

ALLEGATO 1.C.1.4.1-1
FREQUENZE BASE DEGLI EVENTI INCIDENTALI (API581, 2000)

Hazardous Event: Evento 1a - Rilascio di GNL dalla condotta che dalla banchina alimenta il collettore (in fase di scarico di una nave gasiera).

1. Parts Count

Component	Parts Count				
	Piping (m)	Flanges	Inject. point	Valves	Branches
3/4"	0	0	0	0	0
1"	0	0	0	0	0
2"	0	0	0	0	0
4"	0	0	0	0	0
6"	0	0	0	0	0
8"	0	0	0	0	0
10"	0	0	0	0	0
12"	140	0	0	4	1
16"	0	0	0	0	0
>16"	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	0	
Process Columns	0	
Chemical Reactors	0	
Filters	0	
Air Coolers	0	
Exchangers (tube side)	0	
Exchangers (shell side)	0	
Pumps	0	
Compressors	0	
Atmospheric Tanks	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	1,53E-05	4,59E-05	4,59E-06	3,06E-06	6,89E-05	100,0
Pressure vessels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Process Columns	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Reactors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Filters	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Air Coolers	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (tube side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (shell side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Pumps	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Compressors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Atmospheric Tanks	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Total	1,53E-05	4,59E-05	4,59E-06	3,06E-06	6,89E-05	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	1,53E-05	4,59E-05	4,59E-06	3,06E-06	
	22,22%	66,67%	6,67%	4,44%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	6,12E-05	7,65E-06

Hazardous Event: Evento 1b - Rilascio di GNL dal collettore fino all'ingresso dei serbatoi (in fase di scarico di una nave gasiera).

1. Parts Count

Component	Parts Count					
	Size	Piping (m)	Flanges	Inject. point	Valves	Branches
3/4"	0	0	0	0	0	0
1"	0	0	0	0	0	0
2"	0	0	0	0	0	0
4"	0	0	0	0	0	0
6"	88	0	0	7	0	0
8"	0	0	0	0	0	0
10"	0	0	0	0	0	0
12"	0	0	0	0	0	0
16"	76	0	0	0	0	7
>16"	0	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	0	
Process Columns	0	
Chemical Reactors	0	
Filters	0	
Air Coolers	0	
Exchangers (tube side)	0	
Exchangers (shell side)	0	
Pumps	0	
Compressors	0	
Atmospheric Tanks	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	6,59E-05	7,43E-05	1,66E-06	1,32E-05	1,55E-04	100,0
Pressure vessels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Process Columns	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Reactors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Filters	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Air Coolers	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (tube side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (shell side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Pumps	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Compressors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Atmospheric Tanks	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Total	6,59E-05	7,43E-05	1,66E-06	1,32E-05	1,55E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	6,59E-05	7,43E-05	1,66E-06	1,32E-05	
	6,59E-05	7,43E-05	1,66E-06	1,32E-05	
	42,53%	47,89%	1,07%	8,51%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	1,40E-04	1,49E-05

Hazardous Event:	Evento 2 - Rilascio di GNL dal collettore a valle del serbatoi, fino alla pompa di carico autocisterne
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1. Parts Count

Component	Parts Count				
	Size	Piping (m)	Flanges	Inject. point	Valves
3/4"	0	0	0	0	0
1"	0	0	0	0	0
2"	0	0	0	0	0
4"	30	0	0	4	0
6"	88	0	0	0	0
8"	0	0	0	0	0
10"	0	0	0	0	0
12"	0	0	0	0	0
16"	56	0	0	0	7
>16"	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	0	
Process Columns	0	
Chemical Reactors	0	
Filters	0	
Air Coolers	0	
Exchangers (tube side)	0	
Exchangers (shell side)	0	
Pumps	0	
Compressors	0	
Atmospheric Tanks	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	1,69E-04	1,63E-04	1,84E-06	2,83E-05	3,62E-04	100,0
Pressure vessels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Process Columns	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Reactors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Filters	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Air Coolers	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (tube side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (shell side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Pumps	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Compressors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Atmospheric Tanks	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Total	1,69E-04	1,63E-04	1,84E-06	2,83E-05	3,62E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	1,69E-04	1,63E-04	1,84E-06	2,83E-05	
	1,69E-04	1,63E-04	1,84E-06	2,83E-05	
	46,59%	45,07%	0,51%	7,83%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	3,32E-04	3,02E-05

Hazardous Event:	Evento 3 - Rilascio di GNL dalla condotta a valle delle pompe di alimentazione autocisterne fino all'attacco della manichetta
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1. Parts Count

