Table 2 - Consequence Analysis: Raffinate System with Reboiler

CONSEQUENCE SUMMARY

RAST Version 2 *Date: 12/1/2019*

Loss Event for: Distillation; Rafinatte Splitter Containing Pentane (n-) : Overfill Release

Explosion Summary:

VCE or Building Explosion Energy, kcal	2.4E+07
VCE or Building Explosion Distance to 1 psi Overpressure, m	288.5
Maximum Distance to LFL Concentration, m	202.1
Blast Overpressure at Center of Occupied Building 1, psi	3.2
Blast Overpressure at Center of Occupied Building 2, psi	0.0
Distance to Severe Thermal Radiation Impact, m	
Rupture Explosion Energy, kcal	
Distance to Direct Blast Impact (10 psi), m	
Maximum Fragment Range, m	
Rupture Distance to 1 psi Overpressure, m	
Rupture Overpressure at Center of Occupied Building 1, psi	0.0
Rupture Overpressure at Center of Occupied Building 2, psi	0.0

Probability of Ignition (POI)

Potential Explosion Impact to Occupied Building

Probability of Explosion (POX)

Incident Outcome and Consequence Summary:

Impact Assessment with Personnel routinely in the immediate area	Exceeds Threshold Criteria	**LOPA Tolerable Frequency Factors Based** *Estimated Number of People Impacted*
Offsite Toxic Impact based on Toxic Integration Method and 1000 m to Fence Line	Yes	**NA**
Onsite Toxic Impact based on Distance to LC-50 Concentration of 43 m		**NA**
Outdoor Toxic Exposure Duration 600 sec		
Onsite Flash Fire Impact based on Distance to 0.5 LFL Concentration of 286 m		**5**
Chemical Exposure based on Dermal or Thermal Hazards and Spray Distance of 0 m		**NA**
Onsite Direct Blast Impact based on Distance to 10 psi of 0 m		
Onsite Thermal Radation Impact based on Distance from Fireball of 0 m		
Occupied Building Toxic Impact		**NA**
Number of Potential Serious In		
Number of Potential Serious In		
Occupied Building Impact from Vapor Cloud Explosion	Yes	**6**
Number of Potential Serious Impacts for Building 1: 18 people		
Number of Potential Serious Impacts for Building 2: 0 people		

Step 4
(Worst Case Outcome)