

# Early Pool Fire Report

## Workspace: 72341-1RiempimFSRU

### Study: Riempimento FSRU-ME4

### Equipment Item: 3R Collettore GNL riempimento FSRU

72341-1RiempimFSRU\Riempimento FSRU-ME4\3R Collettore GNL riempimento FSRU

Material	GAS NATURALE	
East	0	m
North	0	m

### Scenario (Leak) : 120mm

72341-1RiempimFSRU\Riempimento FSRU-ME4\3R Collettore GNL riempimento FSRU\120mm

### Weather: Category 2/F

Wind speed [m/s]	2
Pasquill stability	F stable - night with moderate clouds and light/moderate wind
Atmospheric temperature [degC]	25
Relative humidity [fraction]	0,75
Solar radiation flux [kW/m2]	0,5

### Pool fire model results

Early pool fires are assumed to occur at a time when the initial PVAP rainout rate equals the pool fire burn rate, unless the thus calculated pool fire radius exceeds the maximum PVAP pool radius. For the latter case the early pool fire radius is assumed to be the maximum PVAP pool radius. The pool fire centre is located at the rainout point.

### INPUT DATA

Correlation Type: Thomas / Johnson

Surface type	Land	
Pool fire elevation	0	m
Maximum exposure duration	20	s
Downwind distance of liquid rainout	0	m

Use two zone pool fire model

No

## OUTPUT DATA

Pool fire diameter	43,7999	m
Downwind distance of pool fire centre	0	m
Pool fire flame length	63,0856	m
Angle between pool fire axis and vertical	24,9987	deg
Flame emissive power	214,126	kW/m2
Total burn rate	145,451	kg/s
Radiative fraction	0,301917	fraction

## Radiation Intensity Ellipse Results

### INPUT DATA

For ellipses 'observer direction' refers to whether inclination is 'fixed' or 'variable'. Orientation is always variable.

Observer direction	Variable	
Exposure duration	20	s
Height of interest	1,7	m

## OUTPUT DATA

### Radiation intensity

Incident radiation [kW/m2]	Lethality [%]	View factor	Probability	Dose [(W/m2)^ProbN.s]	Hazard information	Ellipse half-length [m]	Ellipse half-width [m]	Ellipse centre downwind distance [m]	Effect downwind distance [m]	Ellipse area [m2]
3	0	0,0140104	-1,38321	865.119	-	193,247	196,78	19,0547	212,302	119466
5	0,00017	0,023	0,360	1.709.491	-	151,	154,	18,781	170,52	7368

	4704	3507	367			738	571	5		3,8
7	0,02405	0,032	1,508	2.677.313	-	129,	131,	18,973	148,36	5337
		691	83			388	316	8	2	7,8
12,5	6,52536	0,058	3,487	5.800.162	-	97,4	97,8	18,874	116,33	2997
		3767	89			63	823	5	7	0,5
37,5	98,7381	0,175	7,237	25.094.924	-	53,0	51,0	14,663	67,715	8507
		13	73			524	434	3	7	,35

## Radiation v Distance Results

### INPUT DATA

Maximum distance	212,302	m
Angle from wind direction	0	deg
Observer direction	Variable	
Height of interest	<b>1,7</b>	m

### OUTPUT DATA

Downwind distance [m]	Maximum incident radiation [kW/m2]	Lethality level [fraction]
0	214,126	1
4,33269	214,126	1
8,66537	214,126	1
12,9981	214,126	1
17,3307	214,126	1
21,6634	214,126	1
25,9961	140,726	1
30,3288	107,642	1
34,6615	89,7679	1
38,9942	77,6285	0,999999
43,3269	68,4324	0,999991
47,6596	61,3759	0,999956
51,9922	55,1864	0,999812
56,3249	49,5775	0,99929
60,6576	44,563	0,997649
64,9903	40,0774	0,993142
69,323	36,062	0,982322

73,6557	32,4687	0,959595
77,9884	29,2571	0,917812
82,3211	26,3911	0,850507
86,6537	23,8375	0,755298
90,9864	21,5652	0,636574
95,3191	19,5448	0,505406
99,6518	17,749	0,376223
103,984	16,1526	0,262024
108,317	14,7324	0,170744
112,65	13,4678	0,104276
116,983	12,3402	0,0598518
121,315	11,3331	0,0324015
125,648	10,4319	0,0166095
129,981	9,62395	0,00809554
134,313	8,89806	0,00376722
138,646	8,24447	0,00168048
142,979	7,6547	0,000721359
147,311	7,12134	0,000299058
151,644	6,63792	0,000120149
155,977	6,19881	4,69253E-05
160,309	5,79909	1,78683E-05
164,642	5,43445	6,65125E-06
168,975	5,10651	2,46815E-06
173,307	4,81551	9,31668E-07
177,64	4,54716	3,46401E-07
181,973	4,29932	1,2707E-07
186,306	4,07005	4,60585E-08
190,638	3,85764	1,65189E-08
194,971	3,66055	0
199,304	3,47741	0
203,636	3,30699	0
207,969	3,14818	0
212,302	3	0

