तेल उद्योग सुरक्षा निदेशालय
Oil Industry Safety Directorate
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OSD

Newsletter

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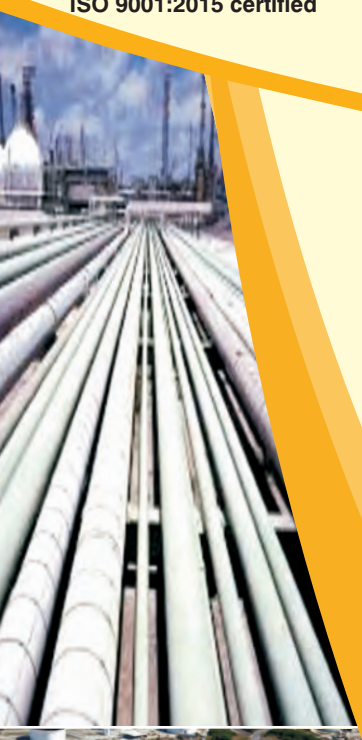

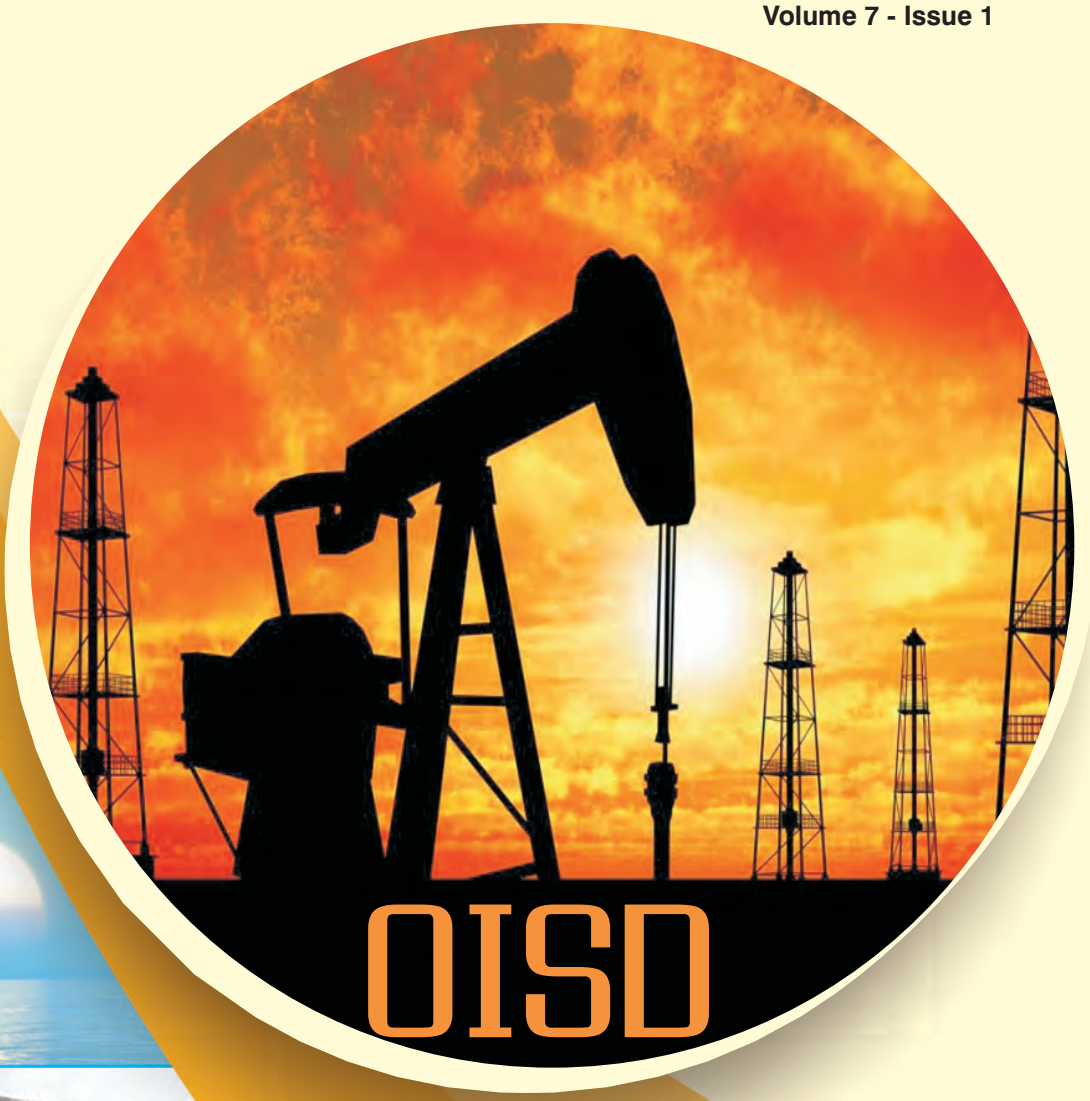

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Esteemed Readers,

Seasonal greetings to all! OISD has been constantly striving for enhancing safety in the industry. Ageing assets coupled with fast depletion of experienced manpower in the industry is a major area of concern.

The role of Safety watchdogs is being discussed and debated more often in terms of multiple agencies and commonality in their roles etc. Notwithstanding the same, role of OISD remains as relevant as before.

OISD standards and learning from incidents/ accidents and joint workshops go a long way in enhancing the safety culture in the oil and gas industry.

The need of the hour is to implement audit observations/ recommendations in a time bound manner to enhance safety. In order to enhance compliance of long pending safety audit recommendations, the frequency of review meetings has been increased both at OISD and Ministry level.

Decommissioning in E&P Offshore is a new area in which OISD has an approving role as per the Site Restoration guidelines which have been notified on 1st May' 18. Such newer areas would make OISD all the more relevant. One operator is already in the process of decommissioning its assets with their 'Well Plug and Abandonment' campaign having been successfully completed. Decommissioning of platform structure is to commence next year.

With active support from industry, various standards (7 revised and 2 new) have been adopted by the Steering Committee in its 53rd meeting held on 13th Apr'18.

Looking forward for more active participation from industry by way of representation, interactions and also deputation of adequate and experienced personnel both in upstream and downstream sectors.

V. Janardhana Rao

Major OISD activities January – June '18

External Safety Audits (ESA)

IOCL

- Barauni Refinery was carried out during 17th – 20th Jan' 18.
- POL terminal at Jatni, Odisha was carried out during 18th - 20th Jan' 18.
- LPG Bottling Plant at Mualkhang, Mizoram was carried out during 22nd – 24th Jan' 18.
- POL terminal at Manmad, Maharashtra was carried out during 23rd – 25th Jan' 18.
- LPG Bottling Plant at Dimapur, Nagaland was carried out during 12th – 14th Feb' 18.
- Mathura Refinery was carried out during 19th – 22nd Feb' 18.
- POL terminal at Panipat, Haryana was carried out during 21st – 24th Feb' 18.
- LPG Bottling Plant at Mathura, UP was carried out during 26th – 28th Feb' 18.
- LPG Bottling Plant at Jalandhar, Punjab was carried out during 26th – 28th Feb' 18.
- IOCL Haldia Refinery was carried out during 12th – 16th Mar' 18.
- LPG Bottling Plant at Haldwani, Uttarakhand was carried out during 26th – 28th Mar' 18.
- POL terminal at Agra, UP was carried out during 26th – 28th Apr' 18.
- LPG Bottling Plant at Manmad, Maharashtra was carried out during 7th – 9th May' 18.
- LPG Bottling Plant at Coimbatore, TN was carried out during 15th – 17th May' 18.
- POL terminal at Jharsuguda, Odisha was carried out during 28th – 31st May' 18.
- POL terminal at Sangrur, Punjab was carried out during 11th – 13th Jun' 18.
- LPG Bottling Plant at Lakhimpur Kheri, UP was carried out during 20th – 22nd Jun' 18.
- POL terminal at Raxaul, Bihar was carried out during 21st – 23rd Jun' 18.

