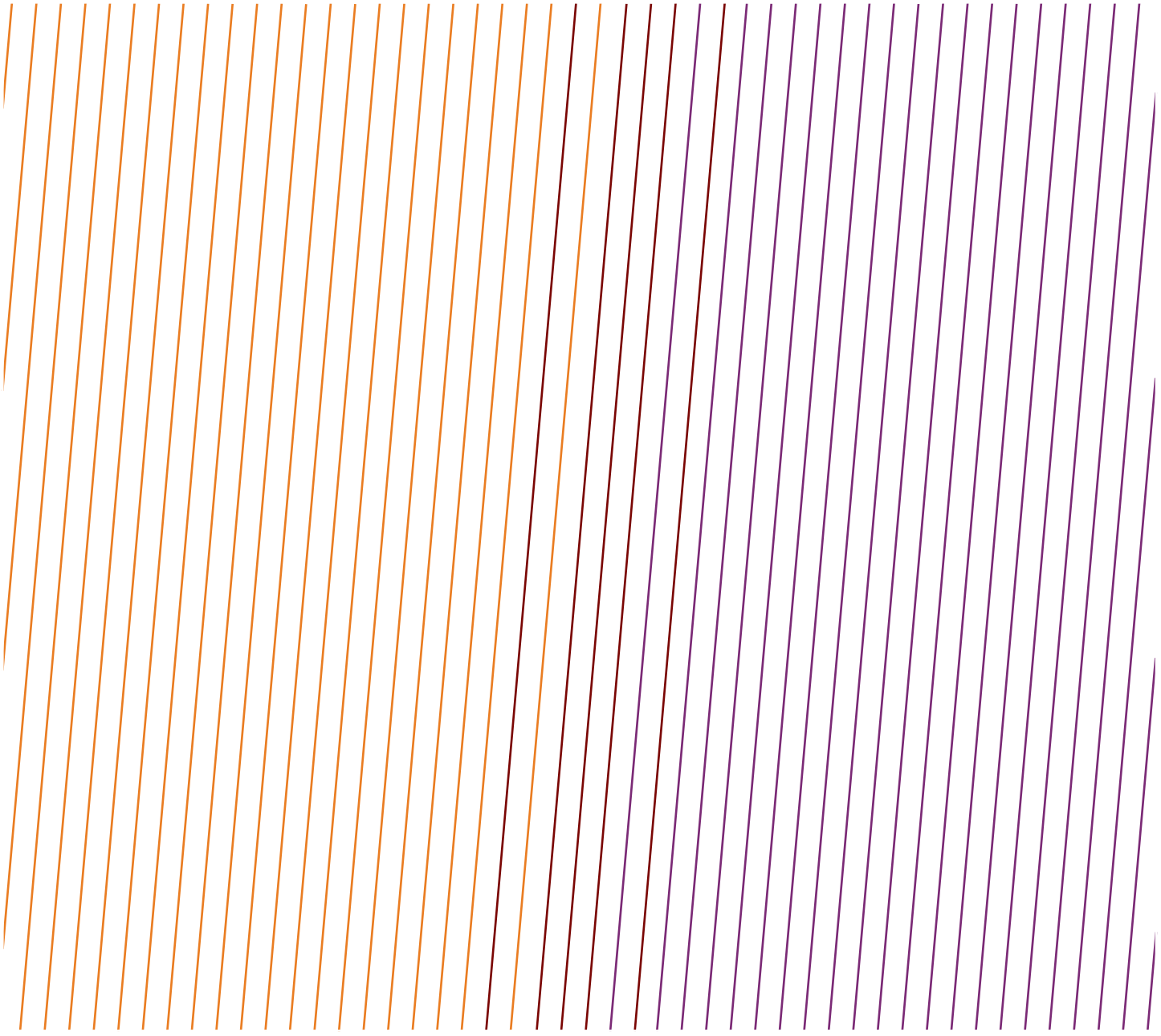
International Association of Oil & Gas Producers

REPORT 2022pfh | JULY 2023

DATA SERIES

Safety performance indicators – Process safety events – 2022 data

Tier 1 PSE, fatal incident, and high potential event reports



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REPORT
2022pfh

JULY
2023

DATA SERIES

Safety performance indicators – Process safety events – 2022 data

Tier 1 PSE, fatal incident and high potential event reports

Revision history

VERSION	DATE	AMENDMENTS
1.0	July 2023	First release

Contents

TIER 1 PROCESS SAFETY EVENTS 2022

Tier 1 PSE are predominantly lagging indicators related to Loss of Primary Containment (LOPC) referred to as a Process Safety Event (PSE). The Tier 1 KPI records events with greater consequence within the four-tier approach. For more information see the introduction and IOGP Report 456, Process Safety – Recommended Practice on Key Performance Indicators

IOGP has been gathering Tier 1 PSE narrative reports from its Members since 2013. These include Tier 1 PSE reported both by companies and contractors. Event reports are categorized by region, country, location (onshore/offshore), cause, activity at the time of the event, and, from 2019 onwards, point of release.

The information provided here is not detailed; often the root cause of an incident cannot be established. However, the information should assist organizations to identify likely hazards, human particular, it allows organizations to question whether their own Safety Management System would have prevented the event occurring and mitigated its consequences.

The database from 2020 onwards is available and searchable at https://data.iogp.org/ProcessSafety/Tier1PSE.

Note that a descriptive report has not been provided for every Tier 1 PSE reported.

This database is a tool for learning and should not be considered a complete record of Tier 1 PSE in the upstream oil industry or the IOGP Membership.

AFRICA ONSHORE

DATE: Oct 23 2022
COUNTRY: Algeria
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Emergency shutdown
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (not at intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

INCIDENT DESCRIPTION:

Gas release in the decommissioned flare pit flowline.

WHAT WENT WRONG?

Backflow: dilution water line connected with hydrocarbon manifold since check valves failed due to internal corrosion. Past modification of facilities non conformant.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Backflow: dilution water line connected with hydrocarbon manifold since check valves failed due to internal corrosion. Past modification of facilities non conformant.

BARRIERS: No Barriers Allocated

CAUSAL FACTORS: No Causal Factors Allocated

DATE: Mar 5 2022
COUNTRY: Angola
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Pump
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

The oil field experienced a fire incident that originated from oil export pump.

