ANNEXURE-IX
POOL FIRE CALCULATION SHEET

A. Radiation Intensity (kW/m²) **RI** - 37.5, 12.5, 4.5, 1.6

B. Rate of burning (m/s)

*y= (92.6e^(-0.0043TB)*Mol.wt/p)*(10^-7/6)*

where y = Burning velocity (m/s)
Mol.wt = Molecular weight (kg/kgmol)
p = liquid specific gravity
TB = Normal boiling point, deg.F

C. Pool Size (m)

1. Maximum diameter of pool (m)

D_{max} *=1.7892((V^2/y)*((g/Cd)^0.5)^(2/11)*

Where D_{max} = Maximum diameter of pool of a instantaneous release (m)
V = Volume of liquid (m^3)
y =Burning velocity (m/s)
g = Accelaration due to gravity (9.81 m/s^2)
Cd = Ground friction Co-efficient (0.5 for general use)

2. Pool Radius (m)

Rp $=D_{max}/2$

3. Time to reach maximum pool diameter for instantaneous release (Seconds)

t_{max} *= 0.5249*((V^3*Cd^2)/(g^2*y^7))^(1/11)*

D. Emissive Power of A flame (kW/m²)

*Ep = '-0.313*TB+117*

Where
Ep = Effective emissive power (kW/m^2)
TB = Normal boiling point, deg.F

E. Heat received at a particular distance (m)

X = 1.079(Ep/Qi)^0.57*Rp*

Where
X = Distance (m)
Ep = Effective emissive power (kW/m^2)
Qi = Radiation intensity (kW/m^2)
Rp = Pool radius (m)

F. Radiation Intensities (kW/m²)

Distance from the centre of the Pool (m) = =1.079(Ep/RI)^0.57*Rp*