Component	Parts Count					
	Size	Piping (m)	Flanges	Inject. point	Valves	Branches
3/4"	0	0	0	0	0	0
1"	0	0	0	0	0	0
2"	0	0	0	0	0	0
4"	95	0	0	3	0	0
6"	0	0	0	0	0	0
8"	0	0	0	0	0	0
10"	0	0	0	0	0	0
12"	0	0	0	0	0	0
16"	0	0	0	0	0	0
>16"	0	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	0	
Process Columns	0	
Chemical Reactors	0	
Filters	0	
Air Coolers	0	
Exchangers (tube side)	0	
Exchangers (shell side)	0	
Pumps	1	Pompa di carico Autocisterne P-401
Compressors	0	
Atmospheric Tanks	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	9,34E-05	6,24E-05	0,00E+00	7,28E-06	1,63E-04	1,6
Pressure vessels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Process Columns	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Reactors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Filters	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Air Coolers	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (tube side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (shell side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Pumps	9,00E-03	7,50E-04	1,50E-04	0,00E+00	9,90E-03	98,4
Compressors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Atmospheric Tanks	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Total	9,09E-03	8,12E-04	1,50E-04	7,28E-06	1,01E-02	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only)	
	9,09E-03	8,12E-04	1,50E-04	7,28E-06		(Including F _E & F _M)
	90,36%	8,07%	1,49%	0,07%		

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	9,91E-03	1,57E-04

Evento 4 - Rilascio di GNL dalla manichetta di carico autocisterne
Frequenza di Rottura Manichette Flessibili per il Carico Autocisterne

				Capacità Totale Terminale		Portata di Carico Pompe		Durata Operazione di Carico all'anno	Note	Frequenza di rottura manichette flessibili	
				m ³ /anno		m ³ /ora		ore			
				5,20E+05						eventi/ora	
									fattore 1,5 il fattore moltiplicativo 1,5 tiene conto delle fluttuazioni di portata e delle fasi di transitorio durante le operazioni di carico	9,90E-09	Rif. Process Equipmet Reliability Data (AiChE, 1985)
			%							eventi/anno	
percentuale di GNL distribuita tramite AUTOCISTERNE			100%	5,20E+05		60		8667	13000 ore dell'anno durante le quali devono lavorare le manichette	1,29E-04	

Hazardous Event:	Evento 5 - Rilascio di Gas Naturale dalle Condotte del Sistema di Gestione del BOG
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1. Parts Count

Component	Parts Count					
	Size	Piping (m)	Flanges	Inject. point	Valves	Branches
3/4"	0	0	0	0	0	0
1"	0	0	0	0	0	0
2"	0	0	0	0	0	0
4"	127	0	0	6	0	0
6"	0	0	0	0	0	0
8"	8	0	0	0	0	0
10"	270	0	0	0	0	0
12"	0	0	0	0	0	0
16"	0	0	0	0	0	0
>16"	0	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	0	
Process Columns	0	
Chemical Reactors	0	
Filters	0	
Air Coolers	0	
Exchangers (tube side)	1	Resistenza elettrica E-501
Exchangers (shell side)	0	
Pumps	0	
Compressors	0	
Atmospheric Tanks	1	Polmone GNL V-503

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	3,10E-04	3,57E-04	7,28E-05	2,80E-05	7,68E-04	70,2
Pressure vessels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Process Columns	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Reactors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Filters	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Air Coolers	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (tube side)	4,00E-05	1,00E-04	1,00E-05	6,00E-06	1,56E-04	14,3
Exchangers (shell side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Pumps	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Compressors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Atmospheric Tanks	4,00E-05	1,00E-04	1,00E-05	2,00E-05	1,70E-04	15,5
Total	3,90E-04	5,57E-04	9,28E-05	5,40E-05	1,09E-03	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only)	
	3,90E-04	5,57E-04	9,28E-05	5,40E-05		(Including F _E & F _M)
	35,65%	50,93%	8,49%	4,94%		

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	9,47E-04	1,47E-04

Hazardous Event:	Evento 6 - Rilascio GNL da Serbatoio di Accumulo V-515
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1. Parts Count

Component	Parts Count				
	Size	Piping (m)	Flanges	Inject. point	Valves
3/4"	0	0	0	0	0
1"	0	0	0	0	0
2"	10	0	0	0	0
4"	0	0	0	0	0
6"	0	0	0	0	0
8"	0	0	0	0	0
10"	0	0	0	0	0
12"	0	0	0	0	0
16"	0	0	0	0	0
>16"	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	1	Serbatoio di Accumulo V-515
Process Columns	0	
Chemical Reactors	0	
Filters	0	
Air Coolers	0	
Exchangers (tube side)	0	
Exchangers (shell side)	0	
Pumps	0	
Compressors	0	
Atmospheric Tanks	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	9,84E-05	0,00E+00	0,00E+00	1,97E-05	1,18E-04	43,1
Pressure vessels	4,00E-05	1,00E-04	1,00E-05	6,00E-06	1,56E-04	56,9
Process Columns	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Reactors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Filters	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Air Coolers	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (tube side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (shell side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Pumps	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Compressors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Atmospheric Tanks	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Total	1,38E-04	1,00E-04	1,00E-05	2,57E-05	2,74E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	1,38E-04	1,00E-04	1,00E-05	2,57E-05	
	50,49%	36,48%	3,65%	9,38%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	2,38E-04	3,57E-05