WHAT WENT WRONG?

Friction and leak of the oil export pump.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. SWP54 critical safety devices management - never accept deviations from SWP54 requirements. Leaders need to respond to deviation/ non-conformance alert/ warning from the workforce. Make visible to OLT information/reports of bypassed critical safety devices.

2. Risk Assessment/Operating Procedures - always reassess risks involving cross-functional teams/SMEs, update procedures (wells safe rate and high BSW crude export) and reinforce use of same.

3. Design limitations - always respect design limitations for wells, equipment and systems.

4. Design and mitigation efforts - always assess risks and understand impacts of delaying projects (e.g. de-sanding unit). budget cuts imposed by external stakeholders should only be accepted after fully assessing/understanding long term asset impacts.

BARRIERS:

Hardware Barrier Failures: Detection Systems

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Inadequate use of safety systems

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Sep 17 2022
COUNTRY: Congo
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

During the preparation of the maintenance operation, an operator noticed the presence of a hydrocarbon leaking from 2" purge line connected to the 8" line.

WHAT WENT WRONG?

Corrosion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Routine purge and adequate inspection are necessary.

BARRIERS:

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Risk assessment and control

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate supervision

DATE: Nov 18 2022
COUNTRY: Congo
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Planned shutdown
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Following a shut-down of A-chain heaters for valves maintenance, a leak was identified on a flange on the 8'' oil outlet line of the heater.

Oil remained in the retention and was recovered with a vacuum truck.

WHAT WENT WRONG?

Rupture of the seal between flange. Insulation Procedure is not adequate:

- not taking into account the temperature of the furnace before insulation
- non-definition of furnace cooling time before insulation
- Non-use of the drain line to the drains closed

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Update isolating procedure by integration of the cooling time and the minimum Temperature of the chimney to be reached before isolating the lines.

2. Make operators aware of the update of the procedure.

3. Make the production and maintenance teams aware of the involvement of the inspector before intervention.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Asset design and integrity

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

DATE: Mar 5 2022
COUNTRY: Egypt
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Pipeline operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore flowline
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

On 5th March at 9:30 pm, an underground 6" flow line was punctured by a sub-contractor during road piling works. Sub-contractor was not supposed to commence work before a Company rep was on site.

WHAT WENT WRONG?

The pipe punch occurred as a result of the pilling machine hitting the pipeline, causing its rupture and release of natural gas and condensate to atmosphere. The escaping natural gas caused a loud sound blast as the compressed gas spread outwards from the ruptured 6" pipe section. Fortunately, no fatalities or injuries occurred.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Incident Investigation found issues with the fact that this flowline was not buried deep enough according to required construction regulations (an historical issue relating to original construction), but also absence of pipeline/ demarcation and 3rd party contractor compliance with required work practices/standards (e.g. lack of underground services survey, precautionary tapes, signage and related supervisory controls etc).

BARRIERS:

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Nov 6 2022
COUNTRY: Gabon
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Pump
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

On Sunday, November 6, 2022, at approximately 1:25 a.m., an emergency shutdown of the facility occurred. At the same time, an operator in the area on tour noticed a fire at the crude export pumps. The operator immediately alerted the control room, which triggered the emergency response (1111).

The night shift (3 staff members) went to the muster point 50 m from the station, as required by the emergency procedure. At approximately 1:35 a.m., the First Response Team (FIT) arrived at the station and after a quick assessment of the risks and the extent of the flames, they decided to attack the fire safely, using the fire extinguishers present in the station. It should be noted that 100% of the fire extinguishers at the site were used and replaced within 3 days.

WHAT WENT WRONG?

Operational Risk Assessment (ORA) procedure is available, but not understood and even less rigorously applied on site.

Poor management of operational changes on site without technical authorities.

Safety has been compromised in favour of production.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Organize awareness and training sessions on operational risk management procedures. Emphasizing the risks associated with all operational changes.

Follow recommendations from previous similar incidents.

Strengthen the risk assessment process for any change or validation of a project or technical solution – all operational changes must be validated by the discipline's technical authority.

Re-evaluate the ordering process for safety critical equipment and spare parts by involving the technical authorities.

A Company value is Act Responsibly and Safely: This is what our operations team demonstrated by attacking the fire at a stage where they felt safe to act.

Operating safely is a Company value, Safety is a priority at this Company and cannot be compromised.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Feb 17 2022
COUNTRY: Gabon
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We stay within operating limits

CATEGORIES:

PRD release to atmosphere above threshold in any 1 hour period and results in liquid carryover or discharge to a potentially unsafe location or onsite shelter in place or public protective measure (e.g. road closure)

INCIDENT DESCRIPTION:

In the morning, personnel reported presence of crude in the pig launcher area, close by export lines.

PSV on 16" line identified as the origin of the release.

Pressure trends analysis spotted 4 discharges from the PSV, overnight/early morning.

WHAT WENT WRONG?

Design was not appropriate for the operation.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Design needs to be reviewed. Lack of knowledge about contractual conditions between operators.

BARRIERS:

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Management System Element Barrier Failure: Risk assessment and control

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Aug 16 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We stay within operating limits

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

At about 1500hrs, August, 16th 2022, the DCS operator noticed that delivery pump (A) at unit 1300-V-2 has tripped. He immediately informed the plant operator and maintenance team. The standby delivery pump (C) was immediately engaged but the level in the vessel 1300-V-2 continued rising. In order to manage the rising level in the vessel, the inflow was restricted but to no avail, thereby resulting in stoppage of flow into the vessel. While these operations were going on, liquid carryover was noticed at the LP flare. The carryover to the flare stack was put under control at 15:25hrs.

WHAT WENT WRONG?

