252 1455 273">01</td><td data-bbox="1460 252 1538 273">2</td></tr></table>	01	2	OF	01	2
YEAR	SEQUENTIAL NUMBER	REVISION NUMBER												
84	-022	-00												
01	2	OF	01	2										
05000315	84	-022	-00012											

TEXT (If more space is required, use additional NRC Form 365A's) (17)

ON SEPTEMBER 12, 1984 WITH UNIT 1 AND UNIT 2 REACTOR COOLANT SYSTEMS IN MODE 1 AND BOTH UNITS AT 100 PERCENT REACTOR THERMAL POWER IT WAS DISCOVERED DURING A REVIEW OF A SETPOINT ADJUSTMENT FORMULA THAT INCORRECT DOSE RATE FACTORS WERE BEING CALCULATED, WHEN USING THE "SETPOINT 3" COMPUTER PROGRAM. THE "SETPOINT 3" COMPUTER PROGRAM IS USED TO CALCULATE THE DOSES AND DOSE RATES FOR BATCH GASEOUS RELEASES. THE ERROR RESULTED IN THE RADIATION MONITORING SYSTEM (RMS) SETPOINTS BEING IN NONCOMPLIANCE WITH THE OFF SITE DOSE CALCULATION MANUAL (ODCM). THE RMS ALARM SETPOINTS WERE 1.7 TIMES HIGH FOR SKIN DOSE RATE AND 2.0 TIMES HIGH FOR THE TOTAL BODY DOSE RATE. A RANDOM SAMPLE OF 25 PERCENT OF THE 1983 GASEOUS WASTE RELEASES WERE RECALCULATED USING THE CORRECT DOSE RATE FACTORS AND NONE OF THE NEW DOSE RATES EXCEEDED THE TECHNICAL SPECIFICATION LIMIT OF 500 mREM/YR TO THE TOTAL BODY 3000 mREM/YR TO THE SKIN OR 1500 mREM/YR TO ANY ORGAN. ALL RECALCULATED DOSE RATES WERE A SMALL FRACTION OF THE TECHNICAL SPECIFICATION LIMITS.

THE ERROR WAS CAUSED WHEN THE GASEOUS WASTE RELEASES DOSE RATES WERE BEING CALCULATED BASED ON THE EFFLUENT DOSE CALCULATION OPTION TO THE "SETPOINT 3" COMPUTER PROGRAM. THE SETPOINT OPTION WAS NOT BEING USED AND THEREFORE, THE DOSE RATES DEVELOPED ON THE EFFLUENT DOSE CALCULATION WERE UTILIZED. THE ODCM REQUIRES DOSE RATES TO BE DEVELOPED FOR THE TOTAL BODY, SKIN AND ANY ORGAN, THE EFFLUENT DOSE CALCULATION DOES NOT PROVIDE THESE CALCULATIONS. THE EFFLUENT DOSE CALCULATION OPTION DEVELOPED DOSES FOR AIR GAMMA, AIR BETA AND PARTICULATES/IODINES WITH HALF LIVES GREATER THAN EIGHT DAYS. THE DOSE RATES DEVELOPED IN THIS OPTION WERE DERIVED AS FOLLOWS:

$$\frac{\text{TOTAL DOSE mREMS}}{\text{DURATION OF RELEASE HRS.}} \times \frac{8760 \text{ HRS.}}{\text{YEAR}} = \text{mREM/YR}$$

THE PROCEDURE INCORRECTLY IDENTIFIED THE ABOVE DOSE RATES AS WHOLE BODY AND SKIN IN THE CASES OF AIR GAMMA AND AIR BETA, WHICH GAVE THE IMPRESSION THE DOSE RATES WERE BEING CALCULATED AS PER THE ODCM.

AS CORRECTIVE ACTION THE GASEOUS WASTE RELEASES PROCEDURE WAS CHANGED SO THAT THE DOSE RATES USED TO CALCULATE THE RELEASE LIMIT COMPLIANCE AND RMS ALARM SETPOINTS CALCULATIONS ARE PER THE ODCM.

THE DISCOVERY OF THE ERROR WAS PART OF A RECENTLY DEVELOPED PROGRAM OF INDEPENDENT PROCEDURE REVIEW BY CORPORATE PERSONNEL. CORPORATE PERSONNEL ARE CONTINUING TO INDEPENDENTLY REVIEW PLANT PROCEDURES TO INSURE TECHNICAL ACCURACY.

THE HEALTH AND SAFETY OF THE PUBLIC WERE NOT AFFECTED.