HPCL

- SPM-1 at Vishakhapatnam was carried out during 8th - 9th Jan' 18.
- LPG Bottling Plant at Rajahmundry, AP was carried out during 8th – 10th Jan' 18.
- POL terminal at Manmad, Maharashtra carried out during 8th – 10th Jan' 18.
- LPG Bottling Plant at Khapri, Maharashtra was carried out during 17th – 19th Jan' 18.
- POL terminal at Bahadurgarh, Haryana was carried out during 6th – 9th Feb' 18.
- LPG Bottling Plant at Patna, Bihar was carried out during 05th – 07th Mar' 18.
- POL terminal at Pune, Maharashtra carried out during 07th – 10th Mar' 18.
- Ramanmandi - Bhatinda (30 km)+ Ramanmandi - Bahadurgarh (243 km) + Bahadurgarh - Tikrikalan (15+15) product Pipelines was carried out during 14th -17th Mar' 18.
- POL terminal at Ghatkesar, Telangana was carried out during 26th – 29th Mar' 18.
- LPG Bottling Plant at Anantapur, AP, was carried out during 19th – 21st Apr' 18.
- LPG Bottling Plant at Ajmer, Rajasthan was carried out during 19th – 21st Apr' 18.
- POL terminal at Haldia, WB was carried out during 27th – 30th Apr' 18.
- LPG Bottling Plant at Loni, UP, was carried out during 09th – 11th May' 18.
- LPG Bottling Plant at Kota, Rajasthan was carried out during 23rd - 25th May' 18.
- POL terminal at Hassan, Karnataka was carried out during 28th – 31st May' 18.
- LPG Bottling Plant at Maneri, Uttarakhand was carried out during 11th - 13th Jun' 18.
- LPG Bottling Plant at Pampore, J&K was carried out during 20th - 22nd Jun' 18.

BPCL

- POL terminal at Manmad, Maharashtra was carried out during 3rd - 6th Jan' 18.
- POL terminal at Siliguri, WB was carried out during 10th - 12th Jan' 18.
- LPG Bottling Plant at Gumidipoondi, TN was carried out during 18th - 20th Jan' 18.
- POL terminal at Najibabad, UP was carried out during 12th - 14th Feb' 18.
- POL terminal at Patna, Bihar was carried out during 19th – 21st Feb' 18.

- POL terminal at Bharatpur, Rajasthan was carried out during 19th – 21st Mar' 18.
- POL terminal at Sewree, Maharashtra was carried out during 26th – 29th Mar' 18.
- POL terminal at Haldia, WB was carried out during 23rd - 26th Apr' 18.
- LPG Bottling Plant at Ajmer, Rajasthan was carried out during 23rd - 25th Apr' 18.
- LPG Bottling Plant at Kurnool, AP, was carried out during 23rd - 25th Apr' 18.
- Kota - Jobner Product Pipeline was carried out during 7th - 9th May' 18.
- POL terminal at Irrugur, TN was carried out during 14th – 16th May' 18.

CPCL

- Manali Refinery was carried out during 5th – 9th Feb' 18.
- LPG Bottling Plant at Chennai, TN was carried out during 18th – 20th Jun' 18.

BORL

- Vadinar - Bina Crude Pipeline including SPM & Tank farm was carried out in two phases during 5th to 9th Mar' 18 & during 19th to 24th Mar' 18.

GAIL

- Vaghodia GPP was carried out during 27th – 29th Jun' 18.

ONGC- Onshore/ Offshore Installations/ Rigs/GPP/CTF:

- Offshore NQO process complex & unmanned wellhead platform N-10 was carried out during 8th -12th Jan' 18.
- Mobile offshore drilling rig Ed – Holt & Jindal Supreme of Western Offshore Asset, Mumbai, was carried out during 22nd - 25th Jan' 18.
- Mobile offshore drilling rig Essar Wildcat & Platinum Explorer of Western Offshore Asset, Mumbai, was carried out during 04th – 09th Feb' 18.
- FPSO Armada Sterling -1 & Un-manned wellhead platform BS-13A of B&S Offshore Asset was carried out during 19th - 23rd Feb' 18.
- Mobile offshore drilling rig Actinia & Aban Ice of Western Offshore Asset, Mumbai, was carried out during 4th – 9th Mar' 18.
- SCA process complex & Un-manned wellhead platform EB of MH Offshore Asset was carried out during 5th - 9th Mar' 18.
- Onshore Installations of Cauvery Asset was carried out during 2nd – 5th Apr' 18.
- Onshore Installations of Assam Asset was carried out during 22nd – 26th May' 18.
- Onshore Installations of Rajahmundry Asset was carried out during 4th – 8th June' 18.
- ONGC Hazira Gas Processing Plant was carried out during 19th – 22nd Feb' 18
- ONGC Kalol & Navagam CTF was carried out during 28th Feb – 1st Mar' 18.

RELIANCE

- Reliance SEZ Refinery, Jamnagar was carried out during 21st – 25th May' 18.

HOEC

- PY-1 Onshore installation at Karaikal was carried out on 6th Apr' 18.

SUN PETROCHEMICALS LTD

- Onshore installation of Hazira asset was carried out during 28th – 31st May' 18.
- Offshore platform Alpha Bob was carried out on 1st Jun' 18.

OIL INDIA LTD

- Onshore Installation of Duliajan Asset was carried out during 24th – 28th Apr' 18.
- Numaligarh - Siliguri Product Pipeline of OIL was carried out during 21st - 26th May' 18.

CAIRN

- Barmer - Salaya Crude Pipeline (596 Km Crude Pipeline + 450 Km Gas Pipeline) was carried out during 19th -26th Feb' 18.

EWPLL

- 1st phase of East-West Gas Pipeline of EWPLL, was carried out during 18th to 22nd Jun' 18.

Pre-commissioning Safety Audits (PCSA)

IOCL

- PCSA of OCTAMAX Unit, Mathura Refinery was carried out during 10th – 11th Jan' 18.
- PCSA of additional/ alteration jobs in accident affected building of Swing Unit, Panipat Refinery was carried out on 24th Feb' 18.
- PCSA of railway siding of POL terminal at Kanpur, UP was carried out on 3rd Mar' 18.
- PCSA of 2 Nos. CIass B tanks of POL terminal at Devanagonthi, Karnataka was carried out on 17th Mar' 18.
- 12.75", 6 Km LPG Pipeline from Panipat Refinery to Bottling Plant at Kohand was carried out during 26th Mar' 18
- PCSA of TLFG & PH of POL terminal at Devanagonthi, Karnataka was carried out on 19th May' 18.
- PCSA of 6x300 MT Mounded Storage of LPG BP at Leh, J&K was carried out on 29th May' 18.
- PCSA of New Mounded Storage of LPG BP at Guwahati, Assam was carried out during 14th - 15th Jun' 18.
- PCSA of SWS Unit –VI, Gujarat Refinery was carried out 29th Jun' 18
- PCSA of New Mounded Storage of LPG BP at Gurgaon, Haryana was carried out on 26th Jun' 18.