- Failure of unit 1300-V-2 separator delivery pump (A) due to thermal overload
- Liquid level build up in unit 1300-V-2 vessel due to failure of delivery pump A
- The pump-(B) was leaking and also not effective.
- Standby delivery pump (C) was engaged but the level in the vessel 1300-V-2 kept rising due to inefficiency of the pump and leakages.
- Failure of 710-BT pneumatic double diaphragm pump
- All the pumps at unit-710-BT are non-functional
- During the period of the incident, the liquid level in unit 720 pit was very high and the pumps at unit 720 were also not functional
- Overflow of unit 710-C flash tank due to stoppage of flow to unit 1300-V-2 separator vessel
- Failure to implement MoC for operating the plant without 710-BT transfer pumps and use of pneumatic double diaphragm pumps
- Delay in attaining operational control

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Ensure to always comply with MoC procedure for all operational and field modification changes.
- Ensure timely implementation of corrective actions of defective transfer pumps
- Always ensure effective monitoring of liquid levels and controls from DCS and field end.
- Improve the level of communication between teams for effective implementation of operational controls
- Report & manage any loss of containment on site
- Stay within safe operating limits
- Report & take interim mitigating measures for impaired SECEs

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Jan 16 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Fired heater/Boiler/Furnace
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

During the molecular sieve bed "C" alignment from stand-by mode to heating mode one MOV fails in closed position, this failure led to an overheating inside the coil tube resulting in a rupture and release of gas inside the molecular sieve shell. The gas met the pilot flame resulting in an internal fire and explosion.

WHAT WENT WRONG?

Logic failure: If one valve is Stuck (in close position) during MOVs and UVs auto positioning to start the heating cycle, the logic still goes ahead with the sequence change operation in spite of the MOV Malfunction alarm.

Interlock System fault: FSLL 129: the primary element FT was in failure and FSLL in trip, as consequence the low-low condition remain undetected, TSHH 138A: TSHH micro switch was faulty, as consequence very high regeneration gas temperature remain undetected, TSHH 136A: TE transducer was not selected for correct length. Thermocouple was not touching the thermo well tip and could not measure the actual very high temperature at the stack. As a consequence the very high stack temperature remained undetected.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Continuously cascade awareness on effective and proactive maintenance programme for safe and efficient plant operation.
- Ensure routine inspection and reliability assessment of the heater SECEs, temperature and flow transmitters and switches.
- Improve on the inhibit and override system of the PLC panels and replace the passing heater regeneration gas inlet and outlet valves.
- Ensure the right design specification of material during corrective maintenance.
- Effective reporting of UA/UC/SWA to enable improvement of safe systems of work and prevent/reduce risk is very important and shall be continuously reminded to all personnel.

BARRIERS:

Hardware Barrier Failures: Process Containment

Hardware Barrier Failures: Shutdown Systems – including operational well isolation and drilling well control equipment

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Equipment or materials not secured

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

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DATE: Oct 17 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Breaking Containment Locations: Breaking containment location
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

During the unauthorized operation to use the vacuum truck to drain the condensate from slug catcher in unit 2260, free vaporized condensate formation lead to the creation of an charge that ignited the condensate vapour and consequently fire on the slug catchers and vacuum truck through the connecting hose to the plastic receptacle.

WHAT WENT WRONG?

- Vacuum truck was on standby at OBOB upon return from the oil centre after discharge, to evacuate more liquids from the effluent treatment unit .
- A support staff from gas operations brought the vacuum truck to the Slug catcher, opened the standpipe to the receptacle placed under the standpipe for the vacuum truck to commence sucking.
- Support staff left the condensate-draining operation unsupervised, and left for an unknown location/task, no valid PTW, No Risk assessment, and Work Methodology.
- The Slug Catcher SDVs were on override.
- Failure to ensure effective grounding of the vacuum truck to avoid release of static electricity.
- Static discharges ignited the condensate vapours created during the ongoing draining.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Continuously cascade awareness on proper pre-job planning and ensure adherence to work best practices for all tasks including routine activities.
- Ensure proper supervision is provided to cover all operations including routine activities to ensure safe system of work are properly established.
- Ensure adequate method statement/PTW and risk assessment for all activities including routine jobs, RA reviewed during TBT with all team members prior to all tasks.
- Continuously carry out refresher training for personnel including contractors to ensure safe workplaces are continually improved.
- Continuously carry out necessary maintenance in all facility to assure plan integrity and assure safe place.
- Effective reporting of UA/UC/SWA to enable improvement of safe systems of work and prevent/reduce risk is very important and shall be continuously reminded to all personnel.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation intentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CONDITIONS): Work Place Hazards: Hazardous atmosphere (explosive/toxic/asphyxiant)

PROCESS (CONDITIONS): Organizational: Inadequate supervision

DATE: Dec 10 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

After a maintenance activity on a separator, an incorrect pressurization procedure was carried out. Part of this procedure was opening an automatic valve (UV-45) in order to pressurize the manifold downstream of the separator. This action resulting in high noise, vibration phenomena and mechanical stress that leaded to a 2" nipple valve failure and flammable gas leak.

WHAT WENT WRONG?

- Inability to retrieve necessary documents such as Pressure trend of the header PS -320 header from the DCS.
- Gauges were not installed downstream and upstream the UV-45.
- Use of flammable gas for pressuring the vessel for leak test.
- Poor illumination at the Plant at night.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Continuously carry out refresher training for personnel including contractors on hazard recognition, risk assessment to ensure safe workplaces are continually improved.
- Ensure proper supervision is provided to cover all operations including routine activities to ensure safe system of work are properly established.
- Schedule and implement training of personnel and review of operational technicalities associated with task assigned to personnel.
- Continuously carry out MoC procedure and assessment with for all modifications including minor/major modifications.
- Continuously carry out necessary maintenance in all facility to guarantee plant integrity and assure continuously safe work place.
- Effective reporting of UA/UC/SWA to enable improvement of safe systems of work and prevent/reduce risk is very important and shall be continuously reminded to all personnel

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation intentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Mar 12 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Gas release from vent at a manifold.

WHAT WENT WRONG?

Human error.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

While carrying out well integrity test (OPSWIT), review impact of safeguard and facility availability and take actions to eliminate potential impact; Function testing after 3rd party/vendor activities are completed to create an extra layer of assurance around implementation.

BARRIERS:

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Organizational: Inadequate supervision

DATE: Aug 1 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 1
ACTIVITY: Production operations
MODE OF OPERATION: Turnaround
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

Fire incident impacted 2 contractor personnel during hot work activity.

WHAT WENT WRONG?

