



IMPLEMENTATION OF ADDITIONAL CONDITIONS FOR ENVIRONMENTAL CLEARANCE BY **MOEF** UNDER INDUSTRY-2 CATEGORY

The Ministry of Environment and Forests (MoEF), India has recently mandated the incorporation of an Emergency Response Preparatory protocol. As of October 2023, two additional points have been introduced in the Specific Conditions for Environmental Clearance. The recently added conditions talk about Risk Mitigation and F&G Mapping for leak detection that allows a more efficient identification of high-risk areas based on process hazard analysis, ultimately leading to improved safety measures.

Additional Conditions:

1. Company shall maintain an Emergency Response Decision support system in such a way so that identification of the detector's network for the location of the leak source and the probable leaked quantity in real-time, followed by modelling of the dispersion of the plume and consequences as forecast is done in advance and thus, no leak accident may go unattended. Accordingly, Risk Mitigation plan shall be in place.

This refers to the F&G sensor mapping to ensure that no leak goes undetected whatever the weather conditions are. It requires F&G mapping by 3D CFD and inverse CFD modelling such that in real-time leak source is detected in a few minutes and the consequences are foreseen sufficiently in advance, e.g. an hour. This can be done with [Fluidyn-PANEPR](#) and [Fluidyn-REALTI](#).

2. Company shall determine the distance of fire hydrant while finalizing its location from ethanol storage tanks or any other hazardous storage substance shall be based on dispersion of Thermal Radiation so that during any unforeseen situation fire hydrant is always available to operate manually.

This can be done using [Fluidyn-PANFIRE](#) and [Fluidyn-PANWAVE](#), which predicts the thermal radiation intensity in case of storage fire or a pool fire if a tank containment is lost. The radiation simulation is done in 3D, keeping in mind all obstacles and fire walls.

We, at Fluidyn are using the proven Quantitative Risk Assessment (QRA) Methodology since last 20 years and always encourage our clients to go with Risk based approach instead of prescriptive approach.

You can download flyers of Fluidyn tools relevant to additional conditions from link given below.

https://www.fluidyn.com/Flyer_Download/Fluidyn_PANACHE.pdf

We really appreciate MOEF committee – Industry 2 for taking initiative on Risk Based Approach and hope that other committees also take such initiatives to ensure safety.