Commonwealth Edison Company
1400 Opus Place
Downers Grove, IL 60515-5701

ComEd

February 9, 1996

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D.C. 20555

SUBJECT: LaSalle County Nuclear Power Station Units 1 and 2
Supplement to Application for Amendment of Facility Operating Licenses NPF-11 and NPF-18, Appendix A, Technical Specifications, and Exemption to Appendix J of 10CFR50 Regarding Elimination of MSIV Leakage Control System and Increased MSIV Leakage Limits
NRC Docket Nos. 50-373 and 50-374

REFERENCE: G. Benes letter to USNRC dated August 28, 1995, LaSalle Submittal Regarding Elimination of MSIV LCS.

The Referenced letter transmitted the original application for amendment to propose changes to revise LaSalle Unit 1 and LaSalle Unit 2 Technical Specifications to support elimination of the Main Steam Isolation Valve Leakage Control System (MSIV LCS) and instead use the main steam line drains and condenser to process MSIV leakage. The purpose of this letter is to provide additional information in regards to this submittal. The radiological consequences have been recalculated since the Alternate Leakage Treatment (ALT) Paths are actually shorter than what was assumed in the original calculation submitted with the Referenced letter. The original calculation bounds the revised calculation since the lengths of ALT Paths A and B are bounded by the longer ALT path assumed in the original calculation. The differences between the original and the recalculated radiological consequences are insignificant, thus the original Significant Hazards Consideration, that was included in the Referenced submittal, remains valid. A summary of the original and the recalculated radiological consequences is attached.

To the best of my knowledge and belief, the statements contained above are true and correct. In some respect these statements are not based on my personal knowledge, but obtained information furnished by other Commonwealth Edison employees, contractor employees, and consultants. Such information has been reviewed in accordance with company practice, and I believe it to be reliable.

k:\nla\lasalle\newdose.wpf:1

A017 1/1

Commonwealth Edison is notifying the State of Illinois of this supplemental application for amendment by transmitting a copy of this letter and its attachment to the designated state official.

Please direct any questions you may have concerning this submittal to this office.

Very truly yours,

Gary G. Benes
Nuclear Licensing Administrator

Subscribed and Sworn to before me
on this 9th day of
February, 1996.

Jacqueline T Evans
Notary Public

OFFICIAL SEAL
JACQUELINE T EVANS
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES: 12/15/97

Attachment:

cc: H. J. Miller - Regional Administrator, Region III
M. D. Lynch - Project Manager, NRR
P. G. Brochman, Senior Resident Inspector - LaSalle County Station
Office of Nuclear Facility Safety - IDNS

ATTACHMENT

The radiological consequences of the design basis accidents (DBAs) with a maximum MSIV leak rate of 400 scfh total from all four main steam lines and without the MSIV-LCS have been reassessed, due to the determination that ALT paths A and B (Reference 3) were shorter than assumed in the original dose calculation submitted with Reference 1. The offsite and control room radiological consequences which could result from the occurrence of a postulated loss of coolant accident (LOCA) have been recalculated using the shorter of the two ALT paths, ALT path B, (see attached Reference 4).

The original dose calculation submitted with Reference 1 assumed a drain line length equivalent to four 2" lines with an internal surface area of 349.5 square inches. The corrected drain line length internal surface areas are 274.7 square inches for ALT path A and 204.0 square inches for ALT path B. The revised dose calculation Reference 4, used 204.0 square inches to bound both ALT path A and B.

The revised LaSalle dose calculation determined the radiological doses at the exclusion area boundary (EAB) and Low Population Zone (LPZ) and the control room operator doses following a postulated LOCA associated with ALT path B and are listed in Table 2, attached. The doses due to the combined effects of containment leakage and MSIV leakage are within the limits of 10 CFR 100. The recalculated control room whole-body and equivalent organ doses (thyroid) are still within the guidelines of Standard Review Plan Section 6.4.

Table 1 of Reference 1 Attachment A is included as Table 1 for comparison with the results of the revised dose calculation. The differences in the results of the original dose calculation and those of the revised calculation are insignificant. The original calculation bounds the revised calculation since the lengths of ALT Paths A and B are bounded by the longer ALT path assumed in the original calculation. Since the differences in dose consequences are insignificant, the original Significant Hazards Evaluation is not changed.