Human Error.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Tank certification as hydrocarbon free: Tanks shall be certified as 'gas free' after tank draining and cleaning, in fact, free of residual hydrocarbons. Personnel certifying tanks shall be aware of all potential locations of residual hydrocarbons, including those where use of standard gas detector would be unlikely to detect their presence.

2. Tank cleaning: Cleaned tanks shall be free of residual hydrocarbons. Tank cleaning personnel shall have 'front of mind' awareness of potential locations of residual hydrocarbons.

3. Emergency notification: Emergency service personnel shall promptly and successfully notify in case of emergencies. A consistent (across assets/locations) and simple process shall be in place for company staff and contractor personnel to provide emergency notification.

4. Personal protective equipment (PPE): Contractor personnel shall understand and fully comply

with the PPE Manual.

5. DEP standard drawing for a stilling well: Company and contractor personnel should be skilled enough to understand and correctly interpret the drawing content.

BARRIERS:

Hardware Barrier Failures: Ignition Control

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

DATE: Sep 3 2022
COUNTRY: Tunisia
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore flowline
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

On 09/03/2022 around 8 p.m., a military colonel called our security officer informing him of a crude oil leak spotted by a military drone in the perimeter of two wells. The security officer immediately informed the production supervisor. A team has been assembled to search for the leak. After three hours of searching, the leak was detected at a 12" flowline. Immediately the three wells and the flowline were isolated. The Corrosion and crack at pipeline level 12 caused this leak.

WHAT WENT WRONG?

- Inadequate performance of inspection/controls. The thickness measurement did not cover the section.
- Lack of coating of the corroded line.
- Pipe laid directly on the ground (not supported).
- Pipe without cathodic protection.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Launch a contaminated soil collection campaign.
- Evaluate the use of a more efficient method of pipe thickness inspection to cover all pipes.
- Evaluate the feasibility of replacing all corroded and obsolete flow lines and pipes with new pipes with all the necessary protections, including cathodic protection.
- Enhance field control rounds with detailed planning.
- Raise the corroded section of the pipe with suitable support.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

AFRICA OFFSHORE

DATE: May 30 2022
COUNTRY: Angola
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Execution of a procedure to de-isolate a biocide tank and return it to service after a routine maintenance activity resulted in the opening of a valve that provided a flow path from the storage tank to secondary containment, which then overflowed sending biocide to the hazardous drain and eventually to the main deck below.

WHAT WENT WRONG?

- The procedure was incorrect for the operation being conducted.
- Dirty material in the secondary containment prevented flow to the intended drain and resulted in an overflow to the main deck.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Deactivate the ability to 'copy' isolation plans from one system to another.
2. Assess the isolation templates for similar equipment with the same design to ensure that isolation design is correct.
3. Reinforce during the safety stand-downs the importance of redlining and updating procedures to highlight errors and drive resolution.
4. Prioritize the on-going project to unblock/repair drain lines.
5. Implement plan to frequently inspect/test drain lines.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Plans and procedures

Management System Element Barrier Failure: Monitoring, reporting and learning

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Failure to report/learn from events

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DATE: Oct 17 2022
COUNTRY: Angola
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

General alarm sounded and ESD1/G automatically triggered due to gas detection on module P5.

Cargo tank HC Pressure Vacuum breaker was found low level (15% instead of 60%) resulting on gas release on top side.

WHAT WENT WRONG?

Cargo operator did not inform supervisor of his decision to drain the water. He opened the HC PV breaker drain valve and left for another task.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

In action plan: Define Standard operation procedure, including communication.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Asset design and integrity

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Jan 9 2022
COUNTRY: Egypt
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Subsea: Subsea pipeline/flowline
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Oil leak occurred on 18" sea line from MWP1 to the plant. Leak resulted in an oil spill in offshore Sinai.

WHAT WENT WRONG?

- Corrosion inhibitor injection system is in place but all chemicals are being injected based on chemical provider recommendations only, without a proper Corrosion Risk Assessment.
- The leak happened several hours (al least previous night) before its notification.
- TIER 1 Equipment were not fully available and ready to be deployed at site and TIER 2 Equipment was stored at El Tor city and took almost 7 hours to be deployed

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Corrosion Inhibitor injection shall be based on dedicated Corrosion Risk Assessment and analysis of corrosion mechanism occurring.
- Any loss of primary containment shall be promptly reported and notified to ensure its proper management and timely activation of the needed Emergency Response level.
- Status and availability of TIER 1 anti-pollution equipment at site shall be periodically checked to ensure it is fit for purpose or replaced if needed.
- TIER 2 anti-pollution equipment shall be stored in location that allows rapid intervention of specialized contractor in case of emergency.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Response to emergencies

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate communication

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DATE: May 4 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Loss of containment of crude oil from corrosion hole in oil pump outlet line during cargo tank loading operation.

WHAT WENT WRONG?

Accelerated corrosion not identified on piping.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Corrosion on line occurred earlier than anticipated. Increased line inspection to detect corrosion failure.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Mar 8 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Completions
MODE OF OPERATION: Well flow testing
POINT OF RELEASE: Equipment: Filter
PROCESS SAFETY FUNDAMENTAL: We recognise change

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Test separator strainer flange leak resulting in gas release.

WHAT WENT WRONG?

Gasket used in incompatible service resulting in failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Management of change not utilized when changing service: reinforce management of change requirements.

Insufficient communication in shift handover: transition handover to formal verbal meeting.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Risk assessment and control

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate communication

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DATE: Aug 13 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We watch for weak signals

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Sheared bolts on inlet filter drain outlet resulting in gas release.

WHAT WENT WRONG?

Excess corrosion on flange studs which were not included in fixed equipment inspection.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Inspect flanges in similar service for corrosion and replace studs where required.

BARRIERS:

Hardware Barrier Failures: Process Containment

Hardware Barrier Failures: Shutdown Systems – including operational well isolation and drilling well control equipment

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Asset design and integrity

Management System Element Barrier Failure: Monitoring, reporting and learning

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Failure to report/learn from events

ASIA/AUSTRALASIA ONSHORE

DATE: Feb 12 2022
COUNTRY: Australia
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Pump
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Spill at M Station into vegetation from pump failure.

WHAT WENT WRONG?

