तेल उद्योग सुरक्षा निदेशालय
Oil Industry Safety Directorate
ISO 9001:2015 certified

सुरक्षा संवाद
Suraksha Samwad

An opportunity to learn from mistakes....

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Sh. J V N Rao
CGM –Head Operations, ONGC
Hazira Plant

Education Qualification: B. Tech. Chemical Engineering from Osmania University , Hyderabad, MBA-IGNOU, New Delhi.

Worked in Operations in different Assets and Plants of ONGC. Has experience in carrying out Work-over Operations, Process Plant Operations, Turnaround, Troubleshooting Debottlenecking of Assets. He has unique experience of working in both major Plants of ONGC viz. Uran Plant and Hazira Plant. Currently, he is head Operations and Factory Manager for ONGC , Hazira Plant. He has experience of 31 years.

Carried out External Safety Audit of Cairn Oil & Gas, Vedanta Limited, Surat Plant as OISD Team Member. He is Quality Manager for ATF Operations. He has conducted several Accident Investigations.

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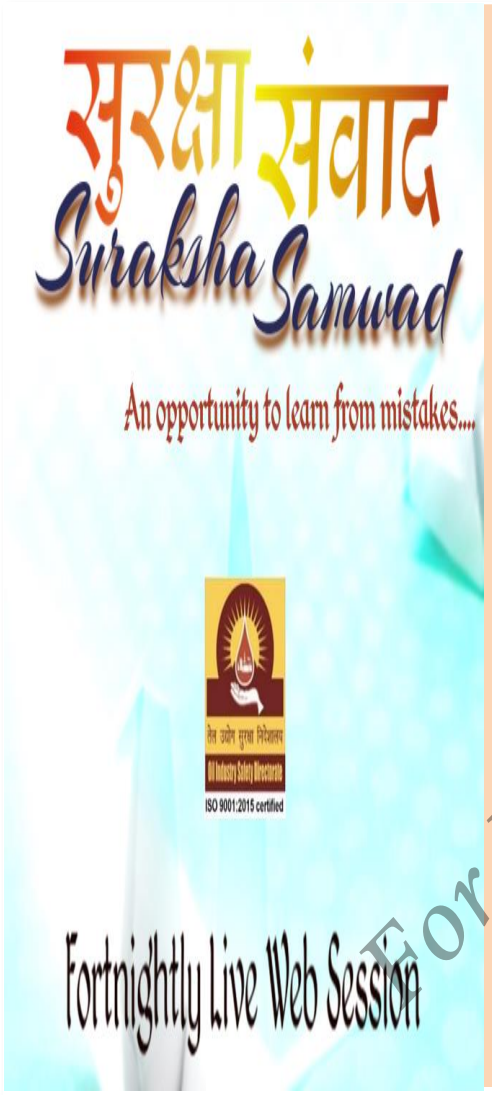

Lessons Learnt from

Fire incident in Gas Terminal

at

Indian Gas Processing Plant

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Incident Brief

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Title : Incident of Major Fire

Location : Gas Terminal of Gas Processing Plant.

Activity Type : Normal Operation

Result/ outcome : Major Fire, Damage to Installation Assets

Sequence of Events:

- HC condensate leaked in late night hrs from the condensate metering skid and was reported to the control room.
- Operating staff observed wide spread vapour cloud around the metering skid area. Source of leakage could not be approached and ascertained.
- Operating people could close the isolation valves of the unit / pipeline after 30 minutes. However vapour cloud that was formed got ignited. Fire was put under control after three hours.
- There was no human injury. But extensive damage occurred in Gas Terminal Area

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Major Observations:

- The leakage originated from the sealing bar of the orifice meter (OM) on the 6” Gas condensate line near Gas Receipt Area
- The traceability of the O-ring could not be established
- Orifice meter sealing bar was held in position by 08 fasteners and they were not of uniform standard. So, there was a possibility that the O-ring was not getting clamped firmly & uniformly all around by the fasteners
- ESD/Remote operations for valves was not available
- Alarm had actuated on GD Panel; but the area was not approachable for local action.
- A damaged illumination bulb at a nearby workstation may be the ignition source.

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Fire incident Details

Source of leak

Vapour Cloud

Fire incident

Incident Severity

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LAPSES/ ROOT CAUSE

- Loss of primary containment from the orifice meter.
- Delayed response to isolate and depressurise the HC circuits.
- Inadequate automation of Fire & Gas detection and Emergency shutdown system (ESD).
- Standardization of spares
- Integrity of flame proof lighting and associated fittings not ensured.
- Electric power, which may act as ignition source was not cut off after detecting leak / HC Vapor cloud.

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Lessons Learnt

- Ensure using genuine spares with traceability. Address Obsolescence without delay
- Unused/ Unwanted Infrastructure should be removed
- Cooling / Blanketing for fire or Vapour Cloud should have Remote Operation Facility.
- ESD/Remote Operations for Gas leakage scenarios
- Better Training Preparedness for Disaster Management
- Need for Advanced Technologies for Fire and Gas Leakage Detection Response
  - Audio/Visual Based sensors and AI platforms
  - SW Assisted Dynamic Vapor Cloud movements based on weather conditions

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