ATTACHMENT

REFERENCES

1. Letter dated August 28, 1995 to the USNRC from G.G. Benes; LaSalle County Nuclear Power Station Units 1 and 2, Application for Amendment of Facility Operating Licenses NPF-11 and NPF-18, Appendix A, Technical Specifications, and Exemption to Appendix J of 10CFR50 Regarding Elimination of MSIV Leakage Control System and Increased MSIV Leakage Limits. NRC Docket Nos. 50-373 and 50-374.

2. BWROG Report for Increasing MSIV Leakage Rate Limits and Elimination of Leakage Control Systems, General Electric Report NEDC-31858P, rev. 2, September 1993.

3. Letter dated February 5, 1996 to the USNRC from G.G. Benes; LaSalle County Nuclear Power Station Units 1 and 2, ComEd Response to NRC Staff Request for Additional Information Regarding the Main Steamline Isolation Valve (MSIV) Leakage Control System (LCS) Alternate Leakage Treatment (ALT) Path. NRC Docket Nos. 50-373 and 50-374.

4. Letter dated February 6, 1996 from T.A. Green (General Electric) to Gerald Swihart (ComEd), GE letter number OG96-104-09; LaSalle Units 1 and 2 Dose Calculations in Accordance with the BWROG Radiological Dose Methodology (Revision 1), attached.

ATTACHMENT

TABLE 1

Loss-of-Coolant Accident Doses
(given in rem)
(Table 1 from Reference 1, Attachment A)

	Previous UFSAR Containment Leakage Contribution	New GE MSIV Leakage Contribution	New Total Doses	Applicable Limit	% of Applicable Limit (New Doses)	% Margin Reduction
Radiological Effects				**10CFR100**		
Exclusion Area (509 meters)						
Whole Body Dose	0.306	0.0016	0.308	25	1.2	0.008
Inhalation (thyroid)	6.06	0.024	6.08	300	2.0	0.007
Low Population Zone (6400 meters)						
Whole Body Dose	0.0336	0.03	0.0636	25	0.3	0.12
Inhalation (thyroid)	2.43	8.33	10.76	300	3.6	2.8
Control Room Doses				**10CFR50 Appendix. A, GDC 19**		
Skin (Beta)	3.4	0.81	4.21	30	14.0	2.7
Whole Body (Gamma)	0.31	0.06	0.37	5	7.4	1.2
Thyroid	10.3	3.19	13.49	30	45.0	10.6

ATTACHMENT

TABLE 2

Loss-of-Coolant Accident Doses
(given in rem)
(Reference 4)

	Previous UFSAR Containment Leakage Contribution	New GE MSIV Leakage Contribution	New Total Doses	Applicable Limit	% of Applicable Limit (New Doses)	% Margin Reduction
Radiological Effects				**10CFR100**		
Exclusion Area (509 meters)						
Whole Body Dose	0.306	0.0016	0.308	25	1.2	0.008
Inhalation (thyroid)	6.06	0.024	6.08	300	2.0	0.007
Low Population Zone (6400 meters)						
Whole Body Dose	0.0336	0.03	0.0636	25	0.3	0.1[illegible]
Inhalation (thyroid)	2.43	8.22	10.6	300	3.5	2.7
Control Room Doses				**10CFR50 Appendix. A, GDC 19**		
Skin (Beta)	3.4	0.81	4.21	30	14.0	2.7
Whole Body (Gamma)	0.31	0.06	0.37	5	7.4	1.2
Thyroid	10.3	3.16	13.46	30	44.9	10.5

OG96-104-09
February 8, 1996

General Electric Company
175 Curtner Avenue, San Jose, CA 95125

Gerald Swihart
Commonwealth Edison
LaSalle Nuclear Generating Station
2601 North 21st Road
Marseilles, IL 61341

SUBJECT: ***LaSalle 1-2 Dose Calculations in Accordance with the BWROG Radiological Dose Methodology [Revision 1]***

Attachments:
(1) "Base case" LaSalle MSIV leakage dose calculation summary (off-site and control room radiological doses)
(2) Summary comparison of MSIV radiological dose results for "base case" and six other alternate control room scenarios
(3) Diagram of LaSalle control room with "base case" parameters (provided by Commonwealth Edison on April 6, 1995)
(4) BWROG control room model and "base case" example calculation for conversion of LaSalle control room parameters into BWROG model input
(5) Control room parameters for "base case" and six other configurations (LaSalle parameters and BWROG code inputs)
(6) Basis for ground level turbine building release atmospheric dispersion factors (off-site and exclusion area boundary)
(7) LaSalle exclusion area boundary radiological dose calculation
(8) BWROG "MSIV Leak" computer input data and resulting radiological dose output

