SECTION "A" SCALE: 1/4"=1'-0"

PIPING ISOMETRIC SCALE: 1/4"=1'-0"

Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 7/17/2013

ANSUL
INERGEN DESIGNER
UL listed EX4613, FM/IRC Approved (A1) Z0049Ar, ULC listed Clix1191
Version: 2. 1. 2

File: Data file name: C:\Program Files\INERGEN DESIGNER\One City Center.inr with unsaved i
Job Number for Medical Mutual
Address: 1 City Ctr
Portland ME 04101

Agent Storage Conditions

Storage pressure is 2175 psia at 70 degrees Fahrenheit.
439 cubic feet of INERGEN stored in each of 3 cylinders.
Total agent in storage is 1317 cubic feet.
Time to discharge 1185 cubic feet (90% of INERGEN) is 79.6 seconds
Maximum pressure downstream of manifold orifice is 1312 psia

Concentrations

Area	Volume	95% Time (sec)	Cu Ft INERGEN	Maximum Concentration at Max. Temp.	Minimum Concentration at Min. Temp.	Requested Concentration at Min Temp.
Lan Room	1767.5	48	974.7	43.0% at 80°F	41.8% at 60°F	34.2% at 60°F
		Sea level equivalent oxygen: 12.0% at 80°F				
Above Ceiling	652.3	54	342.3	41.4% at 80°F	40.2% at 60°F	34.2% at 60°F
		Sea level equivalent oxygen: 12.3% at 80°F				

Free Vent Calculation

Area	Peak Rate	Maximum Wall Strength	Minimum Free Vent Area
Lan Room	1833.0 cfm	5.0 lbs./sq.ft.	70 sq. in.
Above Ceiling	676.5 cfm	5.0 lbs./sq.ft.	26 sq. in.

Pressure Drop Results

Sec Start	Sec End	Nominal Pipe Size	Length (ft)	Equiv Length(ft)	Elev (ft)	Tee/ Mfld	Start psia	Term psia	Flow (cfm)
1	2	1/2 40 T	0.0	38.0	0.0	MFLD	1033	1009	425.5
2	3	1 80 T	1.0	2.6	0.0	MFLD	1009	1010	425.5
3	4	1 80 T	1.0	2.6	0.0	MFLD	1010	1008	851.
4	5	1 80 T	1.0	2.6	0.0	MFLD	1008	1005	1276.4
5	6	1 80 T	0.5	2.9	0.5	MFLD	1005	1003	1276.4
6	7	ORIFICE .316 INCHES		DRILL NO. O			1003	436	1276.4

Pressure Drop Results (Continued)

Sec Start	Sec End	Nominal Pipe Size	Length (ft)	Equiv Length(ft)	Elev (ft)	Tee/ Mfld	Start psia	Term psia	Flow (cfm)
7	8	1 40 T	3.0	3.0	3.0		436	587	1276.4
8	9	1 40 T	5.8	8.4	0.0		587	581	1276.4
9	302	1/2 40 T	2.8	5.9	2.8	SIDE	581	576	330.2
9	301	1 40 T	5.0	6.7	0.5	THRU	581	581	946.3

Calculation based on 70 degree Fahrenheit pre-discharge Pipeline Temperature

Pipe and Fittings

Sec Start	Sec End	Nominal Pipe Size	Length (ft)	90's	Side Tee	Thru Tee	Unions/ Cplgs	Eql (ft)
1	2	1/2 40 T	0.0	0	0	0	0	Cyl Valve 38 ft
2	3	1 80 T	1.0	0	0	1	0	
3	4	1 80 T	1.0	0	0	1	0	
4	5	1 80 T	1.0	0	0	1	0	
5	6	1 80 T	0.5	1	0	0	0	
6	7	1 80 T		0	0	0	0	Man. Orifice
7	8	1 40 T	3.0	0	0	0	0	
8	9	1 40 T	5.8	1	0	0	0	
9	302	1/2 40 T	2.8	0	1	0	0	
9	301	1 40 T	5.0	0	0	1	0	

Nozzle Performance Summary

Nozzle Number	Nominal Pipe Size	Drill Number	Drill Diameter	Quantity (cu ft) Discharged	Area Name
302	1/2 40 T	A	0.234	342.3	Above Ceiling
301	1 40 T	W	0.386	974.7	Lan Room

Messages/Errors

ANSUL 150 bar INERGEN DESIGNER Version number 2.1.2
Calculation done on 6/20/2013 at: 1:24:17 PM

Pipe schedule selected for pipe sizes downstream of the manifold orifice is based on the maximum pipe pressure for Grade A-53B, A-106B Seamless. To determine if other grades are acceptable, verify that the maximum pipe pressures for other grades are equal to or greater than the maximum anticipated downstream pressure.

Calculation by Simplex Grinnell

CALCULATION DATA

tyco / Fire & Security / SimplexGrinnell
20 THOMAS DRIVE
WESTBROOK, ME. 04092
PHONE: (207) 842-5440
DIRECT: (207) 462-2343

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NO.	DATE	REVISION DESCRIPTION	CHGD BY

INERGEN – FIRE SUPPRESSION – SYSTEM

MEDICAL MUTUAL (LAN ROOM)
1 CENTER STREET
PORTLAND, ME. 04101

DRAWN BY: SEFP	DATE: JUNE 20, 2013
DESIGNED BY: SEFP	DATE: JUNE 20, 2013
APPROVED BY:	DATE:
PROJECT NUMBER:	
SHEET TITLE: INERGEN-FIRE SUPPRESSION-SYSTEM	
SHEET NUMBER: 2 OF 3	