ARKANSAS POWER & LIGHT COMPANY
Arkansas Nuclear One

MAGNITUDE OF RELEASE PROCEDURE | FORM 1000.06A

MAGNITUDE OF RELEASE - COMPUTER METHOD
1904.01 REV. 0

Safety Related

UN-Controlled Copy # 111

RECORD OF CHANGES AND REVISIONS

PAGE	REVISION	CHANGE	PAGE	REVISION	CHANGE	PAGE	REVISION	CHANGE
1	0		19	0		37	0	
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4	0	PC-2	22	0				
5	0		23	0				
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12	0	PC-1	30	0				
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APPROVED BY: J. P. O'Hanlon for J. Levine
(GENERAL MANAGER)

APPROVAL DATE: 3/19/82

7.0 DETERMINATION OF EXISTING METEROLOGICAL CONDITIONS AND THE GASEOUS RELEASE RATE

NOTE: If site meteorological data is unavailable, limited meteorological data may be obtained from the following groups. [If the Pasquil Atmospheric Stability Category cannot be obtained, assume Category "G" (most conservative).]

A. National Weather Service (Meteorologist-in-Charge) [771-0971; or ▽ ▽ ; or 771-1080 (recording)]

B. KARV Radio (968-1184)

C. MSS Dispatcher

7.1 Record the current date and time in Lines 1 and 2 respectively of Form 1904.01A.

7.2 Record the $\sigma\theta$ from recorder AAR 9300 on Form 1904.01A, Line 3. If $\sigma\theta$ is not available, record the Δt from recorder AAR 9300 and note appropriately.

7.3 Record the prevailing wind direction (40' elev., if available) from recorder WDR 9300 on Form 1904.01A, Line 4.

7.4 Record the wind speed (40' elev., if available) from recorder WSR 9300 on Form 1904.01A, Line 5.

7.5 Record the net counts per minute and the corresponding system flow rates for each of the following monitors that are in service on Form 1904.01A.

7.5.1 Stack (RE-7400,FR-8001), Lines 6 and 7, respectively.

7.5.2 Penetration Room (RI-2120,FI-2120), Lines 8 and 9, respectively.

7.5.3 Penetration Room (RI-2130,FI-2130), Lines 10 and 11, respectively.

7.5.4 Hydrogen Purge (RI-7441, RI-7441A, FI-7441), Lines 12, 13 and 14, respectively.

7.5.5 Hydrogen Purge (RI-7442, RI-7442A, FI-7442), Lines 15, 16 and 17, respectively.

7.5.6 "A" Steam Header (RI-2682), Line 18.

7.5.7 No safeties/atmospheric dumps open (this is only applicable if the steam generator has primary-to-secondary leakage due to tube rupture; by using this method of calculation, the length of the release is not considered - it is only considered to be a portion of the instantaneous release rate for the time of the calculation; for the initial release, assume 14 safeties open; for follow-up determinations, assume 2 safeties open unless verified to be more or less) Line 19.

7.5.8 "B" Steam Header (RI-2681), Line 20.

7.5.9 No safeties/atmospheric dumps open (see note on Step 7.5.7), Line 21.

7.5.10 Pass building (refer to 2904 series procedures).

ARKANSAS POWER & LIGHT COMPANY
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MAGNITUDE OF RELEASE | FORM 1000.06A

Safety Related

MAGNITUDE OF RELEASE - GERMS
1904.04 REV. 0

UN - Controlled Copy # 111

RECORD OF CHANGES AND REVISIONS

PAGE	REVISION	CHANGE	PAGE	REVISION	CHANGE	PAGE	REVISION	CHANGE
1	0		19	0				
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7	0		25	0				
8	0							
9	0							
10	0	PC-1						
11	0							
12	0	PC-1						
13	0	PC-1						
14	0							
15	0							
16	0							
17	0							
18	0							

APPROVED BY: W. D. Hamilton for J. Ted Enos
(GENERAL MANAGER)

APPROVAL DATE 7/14/82

7.0 DETERMINATION OF EXISTING METEROLOGICAL CONDITIONS AND THE GASEOUS RELEASE RATE

7.1 Record the current date and time in Lines 1 and 2 respectively of Form 1904.04A. If onsite meterological data is unavailable, enter "OOS" (Out of Service) in the appropriate space.

7.2 Record the $\sigma\theta$ from recorder AAR 9300 on Form 1904.04A, Line 3. If $\sigma\theta$ is not available, record the Δt from recorder AAR 9300 and note appropriately.

7.3 Record the prevailing wind direction (40' elev., if available) from recorder WDR 9300 on Form 1904.04A, Line 4.

7.4 Record the wind speed (40' elev., if available) from recorder WSR 9300 on Form 1904.04A, Line 5.

7.5 Record the radioactive release data as indicated on the Eberline CT2 for each of the following release points that are in service on Form 1904.04A:

7.5.1 At the Eberline Control Terminal (CT), insert the key into the "keyboard" switch and activate the control terminal.

7.5.2 Set the History Format select knob to "Release Rate."

7.5.3 For each of the channels to be interrogated, depress the [Hist. Min] pushbutton then enter the 2-digit monitor ID number and then the two digit channel ID. Then depress the [ENTER] pushbutton.