The subject calculations have been revised and verified. ***The drain line length has been revised from 350 feet to 204 feet since this should provide the most conservative dose assessments. Note that this change did not significantly effect the overall integrated doses because the increased elemental iodine concentrations are offset by the lower resuspension and conversion to organic iodine.*** These radiological dose calculations are based on MSIV leakage of 100 scfh per steam line (400 scfh total), and results confirm low radiological dose assessments due to the MSIV leakage source for the control room, exclusion area boundary, and low population zone. These dose assessments will need to be added to the radiological doses from the other release sources to assure that the total integrated 30 day dose meets 10CFR100 and GDC-19 requirements. We have evaluated the minor geometrical differences between the alternate treatment pathways at the two LaSalle units, and have concluded that the differences are insignificant with respect to the effect on radiological dose calculations. Therefore, the attached calculations are applicable to either LaSalle plant. The following bases were employed in these calculations:

1. Murphy-Camphe meteorological dose reduction factors were applied to the control room χ/Q values. Note that the code incorporates the occupancy factor in the input stream and, therefore, the occupancy factors are not included in the χ/Q values. The resulting control room atmospheric dispersion factors are as follows:

Time	Sec/M^3
0 - 8 hours	2.65 E-04
8 - 24 hours	1.56 E-04
1 - 4 days	9.94 E-05
4 - 30 days	4.37 E-05

These factors were provided by Commonwealth Edison and have been verified by GE to be appropriate.

2. The LPZ χ/Q values were provided by Commonwealth Edison and are consistent with those provided to GE for analyses of the control rod drop accident (see Attachment 6):

Time	Sec/M^3
0 - 2 hours (EAB)	5.10 E-04
0 - 8 hours	1.10 E-05
8 - 24 hours	6.70 E-06
1 - 4 days	2.60 E-06
4 - 30 days	6.50 E-07

3. LaSalle "base case" control room parameters are as shown in Attachment 3. The effect on radiological dose with respect to changes in the LaSalle control room parameters are summarized in Attachment 2. These results show that the associated control room dose assessment is not significantly affected by significant changes in the makeup filter flow rate, the leakage between the makeup and control room supply air filter, and unfiltered intake. Note that radiological dose contributions from the high pressure turbine pathway do not significantly contribute to these results.

We have also provided a calculation which demonstrates the dose attenuation due to main condenser removal mechanisms. Without the condenser the resulting 30 day integrated doses are as follows (Base Case):

	Control Room			*Off-Site (LPZ)*	
	WB	**Thyroid**	**Beta**	**WB**	**Thyroid**
Noble Gas	.92	0	10.3	.67	0
Inorganic I	.01	132	.06	.85	404
Organic I	0	15.3	0	.05	43.9
Organic I via Resuspension	0	6.9	0	.01	18.6
Total	0.93	154	10.4	1.58	467

This shows the importance of verifying the seismic adequacy of this component with respect to the alternate treatment pathway.

If you have any questions regarding these verified calculations or any other MSIV Leakage Closure Committee issues, please call the undersigned.

Very truly yours,

H. A. Conway
FOR T.A. GREEN

TA Green
Senior Technical Project Manager
BWR Owners' Group Projects
Tel: (408) 925-1308
Fax: (408) 925-2476
Mail Code 182

cc: SJ Stark, GE

Attachment 1

LA SALLE "BASE CASE" DOSE CALCULATION SUMMARY

Contribution of MSIV Leakage to Offsite and Control Room Radiological Doses

MSIV Leakage at 100 scfh per line	*Control Room* Whole Body (5)	Thyroid (30)	BETA (30-75)	*Off-Site (LPZ)* Whole Body (25)	Thyroid (300)
Noble Gas (DL)	0.06	0.00	0.81	0.03	0.00
Inorganic I (DL)	0.00	0.02	0.00	0.00	0.04
Organic I (DL)	0.00	1.81	0.00	0.00	4.77
Noble Gas (HPT)	0.00	0.00	0.00	0.00	0.00
Inorganic I (HPT)	0.00	0.00	0.00	0.00	0.00
Organic I (HPT)	0.00	0.00	0.00	0.00	0.00
Organic I via Re-suspension/ Conversion (DL)	0.00	1.33	0.00	0.00	3.41
Total	0.06	3.16	0.81	0.03	8.22
		EAB Doses are:		0.0016	0.024

