Exhibit C
NEP-12-02
Revision 5

CALCULATION TITLE PAGE

Page No. 1

ComEd

BYRON STATION UNIT(S) 1&2

Calculation No: BYR97-332
Project No.: 9044-057
Description Code: R02
Discipline Code: M
System Code: VC, MS

TITLE: Control Room Dose for MSLB Accident

X Safety Related ___ Augmented Quality ___ Non-Safety Related

REFERENCE NUMBERS

Type	Number	Type	Number
DCP	9500394		

COMPONENT EPN:

EPN	Compt Type

DOCUMENT NUMBERS:

Doc Type/Sub Type	Document Number

REMARKS:

REV. NO.	REVISING ORGANIZATION	APPROVED PRINT/SIGN	DATE
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COMMONWEALTH EDISON COMPANY
CALCULATION REVISION PAGE

CALCULATION NO. BYR97-332 PROJECT NO. 9044-057 PAGE NO.: 2

REVISION SUMMARIES

REV: 0

REVISION SUMMARY:

Original issue, page 1 through 7, A1, A2, B1, C1

Electronic Calculation Data Files:

(Program Name, Version, File name ext/size/date/hour/: min)

None

Prepared by: W. J. Johnson / [signature] 8/22/97
Print/Sign Date

Reviewed by: B. C. Schwarz / [signature] 8/22/97
Print/Sign Date

Type of Review
[X] Detailed [ ] Alternate [ ] Test

DO ANY ASSUMPTIONS IN THIS CALCULATION REQUIRE LATER VERIFICATION [ ] YES [X] NO

Tracked by: _____

REV:

REVISION SUMMARY:

Electronic Calculation Data Files:

(Program Name, Version, File name ext/size/date/hour/: min)

Prepared by: _____ _____
Print/Sign Date

Reviewed by: _____ _____
Print/Sign Date

Type of Review
[ ] Detailed [ ] Alternate [ ] Test

DO ANY ASSUMPTIONS IN THIS CALCULATION REQUIRE LATER VERIFICATION [ ] YES [ ] NO

Tracked by: _____

TABLE 6.4-1

EXPECTED DOSE TO CONTROL ROOM PERSONNEL AT BYRON STATION

FOLLOWING A LOSS-OF-COOLANT ACCIDENT (LOCA)

	CONCRETE SHIELD THICKNESS BETWEEN SOURCE AND CONTROL ROOM, INCHES	ACCUMULATED 30 DAY DOSE, REM		
		γ WHOLE BODY	β and γ SKIN	THYROID
Direct Dose From Airborne Radioactivity in the Containment	Sidewall - 102 Ceiling - 68	0.023	--	--
Dose From Post-LOCA Plume Surrounding Control Room	24	0.003	--	--
Dose From Radioactivity Accumulated on Control Room Makeup Air Filters	8	0.013	--	--
Dose From Air Drawn into the Control Room				
From Containment Leakage	N/A	2.17	23.30	18.20
From ESF Equipment Leakage	N/A	1.08×10^{-5}	$.65 \times 10^{-5}$	0.274
10 CFR 50, Appendix A, Criterion 19 Limits		5	30	30

Note: Principal assumptions are listed in Table 6.4-1a.

TABLE 6.4-1a

PRINCIPAL ASSUMPTIONS USED IN CONTROL ROOM HABITABILITY CALCULATIONS

Core thermal power		3565 MW(t)
Containment volume:	sprayed volume	2.55×10^6 ft^3
	unsprayed volume	2.130×10^5 ft^3
Flow rate, sprayed to unsprayed volume		1.80×10^5 ft^3/min
Containment spray coefficients:		
elemental iodine		29.9/hr
particulate and organic iodine		0
Containment leak rate	0-24 hr	0.1%/day
	1-30 day	0.0[illegible]/day
ECCS leak rate		1.ga /hr.
Auxiliary bldg filter efficiency		90%
Control room habitability methodology: Murphy/Campe		13th air cleaning conference paper

Single inlet configuration is assumed at a distance of 100 feet from the containment surface.