HPCL

- PCSA of new LPG BP at Panagarh, WB was carried out during 22nd - 23rd Mar' 18
- PCSA of new Mounded Storage of LPG BP at Mysore was carried out on 19th Apr' 18.
- PCSA of Vizag Tank Wagon Gantry of POL terminal (Black Oil) was carried out during 2nd – 3rd May' 18.
- PCSA of 2 Nos. IFR MS Tanks of POL terminal at Mathura, UP was carried out on 1st Jun' 18.
- PCSA of VGO tank (120-T-01FX) of Vizag Refinery was carried out on 22nd Jun' 18.

BPCL

- PCSA of new Mounded Storage of LPG BP at Lucknow, UP was carried out on 21st Mar' 18.
- PCSA of new LPG BP at Raipur, Chhattisgarh was carried out during 21st - 22nd May' 18.
- PCSA of ATF tank of POL terminal at Devanagonthi, Karnataka was carried out on 26th May' 18.
- PCSA of Tanks of POL terminal at Kanpur, UP was carried out on 26th June' 18.
- PCSA of Tanks of POL terminal at Gonda, UP was carried out on 28th Jun' 18.

ONGC

- PCSA of 18" dia, 35.537 km long Navagam - Akhdol section and 18" dia, 44.180 km long Akhdol - Koyali section of Kalol-Navagam - Koyali Crude Pipeline was carried out during 15th - 16th Jan' 18
- PCSA of ATF Polishing Unit, Hazira was carried out on 26th Mar' 18.
- PCSA of Tank wagon gantry of POL terminal at Hazira, Gujarat was carried out on 16th Apr' 18.

GAIL

- PCSA of 8", 53.726 Km, Hubli - Dharwad spur line from IP-04 of Dabhol Bengaluru NG Pipeline at Chainage 337.199KM (Kagdala, Belgaum District) up to Murudeshwar Ceramic Ltd. was carried out on 10th Mar' 18.

HMEL-Bhatinda

- PCSA of BBU, Tankage and Bitumen gantry of HMEL, Bhatinda Refinery was carried out during 23rd – 25th Jan' 18.
- PCSA of PPU unit revamp, Bhatinda Refinery was carried out during 19th – 20th Mar' 18.

CPCL

- PCSA of DHDS unit revamp was carried out during 16th – 17th Jan' 18.

ISPRL

- PCSA of 42", 36.5 Km Crude Pipeline section between Intermediate Valve Station (IVS) at Mangalore to Padur Cavern was carried out during 15th - 16th Feb' 18

RGPL

- PCSA of 109 km long pipeline from MLV-05 at KM 55.4 to Intermediate Pigging Station-01 at

KM 164.26 section of Dahej - Nagothane Ethane Pipeline Project was carried out during 26th - 27th Feb' 18.

- PCSA of 167.98 Km long pipeline section between IPS-01 at chainage 164.26 Km to Intermediate Pigging Station IPS-02 at chainage 332.236 Km of Dahej - Nagothane Ethane Pipeline Project was carried out during 14th - 15th Jun' 18.

NRL- NUMALIGARH

- PCSA of DHDT unit of NRL, Numaligarh was carried out during 24th – 25th Jan' 18.

Surprise Safety Audits (SSA)

IOCL

- LPG Bottling Plant at Ennore, TN was carried out on 22nd Jan' 18.
- POL terminal at Shirud, Maharashtra was carried out on 27th Jan' 18.
- LPG Bottling Plant at Patna, Bihar carried out on 8th Mar' 18.
- POL terminal at Desur, Karnataka was carried out on 12th Mar' 18.
- POL terminal at Sagar, MP was carried out during 23rd - 24th Mar' 18.
- POL terminal at Cherlapally, Telangana was carried out on 27th Mar' 18.

HPCL

- POL terminal at Najibabad, UP was carried out on 15th Feb' 18.
- LPG Bottling Plant at Hoshiarpur, Punjab was carried out on 1st Mar' 18.
- POL terminal at Ramagudam, Telangana was carried out during 23rd - 24th Mar' 18.
- POL terminal at Mahul, Maharashtra was carried out on 30th Mar' 18.

BPCL

- POL terminal at Meerut, UP was carried out on 16th Feb' 18.
- POL terminal at Ranchi, Jharkhand was carried out during 22nd - 23rd Feb' 18.
- POL terminal at Dhanbad, Jharkhand was carried out during 23rd - 24th Feb' 18.
- POL terminal at Cherlapally, Telangana was carried out on 30th Mar' 18.
- LPG Bottling Plant at Coimbatore, TN was carried out on 18th May' 18.
- POL terminal at Sangrur, Punjab was carried out on 14th Jun' 18.
- POL terminal at Kanpur, UP was carried out during 24th - 25th Jun' 18.
- POL terminal at Gonda, UP was carried out on 29th Jun' 18.

Consents to operate accorded to:

- Vedanta Ltd – Cairn Oil & Gas for MODU (Jack Up) "ABAN-DD-IV" offshore drilling rig on 1st Jan' 18.
- ONGC for Offshore Modular Rig "Sundowner-V" on 4th Jan' 18.
- ONGC for MODU (Jack Up) "GD Chetna" on 8th Jan' 18.
- ONGC for MODU (Jack Up) "Trident-XII" on 15th Jan' 18.
- ONGC for MODU (Jack Up) "Harvey H Ward" on 30th Jan' 18.
- ONGC for MODU (Jack Up) "JT Angel" on 5th Feb' 18.
- ONGC for MODU ((Jack Up) "Victory Driller" on 13th Feb' 18.
- HOEC for MODU ((Jack Up) "Aban DD-8" on 21st Feb' 18.
- ONGC for MODU ((Jack Up) "GD Chaaya" on 23rd Mar' 18.
- Vedanta Ltd – Cairn for MODU ((Jack Up) "West Telesto" on 12th Apr' 18.
- ONGC for MODU ((Jack Up) "Jindal Explorer" on 23rd Apr' 18.
- ONGC for MODU (Semi-Submersible) "SSV Louisiana" on 27th Apr' 18.
- Reliance Ports and Terminals Ltd., Jamnagar, Gujarat for two nos. fixed Single Point Mooring systems (SPM 1 & SPM 2) installed at Sikka on 25th May' 18.
- RIL for MODU (Drill Ship) "DDKG-1" on 6th Jun' 18.
- ONGC for unmanned Well Head Platform C-24-P2, B12-11, B12-13, B12-15, B12-17 of B&S Asset on 21st Jun' 18.

Oil Spill Response:

- Joint Inspection for Oil Spill response of BGEPIL and ONGC at Mumbai Panna and Heera fields was carried out during 5th - 6th Mar' 18.
- Joint Inspection for Oil Spill response of Vadinar SPM of Essar Oil Ltd. was carried out on 27th Mar' 18.
- Joint Inspection for Oil Spill response of Sikka SPM of BORL was carried out on 28th Mar' 18.
- Joint Inspection for Oil Spill response of Vadinar SPM of IOCL was carried out on 28th Mar' 18.
- Joint Inspection for Oil Spill response of Sikka SPM of RIL was carried out on 30th Mar' 18.