I - Iodine, DL - Drain Line Path, HPT - High-Pressure Turbine Path

TA Green
2-1-96

Attachment 2
Summary Comparison

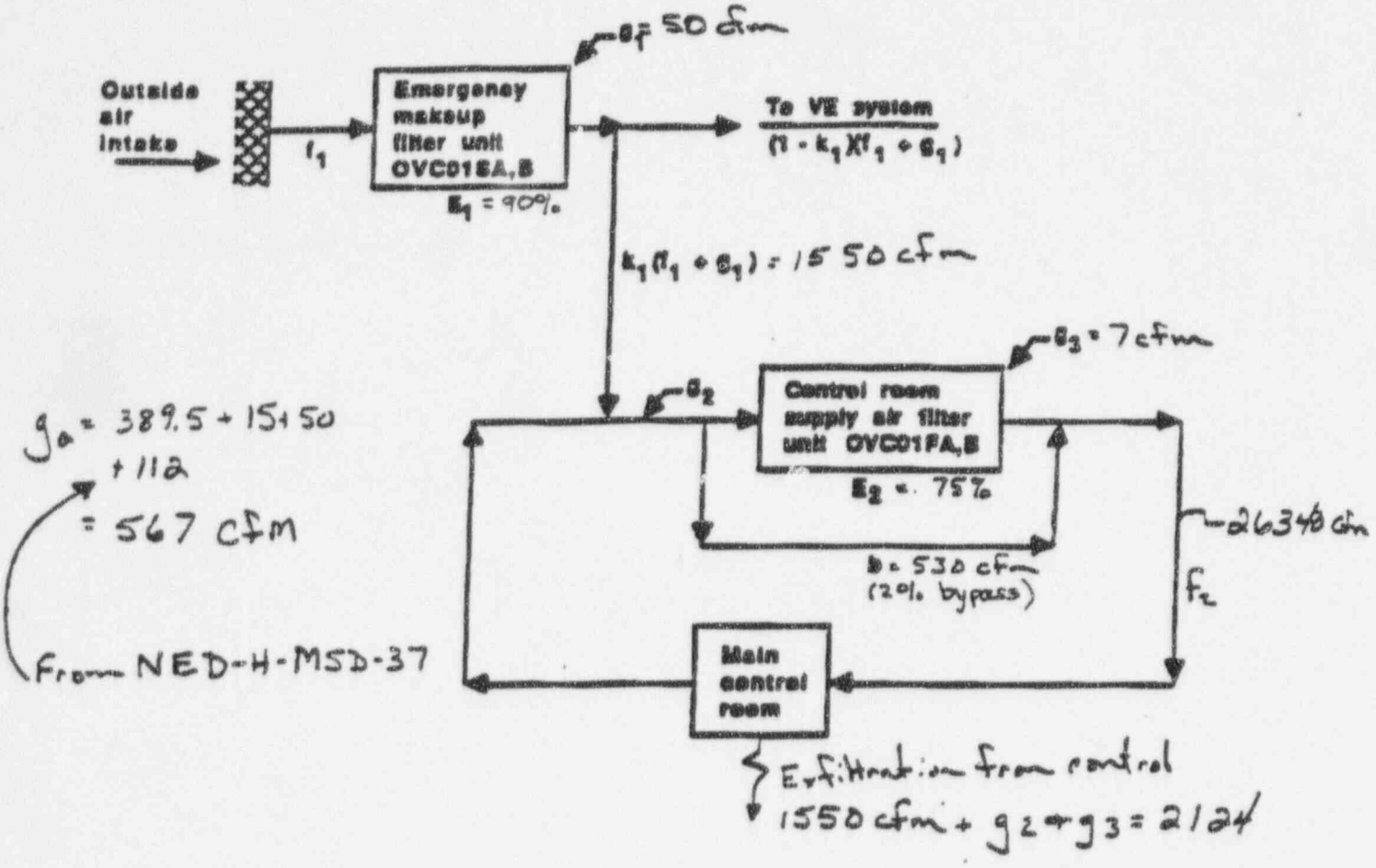
MSIV Control Room 30 Day Doses

	Contributor	Whole Body (REM)	Thyroid (REM)	Beta (REM)
1A	Base Case			
	Elemental iodine	3.75E-7	1.50E-2	2.89E-6
	Noble Gases	6.26E-2	0	8.05E-1
	Organic Iodine	2.76E-5	1.81	1.96E-4
	Resuspended Iodine	1.60E-5	1.33	1.05E-4
	TOTAL	6.26E-2	3.16	8.05E-1
2A				
	Elemental iodine	4.05E-7	1.62E-2	3.13E-6
	Noble Gases	6.29E-2	0	8.09E-1
	Organic Iodine	2.98E-5	1.96	2.12E-4
	Resuspended Iodine	1.73E-5	1.43	1.13E-4
	TOTAL	6.29E-2	3.41	8.09E-1
3A				
	Elemental iodine	4.07E-7	1.63E-2	3.14E-6
	Noble Gases	6.26E-2	0	8.06E-1
	Organic Iodine	2.99E-5	1.96	2.13E-4
	Resuspended Iodine	1.74E-5	1.44	1.14E-4
	TOTAL	6.26E-2	3.42	8.06E-1
4A				
	Elemental iodine	4.51E-7	1.81E-2	3.48E-6
	Noble Gases	6.26E-2	0	8.06E-1
	Organic Iodine	3.32E-5	2.18	2.36E-4
	Resuspended Iodine	1.93E-5	1.60	1.26E-4
	TOTAL	6.26E-2	3.80	8.06E-1
5A				
	Elemental iodine	5.38E-7	2.16E-2	4.15E-6
	Noble Gases	6.27E-2	0	8.06E-1
	Organic Iodine	3.96E-5	2.60	2.81E-4
	Resuspended Iodine	2.30E-5	1.91	1.51E-4
	TOTAL	6.27E-2	4.53	8.06E-1

Attachment 2
Summary Comparison

MSIV Control Room 30 Day Doses
(Continued)

	Contributor	*Whole Body (REM)*	*Thyroid (REM)*	*Beta (REM)*
6A				
	Elemental iodine	4.57E-7	1.83E-2	3.53E-6
	Noble Gases	6.27E-2	0	8.07E-1
	Organic Iodine	3.37E-5	2.21	2.39E-4
	Resuspended Iodine	1.96E-5	1.62	1.28E-4
	TOTAL	6.27E-2	3.85	8.07E-1
7A				