Production pump failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Jul 10 2022
COUNTRY: Bangladesh
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

At 02:30 hrs. on 10th July, 2022; produced water leakage found through the multistage restricted orifice body of a test separator, followed by gas leak. Plant ESD was activated from control room ESD PB panel. Estimated 1-2bbls produced water released to secondary containment.

The Test Sep is Out of Service until complete inspection and replacement of RO.

Note: LALL did not activate and shut the Separator.

WHAT WENT WRONG?

Water leak on test separator led to gas leak.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Organizational: Failure to report/learn from events

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DATE: Sep 21 2022
COUNTRY: Malaysia
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Pipeline operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: We watch for weak signals

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Pipeline leak due to soil movement.

WHAT WENT WRONG?

Soil movement due to geography effect.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Perform continuous review of high-risk geo-hazard areas along the pipeline route.

2. Ensure integrity of all isolation valves & functioning as per design intent by performing surveillance or pigging activity.

3. Include weather factors (e.g. torrential downpour) when determining frequency of pipeline assessment & maintenance plan.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Surveillance, operator rounds and routine inspection

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

DATE: Aug 13 2022
COUNTRY: Malaysia
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Start-up
POINT OF RELEASE: Equipment: Fired heater/Boiler/Furnace
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

Employee burned during maintenance of burner.

WHAT WENT WRONG?

Isolation issue.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Ensure Hydrocarbon free and confirm isolation.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Servicing of energized equipment/inadequate energy isolation

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Work Place Hazards: Hazardous atmosphere (explosive/toxic/asphyxiant)

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Oct 4 2022
COUNTRY: Malaysia
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Breaking Containment Locations: Sample system
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

Employee burned during sampling.

WHAT WENT WRONG?

Isolation issue.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Adequate RA before using undesignated sample point.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Servicing of energized equipment/inadequate energy isolation

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Oct 8 2022
COUNTRY: Pakistan
FUNCTION: Production
NUMBER OF DEATHS: 1
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: We stay within operating limits

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

During corrective and preventive maintenance activities on a wellhead Compression unit, the technicians used the pressurised gas line downstream (650 psgi) to test the valve after maintenance, because the compressed air that should be used was out of service. Considering that the design pressure of the valve was 115 psgi, the valve actuator burst impacting one technician and the nearby line resulting in a fatality and a pressurized gas leak.

WHAT WENT WRONG?

- Risk Assessment not revised following the deviation from SOW.
- Tight schedule, only 1 Instrument team was on site to perform all the planned activities.
- Complacency due to routine activity, perceived as low risk, leading to overconfidence of workers.
- The Instrument Technicians themselves deviated from SOW without applying Management of Change process.
- Stop Work Authority not applied.
- Supervisors were present on site, but focused on other activities.
- Unavailability of radio device for communication between control room and work area leading to pressurized actuator for more than 7 mins.
- Lack of awareness of performing authority related to process hazards leading to risk underestimation.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Any change or deviation to design, asset, process, work procedure or practices shall be accurately identified, reported and assessed by competent and trained personnel.
- The job shall be suspended in case of change in the Scope of Work and Risk assessment revised involving all the stakeholders.

- Ensure all personnel involved in the operation are aware of the operating instructions and methods of statement.
- Ensure proper communication among working team members on site.
- Ensure competence, awareness and training of the personnel involved in operations.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation intentional (by individual or group)

PEOPLE (ACTS): Following Procedures: Improper position (in the line of fire)

ASIA/AUSTRALASIA OFFSHORE

DATE: Aug 1 2022
COUNTRY: Malaysia
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Flexible hose/piping
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

After completing the offtake operation, observed crude oil leakage from the export hose of the FPSO. During the flushing activity before hose recovery, the hose burst, leading to a leak of remaining oil from the hose.

WHAT WENT WRONG?

Hose number 14 on the export hose string assembly leaked due to combination of factor including aging and external damage.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Management of Change.

Maintenance and Inspection.

BARRIERS:

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

DATE: Mar 3 2022
COUNTRY: Malaysia
FUNCTION: Production
NUMBER OF DEATHS: 1
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

A fire incident occurred at an offshore production platform during hot work activity inside a pressurized habitat for deck plate replacement near a Booster Compressor Suction Scrubber involving contractor personnel. The fire resulted in one fatality after three days of treatment at a burn intensive care unit, and one burn injury.

WHAT WENT WRONG?

Hot work activity carried out inside habitat on live HC piping.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Thorough risk assessment for any hot work activity during live plant environment.
2. Avoid erecting the habitat on the live HC line.

BARRIERS:

Hardware Barrier Failures: Process Containment

Hardware Barrier Failures: Ignition Control

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Following Procedures: Improper position (in the line of fire)

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

DATE: Oct 24 2022
COUNTRY: Malaysia
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Breaking Containment Locations: Breaking containment location
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Shutdown during breaking containment activity resulting in gas release.

WHAT WENT WRONG?

Equipment failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Always abide by Process Safety Fundamentals when working on equipment containing hydrocarbons.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

EUROPE ONSHORE

DATE: Mar 28 2022
COUNTRY: Croatia
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Pipeline operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Leakage of underground part of the steel collecting high pressure gas pipeline. Under high pressure (50 bar), 2000 cubic metres of gas (60% methane, 40% CO2) was released from the underground pipeline within 10 minutes.

WHAT WENT WRONG?

Mechanic failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Conduct NDT testing – wall thickness measurement on critical (high-pressure) pipelines.

BARRIERS:

Hardware Barrier Failures: Detection Systems

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate supervision

DATE: Nov 24 2022
COUNTRY: Germany
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Inside a 12 m long pipe for transporting wet oil, there was internal corrosion measuring approx. 8 mm. Unlike the surrounding line parts, it is not made of duplex steel 1.4462, but of unalloyed black steel with no obvious protection against internal corrosion. The clean oil has a temperature of approx. 50°C and therefore did not lead to an alarm when the existing thermal imaging camera exited, since an alarm only occurs at significant temperatures (flame detection in the event of a fire).

WHAT WENT WRONG?

Usage of a pipeline without adequate protection against corrosion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Check relevant system parts with regard to the correct design in steel to ensure no further other line section are undetected in carbon steel design.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Apr 9 2022
COUNTRY: Hungary
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: We recognise change

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Well line during production after the pipe break safety between two arcs for an approx. A 20 cm long straight pipe section. The length of the fissure is ~ 15 cm and 10 cm wide. It occurred due to material defect.