Meetings

- Industry meeting held on 2nd Feb' 18 at OISD office for discussion on action plan of compliance of critical observations of POL Locations with respect to OISD Standards identified during recent ESA Audits. Principal panelists of marketing sections of BPCL & HPCL along with location incharge attended the meeting.
- Review meeting held with M/s BPCL and M/s HPCL at OISD, NOIDA on critical POL observations during audit of Tirunelveli & Bijwasan on 2nd Feb' 18.
- Dir. (E&P) held meeting with M/s Hardy Oil regarding safety of abandoned wells in PY-3 field at Chennai on 9th Feb' 18.
- Meeting between BGEPIL Facilities team and OISD regarding decommissioning of Tapti field was held at OISD, NOIDA on 23rd Feb' 18.
- Review meeting held with OMCs on provision of safety facilities in common & owned railway siding pertaining to POL at OISD, NOIDA on 6th Mar' 18.
- Dir (E&P) held meeting with ONGC Helibase personnel in relation with incident investigation of Helicopter incident of 13/01/18 at Mumbai Juhu Helibase on 7th Mar' 18
- Dir (E&P) held meeting with BGEPIL aviation experts in relation with incident investigation of Helicopter incident of 13/01/18 at Mumbai Juhu Helibase on 7th Mar' 18.
- Meeting between IOCL RHQ HSE and OISD regarding liquidation of long pending ESA recommendations at OISD, NOIDA on 4th Apr' 18 .
- Meeting between ONGC corporate HSE team and OISD regarding liquidation of ESA recommendations and other points held at OISD, NOIDA on 5th Apr' 18
- 53rd Steering committee meeting held at OISD, NOIDA on 13th Apr' 18. All industry members attended the meeting to discuss long pending ESA recommendations, adoption of new/ revised OISD Standards, analysis of incidents in oil and gas industries & other critical industry issues.
- Meeting between BGEPIL facilities team and OISD regarding decommissioning of Tapti field held at OISD, NOIDA on 17th Apr' 18.
- Meeting with IOCL & BPCL was held on 3rd May' 18 regarding long pending audit points i.e. more than 2 years pertaining to LPG.
- Review meeting held with OMCs on progress in safety facilities in common & owned railway siding pertaining to POL on 9th May' 18.
- Meeting with HPCL was held on 24th May' 18 regarding long pending audit points i.e. more than 2 years pertaining to LPG.
- Review meeting held with OMC for pending points of ESA/SSA for more than 2 years pertaining to POL on 7th Jun' 18.
- Review meeting of Disaster Management Plan (DMP) of private E&P operators held at OISD, NOIDA on 18th Jun' 18.

Functional Committee Meetings on Safety Standards:

- FC meeting for revision of OISD-RP-205 on "Crane operation, maintenance & testing (for upstream)" was held at OISD on 31st Jan' 18.
- FC meeting for revision of OISD-STD-150 on "Design and Safety Requirements for Liquefied Petroleum Gas Mounded Storage Facility" was held at OISD on 04th May' 18.
- FC meeting for revision of OISD-STD-188 on "Corrosion Control of Onshore & Offshore Pipelines" were held at OISD on 16th May' 18 and 19th Jun' 18.
- FC meeting for new OISD-RP-242 on 'Drilling and Testing of HPHT wells' was held at OISD during 24th - 25th May' 18.
- FC meeting on OISD-RP-167 on 'POL tank lorry design and safety' was held at OISD on 21st May' 18.

- FC meeting on OISD-STD-157 on 'Recommended practices for transportation of bulk petroleum products' was held at OISD on 22nd May' 18 to address issues raised during Steering Committee meeting.
- FC meeting on OISD-STD-112 on 'Safe handling of air-hydrocarbon mixture and pyrophoric substance) was held at OISD during 7th – 8th Jun' 18.
- FC meeting on OISD-GDN-211 on 'Safety in Petroleum Laboratories' was held at OISD during 18th – 19th Jun' 18.

Knowledge sharing by OISD Officials

- Second workshop for auditors on 'Audit of LPG Bottling Plant' was conducted by OISD at BPCL, Rajkot LPG Plant on 6th Feb' 18.
- Third workshop for auditors on 'Mounded Storage Vessel & its Cathodic Protection system' was conducted by OISD at BPCL, Rajkot LPG Plant on 7th Feb' 18.
- Shri Mahesh Goyal, Joint Director (MO-LPG), OISD took a session on OISD Audit Analysis, Design of LPG Plants and Facilities during HSSE workshop for LPG Bottling Plant officers at Centre of excellence LPG BPCL, Sewree on 22nd Feb' 18.
- Presentation made by ED, OISD on 'Safety Regulation framework in oil and gas industry of various countries' on 9th Mar' 18 at Shastri Bhawan, New Delhi.
- Shri DM Mahajan, Joint Director (Process), OISD presented a technical paper on 'OISD Case studies and lesson learnt' in CHT activity committee meet on 'Inspection Practices of Refineries, Oil & Gas Pipelines' held at Mathura Refinery on 16th March 2018.
- Presentation by Combustion Research Associates on enclosed ground flare system for E&P held at OISD, NOIDA on 24th Apr' 18.
- Third workshop for auditors on 'Audit of LPG Bottling Plant' was conducted by OISD at HPCL, Ajmer LPG Plant on 26th Apr' 18.
- Fourth workshop for auditors on 'Mounded Storage Vessel & its Cathodic Protection system' was conducted by OISD at HPCL, Ajmer LPG Plant on 27th Apr' 18.
- Dir (E&P) visited Lakhmani ETP, in relation to fatal incident occurred at Lakhmani ETP on 28th Feb' 18 and Drilling Rig F 4900, EV-2000-3, 4 &5 of Nazira Asset of ONGC during 24th - 25th May' 18.
- Information sharing session on 'Well Control and other mandatory technical training for drilling personnel' in coordination with Energy team of British High Commission, New Delhi was organised at OISD on 29th May' 18.
- Dir (MO-LPG) and Dir (MO-POL) took training session on audits in a workshop organised by IOCL for panel of officers from multidisciplinary functions at New Delhi on 31st May' 18.
- ED - OISD visited HPCL LPG Bottling Plant at Yediyur (Bengaluru) on 14th Jun' 18. He also inaugurated two days workshop on 'Audit of LPG Bottling Plant' at IOCL, Bengaluru.
- ED - OISD along with Director (E& P) visited SHELL technology centre at Bengaluru on 15th Jun' 18 and interacted on facilities available for both upstream, downstream and entrepreneurship development.

One earnest worker can do more by personal suggestion to prevent accidents than a carload of safety signs.

CASE STUDY

Incident at MODU (drillship) during repair at Shipyard

Author: Sundar Iyer R
Director (E&P)

Introduction

A fatal incident took place on a self-propelled drillship which was under dry dock at shipyard while undergoing mandatory special survey of hull, machinery and tail shaft as per class requirement and lay-up repairs. An explosion occurred in the third deck accommodation area in the AC plant air handling unit (AHU) during welding on the hull. Five contract personnel lost their lives and seven contract personnel suffered injuries.

Brief description

The side welding on hull from inside of pot water tank No-1 (Starboard side) was in progress for past few days and other cutting & welding jobs on the drillship were also in progress. At around 9.12 AM an explosion occurred and heavy vibrations were felt in the accommodation area of the drill ship. The explosion had occurred at the third deck of accommodation in the AC plant. The fourth deck was the final bottom deck. The blast caused substantial damage to the drill ship. The rescue was carried out very quickly by the ship yard rescue team through the hatch by using the escape ladder below the forecastle deck. An opening had been cut on the starboard forward side on the main hull to flush out the smoke for letting in fresh air to aid rescue attempts. The port hole glass in recreation room/galley had been broken to ventilate the place.