	Elemental iodine	5.46E-7	2.19E-2	4.21E-6
	Noble Gases	6.28E-2	0	8.07E-1
	Organic Iodine	4.02E-5	2.64	2.86E-4
	Resuspended Iodine	2.34E-5	1.93	1.53E-4
	TOTAL	6.28E-2	4.59	8.07E-1


g_f = 50 cfm
Outside air intake
f_1
Emergency makeup filter unit OVC01EA,B
E_1 = 90%
To VE system
$(1 - k_1)(f_1 + g_1)$
$k_1(f_1 + g_1)$ = 1550 cfm
g_3 = 7 cfm
g_2
Control room supply air filter unit OVC01FA,B
E_2 = 75%
g_a = 389.5 + 1550 + 112 = 567 cfm
From NED-H-MSD-37
b = 530 cfm (20% bypass)
26340 cfm
f_2
Main control room
Exfiltration from control
1550 cfm + g_2 + g_3 = 2124

f_1 ..... makeup airflow rate into the makeup air filter (cfm)

g_1 ..... infiltration air flow rate into the makeup air filter (cfm)

E_1 ..... filter efficiency of the makeup air filter for iodine (this is a decimal fraction, NOT percent)

k_1 ..... fraction of the airflow from the makeup air filter that is directed to the control room (this is a decimal fraction, NOT percent);

$k_1(g_1+f_1)$ ..... air flow rate from the makeup air filter to the control room recirculation loop upstream of the control room supply filter (cfm)

(g_1+f_1) ..... infiltration plus makeup air flow rates upstream of branch to control room recirculation loop (cfm);

g_2 ..... infiltration rate into the control room recirculation loop between the control room return and the control room supply filter (cfm)

b ..... air flow rate which bypasses the control room supply filter (cfm);

E_2 ..... filter efficiency of the control room supply air filter for iodine (this is a decimal fraction, NOT percent)