WHAT WENT WRONG?

Incorrect pipeline composition definition.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Improve the definition of the material composition of the pipeline taking into account the change of the produced fluids composition.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Aug 3 2022
COUNTRY: Hungary
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Instrumentation and small bore tubing
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

At 17:15 an ammonia spill occurred. The fire brigade was notified, no personal injuries occurred. The operators used all of the dedicated PPE. The level indicator was closed before the fire brigade arrived. The spilled ammonia was neutralized with fire water. The subsequent inspection revealed that the blowout occurred at the lower part of the level indicator of the ammonia storage tank.

WHAT WENT WRONG?

Lack of proper maintenance.

Unsafe equipment due to defects.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

More frequent inspection of the hazardous equipment.

BARRIERS:

Hardware Barrier Failures: Detection Systems

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate supervision

DATE: Jul 7 2022
COUNTRY: Romania
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Between July 7th and 11th, an oil-water spill occurred in a mountainous area 600m downhill from a partially buried pumping pipeline connecting the Park to the Tank Farm. The Loss of Primary Containment (LOPC) event lasted for 84 hours, until Monday July 11th (8:30 AM) when the pumping was stopped. Instruments readings and calculations indicate that an estimated 469 cubic metres gross oil-water volume were lost (168 tons oil and 270 m3 produced water). Pipeline operating pressure is approx. 1.5 bars.

WHAT WENT WRONG?

1. Improper decision making or lack of judgment
2. Inadequate maintenance/inspection/testing
3. Inadequate hazard identification or risk assessment

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Review the risk ranking of pipelines crossing environmental sensitive areas (e.g. oil export to terminal via swamp, river crossing, protected areas).
2. Review pipeline testing procedures and reassess the methodology for inspection for aging pipelines. Submit the updated procedure to specialized contractors.
3. HQ INT department to identify mitigation measures to reduce the risk to ALARP which will be aligned with the Asset Management (e.g. reducing operating pressure, increase the number of pipeline related inspections).
4. Review Emergency Response Procedure to ensure immediate responses when a significant change in operating parameters occurs.
5. Review internal regulations and reinforcing trainings on incident management to make sure that appropriate actions and materials are used for all LOPC scenarios.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Human Barrier Failures: Response to process alarm and upset conditions (e.g. outside safe envelope)

Management System Element Barrier Failure: Commitment and accountability

Management System Element Barrier Failure: Asset design and integrity

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Dec 14 2022
COUNTRY: Romania
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Other production
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We control ignition sources

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

During the welding works at a pipeline located near a saltwater tank, an explosion followed by fire occurred at the saltwater tank. The cover of the salt water tank was thrown away, damaging a nearby oil tank. Several barracks and equipment were damaged. Also some third parties buildings from the vicinity were damaged.

WHAT WENT WRONG?

The incident is under investigation.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Whenever possible, avoid hot work and consider alternative methods.
- Conduct effective gas monitoring in the work area using a properly calibrated gas detector.
- Ensure a proper isolation, blind the source of hydrocarbons, lock and tag.
- Ensure that personnel is qualified, familiar with the specific site hazards check and authorize all hot work and issue permits specifically identifying the work to be conducted and the required precautions.
- Contractors to provide proper supervision both operational and safety for workers conducting hot work company will not admit to start hot works if contractor supervisor is not on site during the entire work.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Organization, resources and capability

Management System Element Barrier Failure: Risk assessment and control

Management System Element Barrier Failure: Plans and procedures

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Servicing of energized equipment/inadequate energy isolation

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

PROCESS (CONDITIONS): Organizational: Inadequate supervision

EUROPE OFFSHORE

DATE: Apr 3 2022
COUNTRY: Norway
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Drilling
MODE OF OPERATION: Drilling
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

When refilling a crane with diesel, the area was abandoned with the result that the tank was overfilled. Most of it was collected in the machine room of the crane. But something also reached the sea via a cable feedthrough.

WHAT WENT WRONG?

Work practices and accomplishment - the team/entity did not obey rules/procedures/good working practices.

May include lack of oversight, lack of knowledge or compliance with procedures/regulations, failure to carry out safe job analysis (SJA), or deliberate action. Can also apply to cases where the work itself is not professional, or contrary to good practice.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Consider installing an auto stop on the filling system. See if there is a solution that forces personnel to be present and/or type of auto stop such as shutter.

Review with all crew of the current procedure for filling diesel at the crane. Point out the importance of following procedures and job descriptions.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Commitment and accountability

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation intentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: May 12 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Pipeline operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Crane operator filled the crane with diesel.

After 20 minutes he saw that there was a diesel spill at sea and stopped filling. Checked the system and saw that all were tight.

Support personnel discovered that the collection vessel under the chemical package (diesel pumps/chemical tanks) was full and that it was spilling over the edge.

The chemical package is placed on the hatch deck. The drain pipe on the collection vessel turned out to be clogged.

WHAT WENT WRONG?

Undesired behaviour - careless/unfocused/not observant/distracted.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review of the incident in the experience transfer team.

Update work permit, for filling diesel at the crane.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Commitment and accountability

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Aug 27 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Unspecified production
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

After O2 freeing of Condensate tank D, we had reached the next step, which was to put the tank into operation.

The interlock valve on a valve that goes from condensate tank D to the Atmos vent had broken and allowed us to operate the valve in the wrong direction, which happened. The valve was opened when it should have been closed.

Further into the process, we came to a step where we had to open a valve that puts condensate tanks A, B, C, D together, which then goes on to the P/V breaker and the VRU. Because the valve that went to the Atmos vent had been opened by mistake in a previous step, fuel gas went from the A, B, C tank through the D tank and on to the Atmos vent.

This was quickly discovered when we first tripped the VRU when the gas went to the Atmos vent instead of the VRU, but also because the pressure controller in the A, B and C tanks increased with fuel gas to compensate for the lower pressure without actually increasing the pressure on the thoughts.

We stopped, opened all valves according to P&ID and discovered the error that had occurred. We managed to find out the way forward to be able to operate the valves safely.