Observations

- The Permit to Work (PTW) is prepared /filled by the performing agency (Contractor) endorsed by the assigner who is a ship yard officer and the recommending authority is from safety and fire department of the shipyard. The final approval is given by the master of the ship who is the representative of the owner of the ship.
- Permit to work is valid for a maximum up to 24hrs (along with PTW card in case of hot work).
- As per procedure laid out, the revalidation of PTW for hot jobs beyond 24hrs was being granted through PTW card which can be extended up to 15 working days.
- On the day of incident a new work permit was issued (after 15 days of work) and for the subsequent days a new PTW card was to be used.
- On the day of the incident the PTW card was pre signed by the contractor and shipyard supervisor but was not signed by the master of the ship.
- Oxygen and Acetylene is supplied from central storage to several manifolds located on the drill ship at various locations. As per the work requirement the hoses which originate from these manifolds are extended to different locations for supplying gas for cutting jobs.
- At the location of the blast a team had worked up to 02 AM on the previous night. A leak through the hoses left unattended/open by previous team might have contributed to a gas accumulation around the AC plant room probably due to the manifold connection being left open.
- The team which started work next morning probably lit a spark to commence cutting operations which initiated a huge blast.
- The blast threw five persons who were working at various places starting from 3rd deck till one deck above the blast spot killing them and dis-membering some instantly.

Analysis for ascertaining cause of the incident

- Detailed and complete information was not provided in all the sections / sub sections of the permit to work format.
- The Safety Officer / Fire Officer / Officer authorized had not made periodic check of the work sites to see that the work is being carried out as per conditions laid down in the work permit. He had failed to suspend the work and inform the Work Permit Issuing Authority to ensure the safe conditions so that work can be restarted.
- In the present case PTW cards were found to have been signed in advance. The main permit form is not used after the day of issue following which the yellow card (job extension card) is used which doesn't have any column for mandatory checks etc.
- After completion or stoppage of the job in the previous night shift it was not ensured that the manifold valves were closed properly. The cutting torch was removed and probably the hose ends would have been closed with temporary clamping.

Recommendations

- In the permit to work form all the section/sub sections should be filled completely and mandatory checks be made before granting clearance for starting a job.
- Job responsibilities with regard to work permits etc. need thorough revamping as the existing system pointed to diffused responsibilities.
- Proper checks to be done to ensure that hot work areas are properly inspected to be free of any gases which may cause explosion and be properly ventilated using gas eductors.
- The work permit checklist of shipyard requires modifications to include level of gas present inside at the lower deck levels where chances of entrapment of gas is very high due to restricted and closed passages.
- Ends of hoses should not be left folded after disconnecting the cutting torch. This could create accidental flooding of work space. Valves at the manifold should be closed before removing the cutting torch /hoses and in no case the hoses should be left connected to the manifolds with cutting torch removed.
- Hoses should be checked and replaced periodically.

Every accident is a notice that something is wrong with men, methods, or material - investigate - then act.

CASE STUDY

Explosion in Process Unit - CRU

Author: Shri DM Mahajan
Joint Director (P&E)

Incident

During early night shift, fumes and flash flame were observed at the isolation globe valve of one of the furnace coil passes in the Catalytic Reforming Unit(CRU) of one of the Indian Refineries. The fire was extinguished by applying DCP; Snuffing steam was put around the leak for dispersion. Next day morning, insulation was removed from the globe valve. Gas testing done near the flange indicated nil LEL reading. After assessment of the situation, it was decided to shut down the unit at around 10.30 hrs. Meanwhile, a sudden explosion followed by fire took place at approx. 11.07 Hrs. from the said valve joint. There was fatality of an employee, who was in the vicinity of the leaky valve.

Unit shutdown was taken and fire was brought under control after about 30 minutes of firefighting.

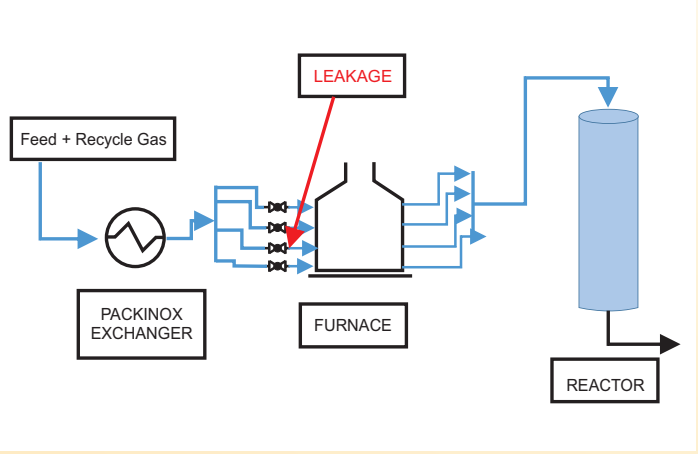


Fig : Location of leak

Observations

- No cordoning of the affected area was done. There was no restriction on the access/movement of personnel in the leakage area.
- The other flange of the globe valve involved in the explosion had leaked 16 months earlier at well. Subsequently the unit was shut down to attend the leakage and the gasket was replaced
- The LEL meter which was used in night and on next day morning, was malfunctioning.
- Job Safety Analysis (JSA) was not carried out for activity of insulation removal from leaky valve.
- The video footage of the accident shows deceased employee standing on the platform, near the railing, with no apparent activity.

Root Cause of incident

- Failure of the spiral wound metallic gasket in the lower flange of the globe valve in Pass-3, inlet to furnace. The explosion was a consequence of worsening of the gasket following its exposure to leakage and fire of the previous night, leading to complete failure of the gasket.

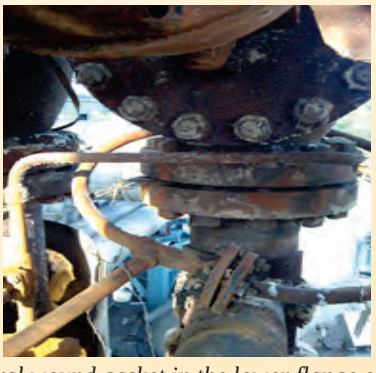


Fig : Failed spiral wound gasket in the lower flange of the globe valve

- The probable erroneous zero LEL reading of the LEL meter resulted in a misguided sense of safety, thereby allowing a free access of personnel to the platform at 15 meters and delayed the shutdown decision.

Fig : Damage Spiral wound metallic gasket

Recommendations

- Leak/Fire in lines containing hydrogen or hydrocarbons at high pressures and above auto ignition temperature should be critically reviewed before attempting any online maintenance activity and shutdown should be taken if required to avoid any unwanted consequences.
- Record of flanges with history of leakage should be maintained as 'Bad actors' and the gasket/flange condition of the said flanges should be checked in every turnaround.
- Before going out to the site for LEL check, the working condition of the LEL meter should be ascertained.
- Area should be suitably cordoned off with adequate barrier and signage to prevent free access of personnel.
- Job Safety Analysis (JSA) by a cross-functional team for every critical, hazardous, non-routine jobs should be carried out.

Do not think because an accident

hasn't happened to you

that it can't happen

TECHNICAL ARTICLE

Radiography from close proximity – creating safer environment & reducing downtime

Author: Shri VP Singh
Joint Director (P&E)

Conventional Radiography:

The radiological inspection has a tradition of more than 100 years and is predominantly based on the combination of radiation source and film. Radiographic Testing (RT) is a non-destructive examination (NDE) technique that involves the use of either x-rays or gamma rays to view the internal structure of a component.

The major drawback of conventional radiography is its disruptive effects on other activities in the area. The traditional radiography normally requires the exposure of a gamma radiation source, often Iridium-192. The source is generally driven from a shielded container into an unshielded guide tube. When the source is in the guide tube the radiation emitted requires all personnel in a wide area (~50M) to be evacuated. This causes severe disruption to any ongoing work in the surrounding area. It can also trigger nucleonic type instruments used in petrochemical plants, causing them to malfunction and shut the plant down. More over due to associated hazard of radiography, current working practices allows radiography largely at night which can be more dangerous due to possibility of slips/fall & ignorance in controlling movement near barricading area.