χ/Q (maximum 0-8 hour) in a direction 98° East of North from the Unit 2 containment = 4.05×10^{-3} sec/m^3

	χ/Q REDUCTION FACTOR			
TIME PERIOD	WINDSPEED FACTOR	WIND DIRECTION FACTOR	OCCUPANCY FACTOR	TOTAL χ/Q REDUCTION FACTOR
0-8 hr	1.0	1.0	1.0	1.0
8-24 hr	0.549	0.856	1.0	0.470
24-96 hr	0.331	0.712	0.6	0.141
96-720 hr	0.199	0.424	0.4	0.034

Control room HVAC envelope volume	405,164 ft^3
Actual control room volume used for finite cloud correction	230,837 ft^3
Control room air intake filter efficiency	99%
Control room recirc. filter efficiency	90%
Control room flow rates (see Figures 6.4-6 and 6.4-7)	
Total unfiltered inleakage rate into the control room pressure boundary	78.75 ft^3/min.

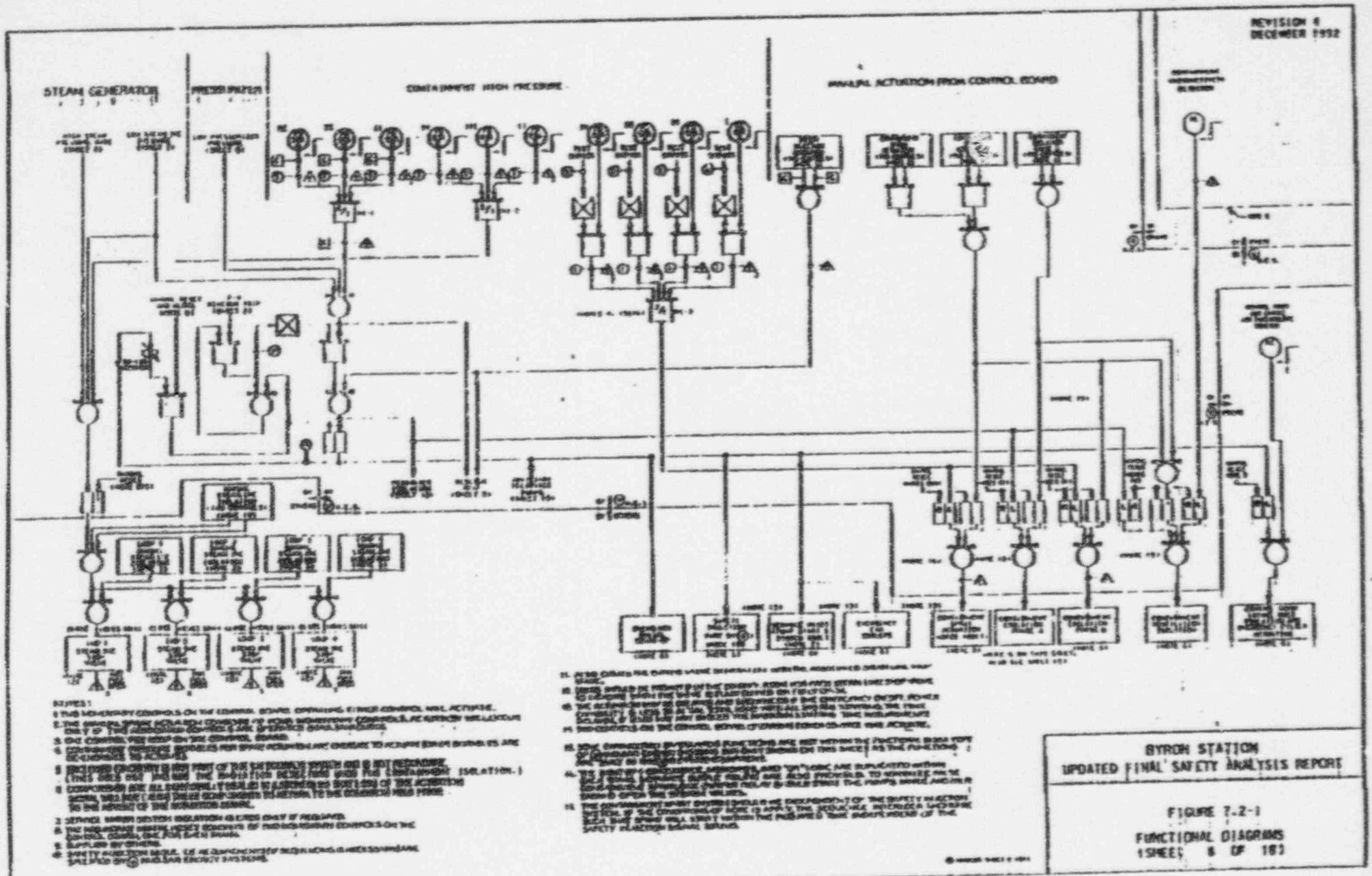

TABLE 15.6-9

ACTIVITY RELEASES TO ATMOSPHERE FROM LOSS OF COOLANT ACCIDENT

(Realistic Analysis Activity Release (Ci))

ISOTOPE	0-2 HR	2-8 HR	8-24 HR	1-4 DAYS	4-30 DAYS
I-131	6.21 (-5)	1.58 (-4)	4.06 (-4)	3.91 (-4)	1.19 (-3)
I-132	1.82 (-4)	1.54 (-4)	3.08 (-5)	6.71 (-8)	3.47 (-17)
I-133	1.58 (-4)	3.56 (-4)	6.66 (-4)	2.16 (-4)	2.20 (-5)
I-134	1.66 (-5)	3.24 (-6)	2.82 (-8)	2.21 (-4)	3.80 (-39)