But we have therefore inadvertently driven gas to the Atmos vent without meaning to.

Gas that has gone to the atmospheric vent header is calculated to be about 1000Sm³.

WHAT WENT WRONG?

- Technical conditions - the product was not satisfactorily tested/inspected/certified.
- Safety and security measures/marking/sign/warnings - safety/security system disabled/disconnected.
- Undesired behaviour (internal and external) - careless/unfocused/not observant/distracted.

Comments:

- The interlock valve system contained too many errors and shortcomings that led to dangerous situations where it was difficult to make the right decisions.
- Operator opened a valve when it should actually have been closed. The interlock valve system should also have been a barrier to prevent this from happening.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Remove or rebuild interlock valve MPCU system.
- Update operating procedure.
- Create new ICCs that match operating procedure.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Protective Systems: Inadequate security provisions or systems

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Oct 12 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Sight glass
PROCESS SAFETY FUNDAMENTAL: We stop if the unexpected occurs

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Replacement of valves for sight glass. A process engineer and a mechanic carried out the work.

The drain valve at the bottom had to be replaced. It was not possible to use these valves to drain the sight glass.

It was rusted together and it was not possible to dismantle the valves with a spanner.

Chose to cut the bolts. Trusting that the valves top/bottom to the sight glass kept tight, they did not.

Mounted on a blind, the level was then too low on the 21V7025 P/V breaker.

Gas out on SB side. The gas detectors and triggered ESD 2.

Gradually, the level of the water trap was re-established, and the gas leak stopped.

WHAT WENT WRONG?

Leakage in valves due to ageing. The valves between the water lock and the sight glass did not keep tight.

The drain valves on the sight glass were rusted and could not be operated due to poor technical condition.

Inadequate management within - maintenance.

Comments:

Repeatedly postponed due to lack of resources/capacity/priority.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Ensure that work on the safety system and HC system is carried out at work permit level 1 with sufficient time for preparations.

Assess whether there is a fault in the deluge system. Carry out a gap analysis of the existing design against new requirements and recommendations.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Organization, resources and capability

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Oct 19 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Power generation unit
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

At midnight on the night of 19.10, we initiated PAS 3.1 (stoppage of oil train) due to a fault on a level transmitter in the 2-stage separator. This led to a fuel change where the power turbines switch from gas to diesel consumption.

Due to maintenance/overhaul on a diesel tank, the routing of diesel was slightly different than normal, (ICC was set), but despite the correct lining up, the diesel return from main power was unable to overcome the pressure it encountered back into the system. The return diesel thus took the easiest route and ended up spraying out of the diesel centrifuge.

I would estimate that it took approx. 25 minutes from the time the leak occurred until it was discovered, and it took a further approx. 6-7 minutes before we were able to stop it.

The result was an emission of approx. 3-4 cubic metres of diesel on the door in an unclassified area, with few drainage options and a lot of equipment stored.

WHAT WENT WRONG?

Organisation and planning of work - inadequate risk assessment prior to the activities.

During normal operation, return diesel is led back to the day tank, which is expected to meet atmosphere, but suddenly it has to fight against 7 bar at the service pump. The pressure on return diesel has never been a topic of discussion, so no one predicted that this could happen.

This has also not happened with previous jobs at the day tank, as they have probably not experienced a fuel change with the line configuration we now had.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Develop a better work procedure.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Jun 11 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Overflow of diesel day tank for emergency generator during emergency shutdown test. This led to emissions at the east wall and on walkways in the area, and further down the shaft top. Much of the discharge was collected and pumped into a closed drainage system, but some went into the sea via overflow on the shaft top. The spill resulted in significant diesel odours in the living quarters, especially cabins on the east side and in the kitchen. The air intake to LQ east is located in the same area. Many reported the next day that they felt uncomfortable and had slept poorly. Personnel in the kitchen told of unpleasant odours and that they eventually developed headaches.

WHAT WENT WRONG?

Defect or technical failures on component/system/plant - defects/failures in design/construction: Reconstruction of the diesel system has resulted in weaknesses in logic.

Defect or technical failures on component/system/plant - failure in power supply: Happened during a test of the platform's emergency shutdown system, where the platform was left completely dead.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Change of logic on the valves has been carried out, so that there is no need for any procedure.
- Ensure that all 3 storage tanks have an open return on restart (bumpless transition from FailOpen during blackout).
- Ensure that any of the 3 storage tanks always has sufficient capacity to receive all the diesel in the overhead tanks.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate security provisions or systems

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Jul 11 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

A gas leak was visually detected from a flange in a pressure line/riser. Personnel left the area and general alarm was activated. The segment in question was depressurized and deluge triggered.

WHAT WENT WRONG?

Root causes: Complex/demanding governing documentation on which torque table applies, and there is a lack of system and knowledge offshore about active dispensations that apply to the use of the tables.

Triggering cause, a combination of a pulling torque on the flange, and at the same time a pressure peak in connection with pressing up after NAS 2.0 on the morning of 11.07.2022.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Update and inform on new guidelines.

Establish a system for safeguarding and following up active dispensations.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Policies, standards and objectives

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Failure to report/learn from events

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DATE: Jan 23 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Subsea: Subsea equipment
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

A clamp connection failed at the one of the wells between subsea production wells.

WHAT WENT WRONG?

Defective equipment.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Subsea inspection program and follow-up.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Fatigue

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

DATE: Oct 10 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Leakage from valve after repair.

WHAT WENT WRONG?

Improper design.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Modify return line on VCP for actuators.

BARRIERS:

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

DATE: Jan 15 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Relief valve (body, plugs)
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Gas leak from a PSV on one of the compressor trains. The gas leak was measured at 100% LEL with a handheld gas meter right up to the leak point. It was decided to shut down the PSV and to change production. Before this was done, another gas detector sounded the alarm. This triggered a general alarm at 03:44 with subsequent NAS of the processing plant, triggering of deluge in the module and mustering of the organization. The compressors were depressurized.

The estimated leakage rate is 0.034 kg/s.

WHAT WENT WRONG?

Technical conditions - technical failures due to ageing/technical lifetime.

Failure of gasket kit in pilot valve for PSV.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Corresponding gasket sets with o-rings and Teflon gaskets in stock are checked in relation to service life.

