⚠ SAFETY ALERT

LOSS OF CONTAINMENT AND FATAL FIRE IN THERMIC FLUID SYSTEMS

Issued to all Industrial Units in Telangana handling flammable liquids and thermic fluid systems

1. THE INCIDENT

A fatal fire recently occurred at a lubricant processing facility, in one of the States in South India, during routine operations. The incident originated within a thermic fluid heating system used for oil treatment. A system failure led to the sudden release of hot oil or vapour, which ignited instantly upon exposure to air.

Operating in an environment containing significant quantities of combustible substances, the fire developed rapidly — generating dense smoke and extreme heat. A worker who attempted to intervene during the early stages, possibly to isolate the system, was unable to escape as conditions deteriorated and tragically lost his life.

2. PROBABLE CAUSES & OBSERVATIONS

Initial investigations have highlighted several process safety failings. These are summarised below:

Finding	Detail
Equipment Integrity	The heating system had been in service for an extended period, exhibiting signs of aging and mechanical degradation.
Maintenance Gaps	Mandatory inspection and testing regimes were not consistently applied to the critical heating equipment.
Lack of Supervision	Suitably competent personnel may not have been present to oversee the high-hazard operation at the time of the incident.
Inadequate Protection	The facility lacked robust detection and suppression systems — critical for preventing a localized leak from escalating into a catastrophic fire.

3. MANDATORY SAFETY MEASURES FOR INDUSTRIES

All factories using thermic fluid heaters are advised to implement the following measures without delay:

A. Asset Integrity and Maintenance

- **Preventive Maintenance:** Strictly adhere to the manufacturer's maintenance schedules and all statutory inspection intervals without exception.
- **Integrity Testing:** Conduct regular non-destructive testing (NDT) on coils, piping, and pressure vessels to detect material thinning or corrosion before catastrophic failure occurs.

- **Oil Quality Analysis:** Periodically test thermic fluid for degradation or contamination. 'Cracked' oil can lower flash points and significantly increase fire risk.

B. Operational Control and Competency

- **Personnel Training:** Only suitably competent and formally trained operators are to be assigned to manage heating systems and oil treatment processes.
- **Standard Operating Procedures (SOPs):** Ensure SOPs clearly define safe operating parameters and specific, step-by-step actions to be taken during a Loss of Containment event.

C. Fire Protection and Emergency Response

- **Detection Systems:** Install high-sensitivity smoke and heat detectors specifically around high-temperature oil circuits and heating equipment.
- **Automatic Suppression:** Where possible, implement automated suppression systems (e.g., CO_2 or foam-based) to provide immediate response without requiring human intervention in the danger zone.
- **Evacuation Priority:** Workers must be trained that in the event of a significant thermic fluid leak, IMMEDIATE EVACUATION is the absolute priority.

⚠ **WARNING:** Attempting to manually isolate equipment in a developing fire can be — and in this case was — fatal. Evacuation must always take precedence over intervention.

4. DIRECTIVE & CONCLUSION

This fatality is a stark reminder that when fundamental process safety principles — such as equipment integrity and robust safeguards — are neglected, the consequences in high-hazard environments are often irreversible.

All Industrial Units in Telangana handling flammable liquids and thermic fluid systems are hereby advised to conduct an immediate safety audit of their heating installations.

"Safety is a choice you make; Process Safety is a system you maintain."

Note: The above is advisory to create awareness on safety systems. This will not absolve the responsibility to comply with Statutory norms under relevant statutory provisions

ISSUED BY DIRECTORATE OF FACTORIES FOR CREATING SAFETY AWARENESS AMONG THE CONCERNED