

ALLEGATO 1.C.1.5.1-2
FREQUENZA BASE EVENTI INCIDENTALI – PARTS COUNT

Frequenza di Rottura Manichette Flessibili per il Carico F/C e ATB

Capacità navi	Numero navi	Capacità Totale Terminale	Capacità Totale Terminale Ufficiale	Rif. 14-007-H23 cap 3,7	Portata di Carico Pompe	Durata Operazione di Carico all'anno	Note	Frequenza di rottura manichette flessibili	Rif. Process Equipmet Reliability Data (AiChE, 1985)
m3	navi/anno	m3/anno	m3/anno		m3/ora	ore		ev/ora	
125000	22	2,75E+06	2,67E+06					9,90E-09	
								ev/anno	
								8,67E-05	
percentuale di GNL distribuita tramite FC		30%	8,25E+05	8,01E+05	50	16020	ore dell'anno durante le quali devono lavorare le manichette	1,59E-04	
percentuale di GNL distribuita tramite ATB		10%	2,75E+05	2,67E+05	50	5340	ore dell'anno durante le quali devono lavorare le manichette	5,29E-05	

Hazardous Event:	Evento 1a - Rilascio di GNL durante scarico nave gasiera
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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"	0	0	0	0	0	0
10"	0	0	0	0	0	0
12"	0	0	0	0	0	0
16"	30	0	0	3	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	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	4,92E-06	9,84E-06	9,84E-07	9,84E-07	1,67E-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	4,92E-06	9,84E-06	9,84E-07	9,84E-07	1,67E-05	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	4,92E-06	9,84E-06	9,84E-07	9,84E-07	
	4,92E-06	9,84E-06	9,84E-07	9,84E-07	
	29,41%	58,82%	5,88%	5,88%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	1,48E-05	1,97E-06

Hazardous Event:	Evento 1b - Rilascio di GNL durante 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"	0	0	0	0	0	0
8"	30	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	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	1,48E-05	1,48E-05	3,93E-06	9,84E-07	3,44E-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	1,48E-05	1,48E-05	3,93E-06	9,84E-07	3,44E-05	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	1,48E-05	1,48E-05	3,93E-06	9,84E-07	
	42,86%	42,86%	11,41%	2,86%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	2,95E-05	4,91E-06

Hazardous Event: Evento 2 - Rilascio di GNL dalla condotta di trasferimento dal pontile al limite di impianto e rilascio di gas naturale dalla condotta di ritorno vapori.

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"	0	0	0	0	0
12"	0	0	0	0	0
16"	0	0	0	0	0
>16"	1080	2	0	2	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	7,09E-05	2,36E-04	2,36E-05	1,18E-05	3,43E-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	7,09E-05	2,36E-04	2,36E-05	1,18E-05	3,43E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	7,09E-05	2,36E-04	2,36E-05	1,18E-05	
	20,71%	68,95%	6,90%	3,45%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	3,07E-04	3,54E-05

Hazardous Event:	Evento 3 - Rilascio di GNL dalla condotta che dal limite di impianto alimenta i serbatoi di stoccaggio.
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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"	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"	250	2	0	5	1	

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	1.64E-05	5.47E-05	5.47E-06	2.73E-06	7.93E-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	1.64E-05	5.47E-05	5.47E-06	2.73E-06	7.93E-05	100.0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	1.64E-05	5.47E-05	5.47E-06	2.73E-06	
	20.71%	68.95%	6.90%	3.45%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	7.11E-05	8.20E-06

Hazardous Event:	Evento 4 - Rilascio GNL dalla condotta che collega le pompe di bassa pressione all'ingresso del Recondenser.
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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"	30	0	0	4	0	0
8"	0	0	0	0	0	0
10"	70	0	0	2	2	0
12"	0	0	0	0	0	0
16"	15	2	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	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	3,74E-05	4,75E-05	6,61E-06	5,95E-06	9,75E-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	3,74E-05	4,75E-05	6,61E-06	5,95E-06	9,75E-05	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	3,74E-05	4,75E-05	6,61E-06	5,95E-06	
	38,37%	48,75%	6,77%	6,11%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	8,49E-05	1,26E-05