I-135	1.07 (-4)	1.84 (-4)	1.74 (-4)	1.03 (-5)	6.21 (-9)
Xe-133	1.63 (-2)	4.77 (-2)	1.20 (-1)	1.07 (-1)	2.13 (-1)
Xe-133m	1.86 (-3)	5.28 (-3)	1.22 (-2)	8.10 (-3)	5.35 (-3)
Xe-135	2.86 (-3)	6.38 (-3)	7.81 (-3)	8.28 (-4)	3.62 (-6)
Xe-135m	2.66 (-5)	1.29 (-7)	1.45 (-14)	1.06 (-33)	NEGLIGIBLE
Xe-138	9.86 (-5)	7.40 (-7)	3.05 (-13)	7.22 (-31)	NEGLIGIBLE
Kr-85	7.58 (-3)	2.27 (-2)	6.06 (-2)	6.81 (-2)	5.88 (-1)
Kr-85m	8.24 (-4)	1.38 (-3)	7.98 (-4)	1.70 (-5)	1.81 (-10)
Kr-87	3.71 (-4)	1.80 (-4)	7.01 (-6)	2.77 (-10)	2.18 (-27)
Kr-88	1.48 (-3)	1.78 (-3)	5.01 (-4)	2.34 (-6)	3.56 (-14)

(Regulatory Guide 1.4 Analysis Activity Release (Ci))

I-131	2.14 (+2)	5.45 (+2)	1.40 (+3)	2.69 (+3)	8.12 (+3)
I-132	2.57 (+2)	2.17 (+2)	4.35 (+1)	1.89 (+1)	NEGLIGIBLE
I-133	4.69 (+2)	1.06 (+3)	1.98 (+3)	1.28 (+3)	1.30 (+2)
I-134	3.20 (+2)	6.22 (+1)	5.42 (+1)	NEGLIGIBLE	NEGLIGIBLE
I-135	4.01 (+2)	6.84 (+2)	6.46 (+2)	7.68 (+1)	4.60 (-2)
Xe-133	1.69 (+4)	4.94 (+4)	1.24 (+5)	2.21 (+5)	4.40 (+5)
Xe-133m	4.29 (+2)	1.21 (+3)	2.81 (+3)	3.72 (+3)	2.45 (+3)
Xe-135	4.27 (+3)	9.53 (+3)	1.17 (+4)	2.47 (+3)	1.08 (+1)