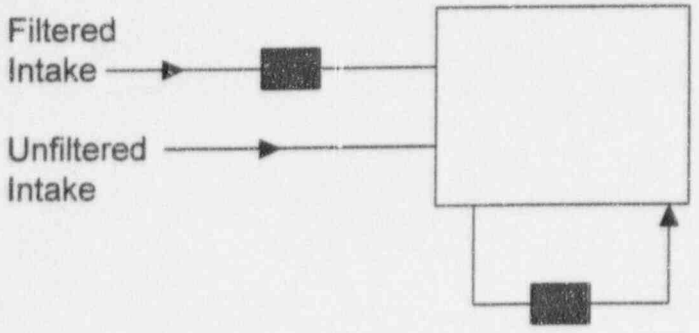
g_3 ..... infiltration rate into the control room supply air filter (cfm);

f_2 ..... ~~return~~ supply air flow rate ~~from~~ to the control room ~~to the control room supply filter (cfm)~~;

Attachment 4

CONVERSION OF LA SALLE CONTROL ROOM PARAMETERS INTO BWROG MODEL INPUT VALUES

BWROG Simple Model



LaSalle Base Case Conversion

Filtered intake:

(1) f1 (1500 cfm) treated in series by makeup filter and control room supply air filter

(2) g1 + g2 (617 cfm) treated by control room supply air filter only

Total flow = 2117 cfm = 0.999 m^3/sec.

Filter efficiency:
Makeup filter transmittance = (0.10) (1500 cfm) = 150 cfm
Supply air filter transmittance (including bypass) =
(0.98) (0.25) [150 + 617] + (0.02) [150 + 617] = 203.26 cfm

$$\text{Overall efficiency} = \frac{2117 - 203.26}{2117} = 0.904 = 90.4\%$$

Unfiltered intake: g3 = 7 cfm = 0.0033 m^3/sec

Recirculation: Flow = 26340 cfm = 12.43 m^3/sec (constant)
Filter Efficiency : (0.75) [1-0.02] = 0.735 = 73.5%

LASALLE MSIV LEAKAGE CONTROL ROOM PARAMETERS

Case #	f_1 (cfm)	g_2+g_1 (cfm)	g_3 (cfm)	b (cfm)	Filter intake (cfm)	Intake eff (%)	Unfil intake (cfm)	Recir (cfm)	Recirc eff (%)	Filter intake m^3/sec	Intake eff (%)	Unfil intake m^3/sec	Recir m^3/sec	Recirc eff (%)
1A	1500	617	7	526.66	2117	90.399%	7	26340	73.5%	0.999	90.40%	0.0033	12.43	73.5%
2A	2550	617	7	526.66	3167	92.704%	7	26340	73.5%	1.495	92.70%	0.0033	12.43	73.5%
3A	1500	617	25	526.3	2117	90.399%	25	26340	73.5%	0.999	90.40%	0.0118	12.43	73.5%
4A	1500	617	50	525.8	2117	90.399%	50	26340	73.5%	0.999	90.40%	0.0236	12.43	73.5%
5A	1500	617	100	524.8	2117	90.399%	100	26340	73.5%	0.999	90.40%	0.0472	12.43	73.5%
6A	1500	800	7	526.66	2300	89.054%	7	26340	73.5%	1.085	89.05%	0.0033	12.43	73.5%
7A	1500	1000	7	526.66	2500	87.810%	7	26340	73.5%	1.180	87.81%	0.0033	12.43	73.5%

Parameter Recirc is the same meaning as total flow to control room.

Total flow to Control Room = Filtered Intake + Unfiltered Intake + thru recir filter = 26340 cfm (Constant), or 12.4 m3/sec

Bypass is always 2% of total thru = 2% of (Recirc + Filter Intake), or 2% (26340 - Unfilter Intake)

Attachment 5

SARGENT & LUNDY ENGINEERS	EXTERNAL DESIGN INFORMATION TRANSMITTAL	DIT-LS-EXT-0041
		Page 1 of 2

Attachment 6

July 02,1993
Project No. 9066-52
(DIT-LS-EXT-0041)
WIN No. 1889

Commonwealth Edison Company
LaSalle Station - Units 1&2

EAB and LPZ Boundary Accident X/Q Values Due to a Ground Level Release
Modification No. : N/A
System Code: N/A

Mr. D. Barkman
SEC Mod Design Supervisor
Commonwealth Edison Company
LaSalle Nuclear Station
RR #1 Box 220, 2601N 21st Rd
Marseilles, Il 61341

Dear Mr. Barkman:

Enclosed are the accident atmospheric dispersion (X/Q) factors calculated for the Exclusion Area Boundary (EAB) and the Low Population Zone (LPZ) boundary. The X/Q values were determined in accordance with Regulatory Guide 1.145 methodology and represent a ground level release via the Turbine Building.

