

Early Pool Fire Report

Workspace: 72438-1RiempFSRU-1R

Study: Riempimento FSRU-ME4

Equipment Item: 1Rc Meteo avverso+ERS

72438-1RiempFSRU-1R\Riempimento FSRU-ME4\1Rc Meteo avverso+ERS

Material	GAS NATURALE	
East	0	m
North	0	m

Scenario (User defined source) : 300mm-Q254,4

72438-1RiempFSRU-1R\Riempimento FSRU-ME4\1Rc Meteo avverso+ERS\300mm-Q254,4

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	46,9368	m
Downwind distance of pool fire centre	0	m
Pool fire flame length	66,0177	m
Angle between pool fire axis and vertical	24,5893	deg
Flame emissive power	208,639	kW/m ²
Total burn rate	166,309	kg/s
Radiative fraction	0,291685	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/m ²]	Lethality [%]	View factor	Probability	Dose [(W/m ²) ^{Pr} obitN.s]	Hazard information	Ellipse half-length [m]	Ellipse half-width [m]	Ellipse centre downwind distance [m]	Effect downwind distance [m]	Ellipse area [m ²]
3	0	0,0143789	-1,38321	865.119	-	201,763	205,357	19,6598	221,423	130167
5	0,000174704	0,0239648	0,360367	1.709.491	-	158,465	161,339	19,389	177,854	80319,5
7	0,02405	0,033	1,508	2.677.313	-	135,	137,	19,651	154,84	5821



		5508	83				19	079		1	9,2
12,5	6,52536	0,059	3,487	5.800.162	-		101,	102,	19,525	121,33	3267
		9121	89				805	166	2		5,5
37,5	98,7381	0,179	7,237	25.094.924	-		55,2	53,1	15,028	70,297	9235
		736	73				694	875		3	,15

Radiation v Distance Results

INPUT DATA

Maximum distance	221,423	m
Angle from wind direction	0	deg
Observer direction	Variable	
Height of interest	1,7	m

OUTPUT DATA

Downwind distance [m]	Maximum incident radiation [kW/m2]	Lethality level [fraction]
0	208,639	1
4,51884	208,639	1
9,03768	208,639	1
13,5565	208,639	1
18,0754	208,639	1
22,5942	208,639	1
27,113	143,207	1
31,6319	108,404	1
36,1507	88,953	1
40,6695	76,8256	0,999999
45,1884	67,7511	0,99999
49,7072	60,6896	0,999948
54,2261	54,6092	0,999785
58,7449	49,0935	0,999203
63,2637	44,1631	0,997413
67,7826	39,7521	0,992591
72,3014	35,8013	0,981215
76,8203	32,263	0,957674



81,3391	29,0972	0,914937
85,8579	26,2688	0,846788
90,3768	23,7456	0,751136
94,8956	21,4975	0,632541
99,4144	19,4963	0,502025
103,933	17,7156	0,373781
108,452	16,1308	0,260526
112,971	14,7196	0,169992
117,49	13,4619	0,104004
122,009	12,3395	0,0598276
126,527	11,3362	0,0324705
131,046	10,4379	0,0166914
135,565	9,63209	0,00815964
140,084	8,90768	0,00380884
144,603	8,25511	0,00170445
149,122	7,666	0,000734007
153,641	7,13301	0,000305283
158,159	6,64976	0,000123043
162,678	6,21067	4,82078E-05
167,197	5,81084	1,84137E-05
171,716	5,44602	6,87508E-06
176,235	5,11245	2,51528E-06
180,754	4,81429	9,27691E-07
185,272	4,54625	3,45181E-07
189,791	4,29865	1,26708E-07
194,31	4,06957	4,59554E-08
198,829	3,8573	1,64908E-08
203,348	3,66033	0
207,867	3,47727	0
212,385	3,30691	0
216,904	3,14815	0
221,423	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	46,6864	m
Downwind distance of pool fire centre	0	m
Pool fire flame length	65,7709	m
Angle between pool fire axis and vertical	42,1436	deg
Flame emissive power	208,636	kW/m2
Total burn rate	164,531	kg/s
Radiative fraction	0,292091	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/m ²]	Lethality [%]	View factor	Probability	Dose [(W/m ²) ^{Pr} obitN.s]	Hazard information	Ellipse half-length [m]	Ellipse half-width [m]	Ellipse centre downwind distance [m]	Effect downwind distance [m]	Ellipse area [m ²]
3	0	0,014 3791	- 1,383 21	865.119	-	191, 463	201, 404	31,325 3	222,78 9	1211 45
5	0,00017 4704	0,023 9652	0,360 367	1.709.491	-	151, 588	159, 245	31,065	182,65 3	7583 6,9
7	0,02405	0,033 5513	1,508 83	2.677.313	-	129, 806	136, 119	30,699 6	160,50 6	5550 8,9
12,5	6,52536	0,059 913	3,487 89	5.800.162	-	98,8 463	103, 024	29,381 1	128,22 7	3199 2,5
37,5	98,7381	0,179 739	7,237 73	25.094.924	-	59,4 811	56,8 139	24,573 1	84,054 2	1061 6,6

Radiation v Distance Results

INPUT DATA

Maximum distance	222,789	m
Angle from wind direction	0	deg
Observer direction	Variable	
Height of interest	1,7	m

OUTPUT DATA

Downwind distance [m]	Maximum incident radiation [kW/m ²]	Lethality level [fraction]
0	208,636	1
4,54671	208,636	1
9,09342	208,636	1
13,6401	208,636	1
18,1868	208,636	1
22,7335	208,636	1
27,2803	148,584	1
31,827	118,776	1
36,3737	101,86	1
40,9204	89,8046	1
45,4671	81,172	0,999999
50,0138	73,9438	0,999997
54,5605	67,9639	0,99999
59,1072	62,1255	0,999963
63,6539	58,0689	0,999904
68,2006	54,1623	0,999761
72,7474	49,3846	0,999257
77,2941	44,4421	0,99758
81,8408	39,6944	0,992489
86,3875	35,2837	0,978811
90,9342	31,2753	0,947189
95,4809	27,69	0,885433
100,028	24,5199	0,784532
104,574	21,7395	0,646836
109,121	19,3136	0,489206
113,668	17,2034	0,336514
118,214	15,3698	0,209926
122,761	13,9409	0,127201
127,308	12,7292	0,0735183
131,855	11,6465	0,0397579
136,401	10,679	0,0202056
140,948	9,81386	0,00969665



145,495	9,03928	0,0044158
150,041	8,34464	0,00191752
154,588	7,72051	0,000797695
159,135	7,15858	0,000319302
163,682	6,65154	0,000123482
168,228	6,19302	4,631E-05
172,775	5,77742	1,69006E-05
177,322	5,39989	6,02062E-06
181,868	5,05618	2,09954E-06
186,415	4,74257	7,18558E-07
190,962	4,45582	2,41913E-07
195,509	4,19307	8,02828E-08
200,055	3,95184	2,63129E-08
204,602	3,72992	8,53164E-09
209,149	3,52539	0
213,695	3,33653	0
218,242	3,16184	0
222,789	2,99998	0