Hazardous Event:	Evento 7 - Rilascio di GNL dalla Condotta di Carico Bettoline
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1. Parts Count

Component	Parts Count					
	Size	Piping (m)	Flanges	Inject. point	Valves	Branches
3/4"	0	0	0	0	0	0
1"	0	0	0	0	0	0
2"	0	0	0	0	0	0
4"	0	0	0	0	0	0
6"	123	0	0	3	0	0
8"	0	0	0	0	0	0
10"	0	0	0	0	0	0
12"	0	0	0	0	0	0
16"	0	0	0	0	0	0
>16"	0	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	0	
Process Columns	0	
Chemical Reactors	0	
Filters	0	
Air Coolers	0	
Exchangers (tube side)	0	
Exchangers (shell side)	0	
Pumps	2	Pompe di carico bettoline P-301A/B
Compressors	0	
Atmospheric Tanks	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	5,37E-05	5,37E-05	0,00E+00	1,07E-05	1,18E-04	1,2
Pressure vessels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Process Columns	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Reactors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Filters	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Air Coolers	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (tube side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (shell side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Pumps	9,00E-03	7,50E-04	1,50E-04	0,00E+00	9,90E-03	98,8
Compressors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Atmospheric Tanks	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Total	9,05E-03	8,04E-04	1,50E-04	1,07E-05	1,00E-02	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only)	
	9,05E-03	8,04E-04	1,50E-04	1,07E-05		(Including F _E & F _M)
	90,37%	8,02%	1,50%	0,11%		

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	9,86E-03	1,61E-04

Hazardous Event:	Evento 8 - Rilascio di GNL dal Braccio di Carico e della Condotta sulla Banchina di Scarico/Carico
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1. Parts Count

Component	Parts Count				
	Size	Piping (m)	Flanges	Inject. point	Valves
3/4"	0	0	0	0	0
1"	0	0	0	0	0
2"	0	0	0	0	0
4"	0	0	0	0	0
6"	0	0	0	0	0
8"	0	0	0	0	0
10"	30	0	0	0	0
12"	20	0	0	0	0
16"	0	0	0	0	0
>16"	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	0	
Process Columns	0	
Chemical Reactors	0	
Filters	0	
Air Coolers	0	
Exchangers (tube side)	0	
Exchangers (shell side)	0	
Pumps	0	
Compressors	0	
Atmospheric Tanks	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	2,62E-05	4,92E-05	9,83E-06	3,28E-06	8,85E-05	100,0
Pressure vessels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Process Columns	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Reactors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Filters	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Air Coolers	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (tube side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (shell side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Pumps	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Compressors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Atmospheric Tanks	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Total	2,62E-05	4,92E-05	9,83E-06	3,28E-06	8,85E-05	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	2,62E-05	4,92E-05	9,83E-06	3,28E-06	
	29,63%	55,56%	11,10%	3,70%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	7,54E-05	1,31E-05

Hazardous Event:	Evento 9 - Rilascio di Gas Naturale dalla Condotta di Ritorno Vapori (in fase di scarico o carico GNL)
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1. Parts Count

Component	Parts Count					
	Size	Piping (m)	Flanges	Inject. point	Valves	Branches
3/4"	0	0	0	0	0	0
1"	0	0	0	0	0	0
2"	0	0	0	0	0	0
4"	0	0	0	0	0	0
6"	0	0	0	0	0	0
8"	120	0	0	3	0	0
10"	0	0	0	0	0	0
12"	0	0	0	0	0	0
16"	0	0	0	0	0	0
>16"	0	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	0	
Process Columns	0	
Chemical Reactors	0	
Filters	0	
Air Coolers	0	
Exchangers (tube side)	0	
Exchangers (shell side)	0	
Pumps	0	
Compressors	0	
Atmospheric Tanks	1	KO Drum V-101

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	3,94E-05	3,94E-05	1,05E-05	2,62E-06	9,18E-05	35,1
Pressure vessels	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Process Columns	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Reactors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Filters	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Air Coolers	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (tube side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Exchangers (shell side)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Pumps	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Compressors	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,0
Atmospheric Tanks	4,00E-05	1,00E-04	1,00E-05	2,00E-05	1,70E-04	64,9
Total	7,94E-05	1,39E-04	2,05E-05	2,26E-05	2,62E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only)	
	7,94E-05	1,39E-04	2,05E-05	2,26E-05		(Including F _E & F _M)
	30,31%	53,23%	7,82%	8,64%		

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	2,19E-04	4,31E-05