Impact = Probability of Incident × Consequence

Consequence → Damages → Property Damage
→ Fatality. ~~EF~~

Property damage → TNT Equivalency.
Fatality → FAR, Fatality Rate, OSHA incidence rate.

→ We need to correlate the two or display both.

Acc. to SKL Sir, probability : $\frac{\Delta LEL}{LEL}$ & $\frac{\Delta HEL}{HEL}$

LEL : Lower Explosive Limit
HEL : Higher Explosive Limit
ΔLEL & ΔHEL is the diff. b/w conc. (%) of fuel from either.

However, this is problematic as it shows $p = 1$, when $c = 0\%$ & $p = 0$ when $c = LEL_g$. Even if we take $(1 - \frac{\Delta LEL}{LEL})$ etc. then also is not an accurate measure- if a ~~do~~ fuel feed is fluctuating ±10% it is much higher risk that if it is ±1%.

$\therefore c = \bar{c} + c'$

~~We~~ ~~e~~ c : Instantaneous Conc. (%)
$\bar{c}$: Mean Conc.
c' : Conc. fluctuat^{n}.

$\bar{c} = C_{sp}$ at steady state.
↳ Set-Point

We calc. c'_{max} & $\nabla_{c'}$ in addition to ΔLEL / ΔHEL from past as well as real-time plant data.

$\therefore$ Now, $p = \frac{c'_{max} - \Delta LEL}{\nabla_{c'} - \Delta LEL}$ ~~&~~

~~If~~ C_{sp} is set such that $\nabla_{c'} > \Delta LEL$

$$\therefore p = \begin{cases} = \frac{c'_{max} - \Delta LEL}{\nabla_{c'} - \Delta LEL} = \frac{c'_{max} + (c - LEL)}{\nabla_{c'} + (c - LEL)}; & c < LEL \\ = \frac{c'_{max} - \Delta HEL}{\nabla_{c'} - \Delta HEL} = \frac{c'_{max} - (c - HEL)}{\nabla_{c'} + (c - LEL)}; & c > HEL \end{cases}$$