NOTE: A printout of the 23 previous 10-minute averages plus the current value will appear.

A. Containment Purge [RX-9820] (Monitor 09; Channels 05, 07 or 09; in µCi/min), Line 6.

B. Radwaste Area [RX-9825] (Monitor 06; Channels 05, 07 or 09; in µCi/min), Line 7.

C. Fuel Handling Area [RX-9830] (Monitor 04; Channels 05, 07 or 09; in µCi/min), Line 8.

D. Penetration Room/H_2 Purge [RX-9835] (Monitor 03; Channel 05, 07 or 09; in µCi/min), Line 9.

E. PASS Building (covered by 2904.04, "Magnitude of Release - Germs").

ARKANSAS POWER & LIGHT COMPANY
Arkansas Nuclear One

TITLE: EXISTING CONDITIONS SUMMARY

FORM NO. ~~1904.04A~~

REV. # 0 PC # 1

LINE	ITEM	READING ( ) 1	( ) 2	( ) 3	( ) 4
1	DATE				
2	TIME (HHMM)				
3	$\sigma\theta$ (degrees) [or ( ) Δt (°C)] (AAR-9300)				
4	WIND DIRECTION (WDR-9300) FROM, IN DEGREES [~ 15 MIN. AVG.]				
5	WIND SPEED (WSR-9300) MPH [~ 15 MIN. AVG.]				
6	CONTAINMENT PURGE [MONITOR 09; CHANNEL ()05, ()07, ()09] µCi/Min				
7	RADWASTE AREA [MONITOR 06; CHANNEL ()05, ()07, ()09] µCi/Min				
8	FUEL HANDLING AREA [MONITOR 04; CHANNEL ()05, ()07, or ()09] µCi/Min				
9	PENETRATION ROOM/HYDROGEN PURGE [MONITOR 03; Channel ()05, ()07, or ()09] µCi/Min				
10	"A" STEAM HEADER, (RI-2682) mR/hr				
11	NO. SAFETIES/ATMOSPHERIC DUMPS OPEN				
12	LBS/HR STEAM EXHAUSTED				
13	"B" STEAM HEADER, (RI-2681) mR/hr				
14	NO. SAFETIES/ATMOSPHERIC DUMPS OPEN				
15	LBS/HOUR STEAM EXHAUSTED				
16	UNMONITORED RELEASE PATH(S), Ci/Sec				
17	INITIALS				

REVIEWED BY _____

ARKANSAS POWER & LIGHT COMPANY
Arkansas Nuclear One

TITLE: ~~GASEOUS RELEASE RATE WORKSHEET~~ FORM NO. ~~1904.04C~~

REV. # 0 PC # 1

LINE NO.	MONITOR NO.	DESIGNATION	CHANNEL (CIRCLE)			RELEASE RATE (μCi/Min)	RELEASE RATE+ (Ci/Sec)
1	09	CONT. PRG.	05	07	09		
2	06	RADWASTE AREA	05	07	09		
3	04	FUEL HD. AREA	05	07	09		
4	03	PEN RM/H_2 PURGE	05	07	09		
5		"A" STM. HDR.*	[redacted]				
6		"B" STM. HDR.*					
7		UNMONITOR. PATH					
8		TOTALS					

*1. Ci/Sec = Net mR/hr * No. Safeties/Atm. Dumps Open * 0.0152 $\frac{\text{Ci/Sec}}{\text{mR/hr}}$

+2. μCi/Min * 1.67E - 8 = Ci/Sec

or

Ci/Sec = Net mR/hr * Lbs./hr Steam Exhausted * 1.9E-8

Performed by: _____ / _____
Initial Time

Reviewed by: _____

ARKANSAS POWER & LIGHT COMPANY
Arkansas Nuclear One

TITLE: EMERGENCY ACTION LEVEL DETERMINATON
FORM NO. 1904.04D
REV. # 0 PC # 1

CALCULATION OF DOSE RATE & MPC AT THE EXCLUSION AREA BOUNDARY (0.65 MILES)

Line		Column A ANNUAL AVERAGE CONDITIONS Category: N/A	Units	Column B EXISTING CONDITIONS Category:
1.0	Enter the Total Gaseous Release Rate (Ci/Sec) (From 1904.04C) in Columns A & B.	_____	Ci/Sec	_____
2.0	Select and Enter the Whole Body dose factor from the following list which corresponds to the existing Atmospheric Stability Category (from 1904.04B) in Column B.	0.69	mR/hr / Ci/Sec	_____
3.0	Calculate the Uncorrected Whole Body Dose Rate at the Exclusion Area Boundary (Line 1.0 X Line 2.0) and enter the products in Column A and B, respectively.	_____	mR/hr	_____
4.0	Enter the existing windspeed (from 1904.04B) in Column B.	XXXXXXXXXXX	(mph)	_____
5.0	Correct the Whole Body Dose Rate for windspeed (Line 3B ÷ Line 4B) and enter results in Column B.	XXXXXXXXXXX	mR/hr	_____

Atmospheric Stability Category	WB Dose Factor
A	1.01
B	5.14
C	11.0
D	23.5
E	35.4
F	51.0
G	84.4