

## Fire incident in Heater Treater unit in a GGS

### Introduction:

A major fire incident took place at Heater Treater unit of a GGS at around 2120 hrs. on 28/09/2012. It has resulted into damage to the three numbers of heater treaters & associated equipment, and production loss due to stoppage of operations.

### Brief description:

Fire in heater treater shed area (between boundary wall and heater treater no. 1 was noticed by shift crew with a couple of blast sounds at 2120 hrs. Firefighting was started with internal resources and with the help of fire tenders from nearby (company owned) fire station, but fire spread to master pit, tanker unloading and transformer area via storm water channel. Firefighting team from local civil authority also participated in firefighting operation and fire was finally controlled by 2305 hrs.

Heater treater shed area was cordoned off by local police authority for collecting samples for forensic analysis; hence heater treaters could not be inspected closely during the investigation. However, the damage to the heater treaters appeared to be external.

### Observations:

- I. Heater treaters were located very close to the boundary wall of the installation. Inter-distance requirement as per OISD-STD-118 was not being met and this was pointed out by OISD audit team which visited the installation earlier in July, 2010. Also, there was a lot of crude oil spilled in the area
- II. Storm water channel was full of oil which caused the fire to spread. Audit team had observed the same in July 2010 also and the company had informed in January 2011 that the audit observation has been complied with, and drain channel cleaning is being done at regular interval.
- III. Plant is more than 30 years old and equipment maintenance was found to be poor during the site visit.

- IV. Housekeeping was very poor with lot of vegetation and crude oil spillage at many places.

**Root Cause of the incident:**

Though the exact source of ignition could not be ascertained, as the area of fire ignition was very close to the boundary wall, the possibility of source of ignition being external (from outside the boundary wall) cannot be ruled out. [Incidentally, based on forensic analysis, concerned state authority have ruled out the use of explosives, as per the information received later on] There was sign of considerable amount of crude oil spillage near the heater treater area which fuelled the fire, and crude oil in storm water channel caused the fire to spread from one corner of GGS to another.

**Recommendations:**

- I. The process equipment should be relocated to safe area, maintaining the inter-distance requirements as per OISD-STD-118 on 'Layouts for Oil and Gas Installations'. Alternately, additional control measures should be put in place, based on quantitative risk assessment.
- II. Engineering and procedural control measures should be taken to avoid the abnormal spillage/leakage of crude oil.
- III. Crude oil in storm water channel is unacceptable. Immediate measures to be taken to stop spillage of crude oil in the storm water channel.
- IV. Housekeeping in the plant should be improved.



**Heater treater Area**





**Storm Water Channel**