New Safer Technologies evolved:

New technologies of carrying out radiography from Close Proximity to object have been evolved that supersedes the traditional methods and overcomes the problems of disruption associated with radiography. These methods don't require evacuation of any personnel & allows continuous operations to be carried out in the immediate area where radiography is being performed.

These new techniques usually utilize Selenium-75 source which has significantly lower resultant average energy, improved radiographic contrast, improved resolution, improved controlled area and shielding requirements compared to Iridium-192 source which is commonly used in Industrial RT. The special design of container allows radiation source to be within the container during RT, avoiding unwanted radiation and at the same time allowing radiation beam to be controlled. The shielding envelope which is flexible and made from high density flexible material can be rolled to cover the source resulting into controlled radiation and reduced cordon off distance ~ up to 1-1.5 meter.

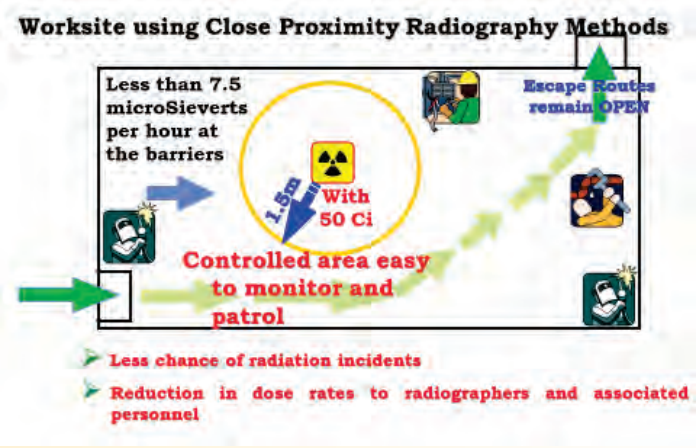
Higher safety can be achieved through these close proximity radiography techniques due to reduced chances of RT incidents by controlling radiation and easy monitoring of cordon off areas. Beyond the cordon off area, all the activities can be done as usual without any disturbance increasing productivity and avoiding man-hours loss. Round the clock RT inspection can be done with higher safety and quality.

Some of the major advantages achieved by using these methods are:

- Cost savings due to uninterrupted working
- Overall reduction in downtime compared with 'traditional' radiography
- Controlled area can be set at 1.5 metre or less hence better monitoring
- Less risk of radiation incidents

- Improvements in radiographic quality
- Nucleonic type instruments not affected
- Complete elimination of 'unwanted radiation' (any radiation in excess of that required to produce the radiographic image).
- Higher safety to personnel involved in radiography

A Typical worksite is illustrated where close proximity radiography is being used:



The new systems make use of a number of components, each one designed to complement the others. These are:

- A multifunctional exposure container that can be used in directional, panoramic and projection modes is made in such a way that source does not leave the container. This unique feature enhances the safety by reducing leakage radiation and eliminating unwanted radiation. The surface dose rate from the container is very low and significantly less than the requirements of ISO 3999.
- Safety interlocks ensure that the source cannot be moved from its fully shielded docking position until the operator has followed the correct procedures. After each exposure of the source the operator is required to activate the source release mechanism otherwise the remote control winding gear remains locked to prevent inadvertent exposure.

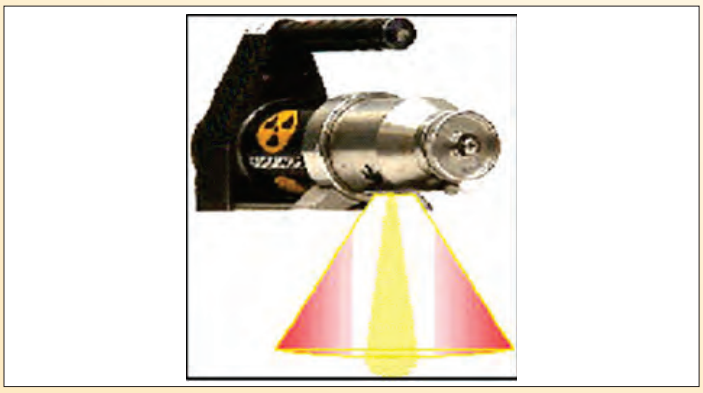


Fig: Multifunctional Exposure Container

- Shielding is provided by high density flexible material made from the combination of metal and rubber which can be used to form a movable wall of radiation shielding & flexible to bend around complex shapes. Desired level of flexibility and radiation attenuation can be achieved by varying the amount of rubber and metal in the composition. During the radiography it covers/envelops the source and provides shielding. Also, it is used to attenuate the unwanted radiation, that is, scatter and the radiation beam emerging from the back of the film. This shielding is used to reduce scatter radiation emerging from the area under examination and is held in place using back to back attachable strips.

Fig: Radiation Shielding Envelope

A tubular sheath over the guide tube can be used to reduce the transient radiation dose as the gamma source travels along the guide tube unlike in the conventional Gamma Radiography where unshielded guide tube is used and when the source is inside the guide tube, evacuations is mandatory with wide cordon off distances.

Fig: Tubular Gamma Sheath

These techniques has been used in very close proximity to nucleonic instruments and it has been shown that radiography can now be carried out in close proximity to these types of instruments without causing malfunction or plant shutdown.

To epitomise, these techniques allows shorter controlled or barricaded area, eliminates the need to evacuate other personnel or cease other operations during radiography. Also, multiple teams of radiographers can work together without interfering with each other's activities. Subsequently, shorter downtime can be achieved through these techniques. Further due to low doses of radiation, its comparatively safe for radiographer and associated personnel.

TECHNICAL ARTICLE

Decommissioning Offshore Fields

Author : D.V. Chandrasekhar, Addl. Dir. (E&P)

Decommissioning is the process of safe plugging of wells & dismantling the structures & equipments used to support production when the oil & gas fields come to the end of their productive life and these Assets are disposed off or put to reuse in an environmentally sound manner.

When a company signs a production sharing contract for oil or gas exploration, decommissioning is the part of agreement. On this the Rule 12 of Petroleum & Natural Gas (Safety in Offshore Operations) Rules, 2008 states "removal of abandoned or disused offshore installation in accordance with generally accepted international standards and guidelines" needs to be performed.

International standards suggest total removal of offshore structures weighing up to 4,000 tons in the areas with depths less than 100metres. In deeper waters, removal of structures up to 55metres depth is mandatory leaving the remaining structure in place. Artificial reefing is also another concept of reversing ecological damage by aiding development of coral reefs

The philosophy of Plug and Abandon (P&A) of wells is to isolate the hydrocarbon zones, protect fresh water aquifers & prevent migration of formation fluids. All platform components including conductor casings must be removed to up to a depth of at least 5M below the ocean floor or to a depth approved by the regulator based upon the type of structure or ocean bottom conditions. Pipeline decommissioning in place requires a flushing it with water followed by disconnecting it from the platform and filling it with seawater. The open end is plugged and buried below the seafloor and covered with concrete. Topsides can be removed all in one piece or in groups of modules in reverse order of installation or in small pieces. Removal of jacket may involve use of explosives, mechanical means or by using abrasive technology to make the bottom cuts on the piles up to 5M below the ocean floor.

Tapti offshore field operated in south of Gulf of Khambhat in West Coast of India by a Joint Venture consortium of BGEPIL, ONGC & RIL was proposed in 2013 for likely cessation of production from 2015.