If you have any questions, please feel free to contact me at (312)269-3117.

Yours very truly,

Anthony G. Klazura

Anthony G. Klazura
Principal Engineer

AGK
Copies:
J. W. Giesaker
E. Seckinger
CECo Chron
R. A. Parson
M. Weber
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J. L. Engleman
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L. V. Jacques
W. J. Johnson
M. Kaiseruddin
ATD File

SARGENT & LUNDY ENGINEERS

EXTERNAL DESIGN INFORMATION TRANSMITTAL

DIT-LS-EXT-0041

STATUS OF INFORMATION:

X APPROVED
___ PRELIMINARY
___ REFERENCE/INFORMATION ONLY (not for design purposes)

X SAFETY RELATED
___ NON-SAFETY RELATED
___ REGULATORY RELATED

IDENTIFICATION OF THE SPECIFIC DESIGN INFORMATION TRANSMITTED AND PURPOSE OF ISSUE (List any supporting documents attached to DIT by its title, revision and/or issue date, and total number of pages for each supporting document.)

The following accident atmospheric dispersion (X/Q) factors were calculated for the LaSalle Station Exclusion Area Boundary (EAB) and Low Population Zone (LPZ) boundary due to a ground level release via the Turbine Building. The EAB was modeled as an irregularly shaped boundary. The distance between the release point and the EAB was defined as the distance from the closest point on the Turbine Building to the EAB within a 45 degree sector centered on the compass direction of interest. The LPZ boundary was modeled as a uniform boundary at a distance of 6400 meters from the release point. X/Q values were calculated following Regulatory Guide 1.145 methodology for a ground level release. Directionally dependent atmospheric dispersion factors were calculated based on 1982 through 1987 historical site meteorology for a release height of 33 feet above grade.

LaSalle Station Accident (X/Q)s : Ground Level Release

Boundary Type	Time Post Accident	(X/Q) Values (sec/m^3) (Based on RG 1.145 Methodology)
EAB	(0-2) Hr	5.1E-04
LPZ	(0-8) Hr	1.0E-05
LPZ	(8-24) Hr	6.7E-06
LPZ	(1-4) Days	2.6E-06
LPZ	(4-30) Days	6.5E-07

SOURCE OF INFORMATION

Calc. No. ATD-0282 Rev 1 Report No. N/A

Other N/A

A. G. Klazura Preparer	ATD Division	Anthony A. Klazura Preparer's Signature	07/02/93 Date
W. J. Johnson Reviewer	ATD Division	William J. Johnson Reviewer's Signature	07/02/93 Date

Attachment 7

LA SALLE EXCLUSION AREA BOUNDARY (EAB)
RADIOLOGICAL DOSE CALCULATION
(100 scfh per steam line)

LPZ X/Q (0-2 hours) = 1.10 E-05
EAB X/Q (0-2 hours) = 5.10 E-04 Ratio = 46.36

2 hour LPZ results multiplied by 46.36 to obtain EAB dose

	LPZ				*EAB*		
	WB	Thyroid	Beta		WB	Thyroid	Beta
OSEL1A	9.19 E-08	2.40 E-05	2.27 E-08		4.26 E-06	1.11 E-03	1.05 E-06
OSEL1B	0	0	0		0	0	0
OSNG1A	3.15 E-05	0	1.20 E-05		1.46 E-03	0	5.56 E-04
OSNG1B	0	0	0		0	0	0
OSOR1A	1.88 E-06	4.92 E-04	4.65 E-07		8.72 E-05	2.28 E-02	2.16 E-05
OSOR1B	0	0	0		0	0	0
RESUSP.*	0	0	0		0	0	0
Totals	3.3 E-05	5.2 E-04	1.3 E-05		1.6 E-03	2.4 E-02	5.8 E-04

*initial release occurs after 7200 seconds