Hazardous Event:	Evento 5 - Rilascio di GNL dalla condotta che collega le pompe AP ai vaporizzatori (ORVs)
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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"	35	0	0	6	0	0
8"	70	1	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	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	4,59E-05	4,59E-05	6,11E-06	6,12E-06	1,04E-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	4,59E-05	4,59E-05	6,11E-06	6,12E-06	1,04E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	4,59E-05	4,59E-05	6,11E-06	6,12E-06	
	44,12%	44,12%	5,88%	5,88%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	9,18E-05	1,22E-05

Hazardous Event:	Evento 6 - Rilascio di gas metano dalla condotta che collega gli ORVs alla stazione di misura
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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"	50	0	0	2	0	0
10"	45	1	0	6	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	2	
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	3,12E-05	3,85E-05	1,03E-05	2,57E-06	8,25E-05	3,7
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	1,80E-03	2,00E-04	1,00E-04	2,00E-05	2,12E-03	96,3
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	1,83E-03	2,39E-04	1,10E-04	2,26E-05	2,20E-03	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	1,83E-03	2,39E-04	1,10E-04	2,26E-05	
	83,14%	10,83%	5,01%	1,02%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	2,07E-03	1,33E-04

Hazardous Event:	Evento 7 - Rilascio gas naturale dalla condotta in mandata ai compressori 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"	0	0	0	0	0	0
6"	100	0	0	6	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	1	V-512
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	4,37E-05	4,37E-05	0,00E+00	8,73E-06	9,61E-05	38,1
Pressure vessels	4,00E-05	1,00E-04	1,00E-05	6,00E-06	1,56E-04	61,9
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	8,37E-05	1,44E-04	1,00E-05	1,47E-05	2,52E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	8,37E-05	1,44E-04	1,00E-05	1,47E-05	
	33,19%	57,00%	3,97%	5,85%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	2,27E-04	2,47E-05

Hazardous Event:	Evento 8a - Rilascio di GNL nel bacino di raccolta presso il pontile
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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"	0	0	0	0	0
12"	0	0	0	0	0
16"	270	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	8,86E-05	1,77E-04	1,77E-05	1,77E-05	3,01E-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	8,86E-05	1,77E-04	1,77E-05	1,77E-05	3,01E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	8,86E-05	1,77E-04	1,77E-05	1,77E-05	
	29,41%	58,82%	5,88%	5,88%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	2,66E-04	3,54E-05

Hazardous Event:

Evento 8b - Rilascio di GNL nel bacino presso l'area di processo

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"	80	0	0	0	0	0
8"	250	0	0	10	0	0
10"	0	0	0	0	0	0
12"	0	0	0	0	0	0
16"	0	0	0	5	0	0
>16"	0	0	0	0	0	0

Equipment Item	No	Description
Pressure Vessels	3	Questa tipologia di pompe sono state considerate come pressure vessels
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	1,87E-04	1,87E-04	2,18E-05	2,64E-05	4,22E-04	47,4
Pressure vessels	1,20E-04	3,00E-04	3,00E-05	1,80E-05	4,68E-04	52,6
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	3,07E-04	4,87E-04	5,18E-05	4,44E-05	8,90E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	3,07E-04	4,87E-04	5,18E-05	4,44E-05	
	34,48%	54,71%	5,82%	4,99%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	7,94E-04	9,63E-05

Hazardous Event:	Evento 8c - Rilascio di GNL nel bacino presso l'area stoccaggio
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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"	50	0	0	2	0	0
8"	0	0	0	0	0	0
10"	80	0	0	4	0	0
12"	80	0	0	4	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	0	

2. Release Frequencies (Events/yr)

Item	Hole Sizes				All Sizes	% of Total Frequency
	1/4"	1"	4"	Full Bore		
Piping	4,81E-05	7,43E-05	9,61E-06	7,87E-06	1,40E-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	4,81E-05	7,43E-05	9,61E-06	7,87E-06	1,40E-04	100,0

Release frequency (events/yr)	1/4"	1"	4"	Full Bore	(including F _E Only) (Including F _E & F _M)
	4,81E-05	7,43E-05	9,61E-06	7,87E-06	
	34,37%	53,13%	6,87%	5,62%	

Total Release frequency (events/yr)	1/4" + 1"	4"+Full Bore
	1,22E-04	1,75E-05