## Weather: Category 5/D

Wind speed [m/s]	5
Pasquill stability	D neutral - little sun and high wind or overcast/windy night
Atmospheric temperature [degC]	25
Relative humidity [fraction]	0,75
Solar radiation flux [kW/m2]	0,5

## Pool fire model results

Early pool fires are assumed to occur at a time when the initial PVAP rainout rate equals the pool fire burn rate, unless the thus calculated pool fire radius exceeds the maximum PVAP pool radius. For the latter case the early pool fire radius is assumed to be the maximum PVAP pool radius. The pool fire centre is located at the rainout point.

### INPUT DATA

Correlation Type: Thomas / Johnson

Surface type	Land	
Pool fire elevation	0	m
Maximum exposure duration	20	s
Downwind distance of liquid rainout	0	m
Use two zone pool fire model	No	

### OUTPUT DATA

Pool fire diameter	43,7999	m
Downwind distance of pool fire centre	0	m
Pool fire flame length	63,0856	m
Angle between pool fire axis and vertical	42,5431	deg
Flame emissive power	214,126	kW/m2
Total burn rate	145,451	kg/s
Radiative fraction	0,301917	fraction

## Radiation Intensity Ellipse Results

### INPUT DATA

For ellipses 'observer direction' refers to whether inclination is 'fixed' or 'variable'. Orientation is always variable.

Observer direction	Variable	
Exposure duration	20	s
Height of interest	<b>1,7</b>	m

## OUTPUT DATA

### Radiation intensity

Incident radiation [kW/m <sup>2</sup> ]	Lethality [%]	View factor	Probability	Dose [(W/m <sup>2</sup> ) <sup>Pr</sup> obitN.s]	Hazard information	Ellipse half-length [m]	Ellipse half-width [m]	Ellipse centre downwind distance [m]	Effect downwind distance [m]	Ellipse area [m <sup>2</sup> ]
3	0	0,014 0104	- 1,383 21	865.119	-	184,022	193,725	30,219 2	214,24 1	1119 97
5	0,00017 4704	0,023 3507	0,360 367	1.709.491	-	145,681	153,137	29,971 2	175,65 2	7008 6,3
7	0,02405 691	0,032 83	1,508 83	2.677.313	-	124,753	130,879	29,626 5	154,37 9	5129 4,5
12,5	6,52536 3767	0,058 3767	3,487 89	5.800.162	-	95,0363	99,0543	28,384 1	123,42	2957 4,2
37,5	98,7381 13	0,175 73	7,237 73	25.094.924	-	57,2401	54,6937	23,834 6	81,074 6	9835 ,28

### Radiation v Distance Results

#### INPUT DATA

Maximum distance	214,241	m
Angle from wind direction	0	deg
Observer direction	Variable	
Height of interest	<b>1,7</b>	m

#### OUTPUT DATA

Downwind distance [m]	Maximum incident radiation [kW/m <sup>2</sup> ]	Lethality level [fraction]
0	214,126	1
4,37227	214,126	1
8,74455	214,126	1
13,1168	214,126	1
17,4891	214,126	1
21,8614	214,126	1
26,2336	147,073	1
30,6059	119,401	1
34,9782	103,342	1
39,3505	91,3895	1
43,7227	82,6852	1
48,095	75,0282	0,999998
52,4673	69,0242	0,999992
56,8396	63,5298	0,999973
61,2118	58,8639	0,999921
65,5841	54,9313	0,9998
69,9564	49,9619	0,999352
74,3287	44,8698	0,997815
78,7009	39,9985	0,993012
83,0732	35,4886	0,979797
87,4455	31,4035	0,948676
91,8178	27,7608	0,887111
96,19	24,5491	0,78572
100,562	21,7396	0,646841
104,935	19,294	0,48782
109,307	17,1709	0,334163
113,679	15,3498	0,208652
118,051	13,9818	0,129298
122,424	12,76	0,0746736
126,796	11,6696	0,0403405
131,168	10,6963	0,0204763
135,54	9,82673	0,00981333
139,913	9,04884	0,00446271

144,285	8,3517	0,00193521
148,657	7,72569	0,000803975
153,03	7,16234	0,000321408
157,402	6,65424	0,000124151
161,774	6,19491	4,65109E-05
166,146	5,77873	1,69577E-05
170,519	5,40077	6,0359E-06
174,891	5,05674	2,10335E-06
179,263	4,74291	7,19425E-07
183,636	4,456	2,42086E-07
188,008	4,19315	8,03095E-08
192,38	3,95185	2,63143E-08
196,752	3,7299	8,53062E-09
201,125	3,52536	0
205,497	3,3365	0
209,869	3,16183	0
214,241	2,99999	0