With no guidelines for project management of decommissioning activities, MoPNG constituted a committee in January'14 under the Chairmanship of DG, DGH to frame up best practices for site restoration for petroleum operations.

The following framework for Tapti abandonment plan was recommended.

i. Wells plugging & abandonment be carried out in accordance with OISD standards 175 and 183.

ii. Platforms were to be completely removed. Topsides were proposed to be taken onshore for disposal. Jacket disposal options such as onshore disposal, deep water disposal or artificial reefing shall be examined and selected at the concept selection stage.

iii. Pipelines shall be decommissioned in situ.

iv. Removal of large debris was proposed to be carried out up to a radius of 400M from the center of the platforms and proven by an acoustic scan survey witnessed and certified by a third party.

v. Post abandonment pipeline location survey shall be carried out by the operator within six to twelve months post abandonment to establish stability.

Committee submitted the guidelines for site restoration for petroleum operations in November'15 with approving role to MoP&NG & DGH (through Management Committee), DGMS for Onshore & OISD for Offshore production sites, regulation w.r.t decommissioning will be administered by OISD for offshore & DGMS for onshore and EIA guidelines for decommissioning along with EC approval by MOEF&CC.

BGEPIL submitted tapti abandonment plan on 05.10.2016 & approval granted by OISD on 18.11.2016. The P&A of 38 wells started on 11.12.2016 and completed on 26.03.2018 in line with OISD-STD-175.

The government notification for site restoration & abandonment guidelines for petroleum operations was issued on 02.05.2018 with EIA report to be submitted to OISD for offshore fields and DGMS for onshore fields along with site restoration plan.

RIL has declared in August'18 the possible cessation of its MA deep water field in eastern offshore from September'18. The initial discussions were held and process for decommissioning to be started.

Decommissioning though relatively new to our country, with multiple agencies including various Ministries having a consultative role, needs to be done in a safe and expeditious manner.

Mutual-Aid Provided By IOCL/HPCL Gwalior Depot in Extinguishing Fire in 2 Coaches of Train No. 22416 (A P Express) near Gwalior Railway Station On 21.05.2018

Brief about the incident:

- Two coaches of train no. 22416 (A P Express) caught fire near Birlanagar railway station near Gwalior at around 11:50 Hrs on 21.05.2018.
- SDM, IOCL, Gwalior Depot received a request call at around 12:15 Hrs from district disaster control cell regarding supply of AFFF at the incident site. He also requested OMCs for necessary help in extinguishing the fire.

Mutual aid provided by IOCL/HPCL Gwalior Depot:

- *Team of IOCL and HPCL along with safety officer(s) immediately rushed to the site with AFFF cans, foam branch pipes and universal nozzles through Multi-Purpose Vehicle (MPV) attached with Gwalior Depot. Team Gwalior Depot reached the site at around 12:45 Hrs.*
- *After reaching the site, it was observed that fire brigade/SDRF teams at site were in dire need of AFFF and other fire fighting equipment such as fire hoses, branch pipes etc. Team IOCL/HPCL Gwalior Depot provided all necessary fire fighting equipment to the fire brigades/SDRF teams who were fighting the fire and the fire was extinguished promptly.*
- *Local fire brigade/SDRF teams appreciated such a fast response by IOCL/HPCL Gwalior depot.*

An incident is just the tip of the iceberg, a sign of a much larger problem below the surface

स्वच्छ भारत अभियान

Safety Audit: HPCL, Patna LPG Plant (5-7.03.2018)

Before

After

Safety Audit: IOCL/BPCL common tank wagon unloading siding, Gonda, POL installation (29.06.2018)

Before

After

Farewell

Shri M Gupta, is a B. Tech in Chemical Engineering from Calcutta University and joined Indian Oil in 1984. He has more than three decades of rich experience in Process Unit Operation, Process Designing of Crude Distillation Unit, Project conceptualization and Implementation. He is basically an operation person and commissioned different unit like CDU, HGU, DHDT/DHDS, SRU, N2 plant and utilities. He is a Process Safety expert and has made tremendous contribution for the Oil and Gas industry towards maintaining highest level of safety standards. Shri M Gupta is blessed with mature, amicable and pleasant personality. He superannuated as Additional Director (P&E), OISD on 31st July, 2018. OISDians extend warm wishes to him in his future endeavours.

Outgoing Officers

Shri Pankaj Bhattacharjee

He is a Chemical Engineer and a doctorate in management with 28 years of rich experience in E&P industry. He has rendered services in both onshore and offshore assets of ONGC in the areas of gas processing plants commissioning, process engineering operation, offshore safety etc. He joined OISD on 19th May' 18 and is credited with multifaceted work including amendments in OMR-2017 and formulating decommissioning guidelines policy for offshore assets. He joined back his parent company ONGC as DGM(P) HSE-MH Asset after release from OISD on 28th Mar' 18.

Shri SK Bagchi

He is a Metallurgy Engineer from Jadavpur University and joined OISD as Additional Director (Asset Integrity) on 06th Jun' 12. He has more than three decades of experience in the field of inspection, corrosion, failure analysis etc. He visited Trincomlee, Lanka IOCL as an expert from IOCL, HQ for the health assessment of more than 100 years old riveted storage tanks. He also worked on secondment from IOCL in KNPC, Kuwait and Qatar Gas. He joined back his parent company IOCL as GM (ES & Insp), Haldia Refinery after release from OISD on 17th Apr' 18.

Incoming Officers

Shri Naba Kumar Baishya

Joined OISD on 19th Apr' 18 as Additional Director (Process & Engineering) from IOCL on deputation. He is Mechanical Engineer from REC Silchar. He has 25 years of experience in the fields Maintenance and Project.

Shri D. Kalyan Verma

Joined OISD on 21st May' 18 as Joint Director (MO – POL) from BPCL on deputation. He has done B.Tech. (Electronics Engineer) from SPCE, Mumbai. He has 15 years of experience in Retail Marketing Operations and Sales which include tenures as Location In-charge, Plant Safety Officer and District Sales Officer.

Ms. Treasa Flower Jose

Joined OISD on 1st Aug' 17 as Assistant Director (Finance). She is Post Graduate in Commerce from Calicut University, Kerala and did PG Diploma in (HR) from Annamalai University, Tamilnadu. She joined IOCL in 1988 & worked in Refinery HQ finance deptt. for 26 years in different sections. She has also worked in Panipat Refinery & Petrochemical Complex as Accounts Officer.

Shri Navneet Kumar Sharma

Joined OISD on 25th May' 18 as Joint Director (PL) from GAIL on deputation. He is an Electrical Engineer from Dayalbagh Deemed University Agra and also completed Part time MBA in Marketing from Agra University. He has 18 years of experience in pipeline operations and maintenance.

Shri Arun Kumar

Joined OISD on 15th Jun' 18 as Additional Director (E&P) from ONGC on deputation. He is Mechanical Engineer from Institute of Mechanical Engineers, Mumbai. He has 34 years of experience which include Oil Well Drilling, Rig Building and Directional Drilling. During his service he has served both in onshore and offshore assignments.

News in Brief

Steering Committee meeting

53rd Steering Committee meeting held on 13th Apr' 18 with representatives from Oil & Gas industry (Principal Panelists) at OISD, Noida.

Some of the major points discussed during the meeting are as under:

- Adoption of New/ Revised OISD Standards.
- OISD's ESA Plan vis-à-vis Actual for the year 2017-18 of all sectors – E&P, Ref & GPP, Pipeline and Marketing groups.
- Review of the implementation status of critical ESA/SSA recommendations pending for more than two years.
- Incident Analysis for last three years and discussions about few bothering incidents across industry segment.

Technical Seminar/ Conference/ Workshops

Technical Seminars/ Conferences/ Workshops for the oil industry are conducted by OISD to discuss the latest technological developments, sharing of incident experience etc.

Many observations / recommendations being made during OISD audits should have been ideally reflected in the internal audit of the location. Hence need was felt to train the internal auditors of OMC.

- **Workshop for auditors on "Audit of LPG Bottling Plant"**

One-day workshop for Auditors on "Audit of LPG Bottling Plant" was organized by Marketing Operations (LPG) group of OISD

a) at BPCL LPG Bottling Plant, Rajkot on 6th February 2018

b) at HPCL LPG Bottling Plant, Ajmer on 26th April 2018

c) and two day workshop at Bengaluru during 15th - 16th June 2018

The workshop was held for providing training to Auditors on methodology to be adopted for efficient audit of LPG Bottling Plant, common observations during audit, discussion on audit points and presentation on document checking.

- **Workshop for auditors on Mounded Storage Vessels and its Cathodic Protection System.**

One day "Workshop for Auditors for Mounded Storage Vessels (MSVs) and its CP System" was organized by Marketing Operations (LPG) group of OISD

a) at BPCL LPG Bottling Plant, Rajkot on 7th February 18

b) and at HPCL LPG Bottling Plant, Ajmer on 27th April 2018.

The workshop was held for providing training to Auditors for checking the CP system of MSVs to confirm effectiveness / adequacy of the installed CP system as per OISD guidelines / NACE / ISO standards.

Evaluation of Functionality checks of the critical firefighting equipment like HVLRMs, ROSOVs, RSFPS, MEFG etc., at Marketing (POL) Installations – Another Safety enhancement initiative by OISD started in FY 2017-18.

OISD, during safety audits of installations, has been laying more focus on the functionality checks of the critical firefighting equipment like HVLRMs, ROSOVs, RSFPS, MEFG etc. It may be mentioned that such state of the art firefighting equipment were installed in the industry as part of MB Lal Committee recommendations.

In this regard, a comprehensive check list for checking the performance of such equipment for any given installation has been developed; and during audit of the installation detailed functionality checks of such fire critical equipment is ensured by OISD team.

As on 31st Mar' 18, out of a total of 290 POL installations of all the three OMCs put together, (locations except Class C/excluded petroleum & locations under resitement), functionality checks of 100 such installations have already been completed and for balance 190 locations, such checks shall be completed in the next two years.

Streamlining Safety Audits Frequency of POL Installations based on Hazard Potential.

Since the current fiscal year, OISD has started the process of fixing the Safety Audits frequency of POL Installations based on the hazard potential of such Installations. Installations having aggregate storage capacity of more than 1 Lac KL Petroleum shall be audited every five years in place of the existing seven years' frequency.

Safety audit of all the POL installations having aggregate storage capacity of more than 1 Lac KL Petroleum, which were due for audit as per revised frequency of five years during the current year i.e. 2017-18 has been completed.

Capability Building of Internal Auditors of Oil & Gas Companies

For enhancing the quality of Internal Safety Audits at Oil & Gas Installations, a new capability building initiative, OISD has been organizing dedicated workshops for the Internal Auditors of the Oil & Gas Companies. In this regard, five workshops specifically for internal auditors of LPG Marketing Organizations have already been organized. It is planned to extend such trainings to other sectors of Oil & Gas Industry in future.

World Environment Day celebration at OISD

Oil Industry Safety Directorate (OISD) celebrated the

World Environment Day on 5th Jun' 18 at its office at NOIDA. “Beat Plastic Pollution” was the theme for World Environment Day (WED) – 2018, which invites us all to consider how we can make changes in our everyday lives to reduce the serious burden of plastic pollution on our natural places, our wildlife as well as our own health.

The programme commenced with tree plantation by ED,OISD followed by pledge taking by all executives and staff of OISD office. Speaking on the occasion, ED,OISD shared his thoughts about the imminent danger of exponential accumulation of plastic trash in our country and the world as a whole. He emphasized that although it is not possible for mankind to live without plastic at the current age of human civilization, yet to combat the menace of plastic pollution, each of us can contribute positively through changes in our day to day living style such as avoiding polythene bags, other plastic items, choosing alternative environment friendly items and also by reusing plastic to the extent possible. He also stressed that these efforts should not be limited to just a few days beyond the world environment day; but should be sustained to attain a fruitful result and a healthy environment for our future generations.

Several promotional activities like quiz competition, slogan completion, poetry recitation etc. were organized to commemorate the occasion.

4th International Yoga Day celebration at OISD

The 4th International Yoga day was celebrated on 21st June, 2018 with full enthusiasm by all OISDians. Yoga Day has become one of the biggest mass movements in the quest for good health and well-being. To make the event successful all OISDians assembled at OIDB Auditorium and performed Yoga with experts from Sivananda Yoga Centre, Noida. The program emphasised on positive aspects of practicing Yoga & Meditation for overall health benefits.

Master Pawan Goyal son of Mr Mahesh Goyal, Joint Director (MO-LPG), OISD secured All India Rank–4 in India's most prestigious entrance examination JEE (Advance)-2018 conducted in May' 18 for admission in premier institutes of country i.e. IITs. Earlier this year he secured AIR-6 in JEE (Mains) conducted in Apr' 18 which is the only exams for entrance to NITs & IITs of the country. He secured highest marks 350 out of 360 in JEE (Mains). He has now joined IIT, Mumbai.

Pawan has been consistent in his studies since class X and represented India at international level in various Olympiads. He won GOLD MEDAL in 12th International Junior Science Olympiad (IJSO) held at South Korea in Dec '2015. He was also selected for National Talent Search Examination-2015-16, conducted every year at National Level. He secured AIR-2 in Kishore Vaigyanik Protsahan Yojana (KVPY)-2016-17, one of the prestigious exam being conducted at National level for the students having orientation for research in Science stream for admission in Indian Institute of Science – Bangalore.

Pawan also represented India in 48th International Physics Olympiad in 2017 held at INDONESIA and won Silver Medal for the country. This year also he represented in 49th International Physics Olympiad held at Lisbon, Portugal in last week of Jul' 18 and won gold medal for India. This time Team India created history by winning 5 gold medals.

Miss Bhagya Jayant and Miss Bhavya Jayant, daughters of Mr Dharmvir, Additional Director (P&E), OISD secured 92.2% and 88.4 % marks respectively in class XII exam, from Delhi Public School, RK Puram, New Delhi. They both have joined Civil and Environmental engineering branches respectively in Delhi Technological University (DTU).

Miss Kanza Zafar, daughter of Mr Zafar Ali, Joint Director (E&P), OISD secured 87.2% marks in class XII exam, from senior secondary school for girls, A.M.U Aligarh. She has joined Mechanical engineering in Jamia Millia Islamia University, New Delhi.

Miss G.G. Aishwarya, daughter of Mr G.M. Gopinath, Joint Director (Admin), OISD, secured 87% marks in class XII exam from Billabong high international school, Noida. She has joined CA from ICAI, New Delhi.

OISD family congratulates Pawan, Bhagya, Bhavya, Kanza, Aishwarya and their family members and wish success in all their future endeavours.

Endeavour towards better Environment

Plantation of 100 trees by ED, OISD, Directors (MO-LPG and E&P), officials, staff and drivers of HPCL LPG Bottling Plant, Yediyur on 14th June 2018.

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Opinions expressed by the authors are their personal and do not necessarily represent or convey the organisation's point of view.

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Oil Industry Safety Directorate
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