Check whether gaskets on the pilot valve have been changed on other identical PSVs in the same time interval with corresponding spare parts.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Monitoring, reporting and learning

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Jan 27 2022
COUNTRY: Norway
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Breaking Containment Locations: Breaking containment location
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

When splitting the balance line of a condensate pump, the trapped gas volume caused the gas detector in the pump hood to go in HH, giving NAS 2.14, GA, pressure decomposition and deluge.

The condensate pump has been isolated with ICC since late December 2021, depressurized and N2 flushed. The balance line has been dismantled and was reassembled on 25.1.22. Trend shows that pressure has built up over the course of 2 days, from 25.1- 27.1.22, to 1.3 bar. DB&B has been created on the inlet and outlet of the pump, and it was verified by area technicians, that there was no leakage in the bleeds before splitting of the balance line started. It was when the performers loosened the 3 bolt on the flange that they heard sound and discovered that there was gas pressure. They pulled to the bolt again and left the area. The detectors were considered for posting but the conclusion was that it was not necessary. The fans were stopped which meant little replacement of air in the hood.

WHAT WENT WRONG?

Work practices and accomplishment - poor understanding of risk or misjudgement of potential hazard.

Comments:

The pump had been open for 6 days and considered that it had been emptied.

Suppose there has been a pocket of condensate that has not been emptied after draining and N2 flushing.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

The incident makes very clear what margins we have when working on HC systems. It is also important that when we work on such systems over several weeks, we write good logs so that upcoming shifts can easily familiarize themselves with the conditions and get a good overview. Work on the pump had been going on for several weeks. We have a clear point of improvement in passing on experience over the shifts via handover. Details of such work must be handed over so that incoming shifts receive information so that they can safely handle the situation further. The D&V manager should help discuss this incident.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

PROCESS (CONDITIONS): Organizational: Inadequate communication

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DATE: Aug 13 2022
COUNTRY: UK
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Drilling
MODE OF OPERATION: Drilling
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We stay within operating limits

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Well intervention work was being conducted on a normally unattended installation utilizing a jack up rig that involved running inside the production tubing with coiled tubing. During this operation, gas was vented to a third party cold vent line located on the side of the rig hull, resulting in pockets of gas resulting in activation of two low level gas sensors on the normally unattended installation platform.

WHAT WENT WRONG?

1. Operators carried out a controlled bleed down of well tubing head pressure via a sand clean up package cold vent line, to allow running in hole with coiled tubing, resulting in a release of an unplanned volume of gas.

2. Whilst the release volume was within the permitted quantity, the use of the sand clean-up package to bleed down tubing head pressure was not an intended operation. It was assumed that bleeding off well pressure via the engineered vent line was within the scope of the operational programme.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Where cold venting activities are intended to be conducted at the lower end of gas dispersion model-derived operating windows review whether sufficient safety factor has been incorporated to reflect modelling limitations.

Where operations associated with a process safety study are programmed, ensure site specific controls and procedures adequately stipulate operating boundary conditions.

BARRIERS:

Human Barrier Failures: Response to process alarm and upset conditions (e.g. outside safe envelope)

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Sep 20 2022
COUNTRY: UK
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Equipment: Filter
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

Employee burned during maintenance of hot water system.

WHAT WENT WRONG?

Equipment failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Feb 14 2022
COUNTRY: UK
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Subsea: Subsea pipeline/flowline
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Release is believed to be from an inter-field 8" sub-sea pipeline which transports crude oil from a Normally Unattended Installation (NUI) to another installation, although it is not possible at this time to determine accurately the exact point of release on the pipeline length.

NUI Production shut down. Pipeline depressurised. Riser valves closed.

Investigation has commenced. Incident Management Team is mobilised and co-ordinating communications with BEIS and Coast Guard.

WHAT WENT WRONG?

- Inadequacy of the original Reservoir and Facilities Basis of Design assumptions.
- Inadequate pipeline wax clearance activities.
- Sampling regime did not detect sessile type microbes already present.
- The pipeline integrity strategy and management regime were compromised during the period 2017-2018, and the corrosive environment present within the pipeline was not recognised.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Extended laydown/preservation of a pipeline beyond expected period should drive deeper corrosion integrity review/management.
- Pipeline cleanliness is critical to maintaining pipeline integrity.
- For future asset acquisitions, focus on Pipeline Integrity due diligence:
- Request In-Line Inspection (ILI) check from Operator prior to acquisition
- Where this is not practical/pragmatic, review of raw data of the last intelligent pigging should be conducted
- For future In-Line Inspection (ILI) inspection programs, the following should be included in the scope:
- Clear inspection outcomes should be defined to ensure the In-Line Inspection (ILI) sensors are adequately sensitive to detect the corrosion defects expected in terms of size and shape according to the corrosion risk assessment.
- The use of Ultrasonic sensor arrays (where practicable) should be considered with the ILI Specialist Service Company, although this will depend on cleanliness of the pipeline.

BARRIERS:

Hardware Barrier Failures: Process Containment

Hardware Barrier Failures: Detection Systems

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

MIDDLE EAST ONSHORE

DATE: Aug 27 2022
COUNTRY: Israel
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Unspecified - other
MODE OF OPERATION: Start-up
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

At 07:38 while equalizing Flowline A as part of the ESD Monthly Test, it was noticed by the field operators on site that gas started to leak from the stem of VO-0110. Gas was detected by the wireless gas detection system.

At 07:38 an ESD was activated by the CRO. All personnel mustered to their Muster stations. The platform went to full blowdown which had been accompanied by Generator-A shutdown and E-Gen startup.

After the ESD I&E shutdown all power to Cellar & Sub-Cellar Decks as part of the safety measures during ESD.

Event concluded at 19:55 as gas production had been resumed and operations started to return back to normal state.

WHAT WENT WRONG?

Gas leak detected from stem during monthly test due to failed valve.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Response to emergencies

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate supervision

MIDDLE EAST OFFSHORE

No Tier 1 PSE reported.

NORTH AMERICA ONSHORE

DATE: Mar 8 2022
COUNTRY: Canada
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Completions
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Flexible hose/piping
PROCESS SAFETY FUNDAMENTAL: We stay within operating limits

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

Service rig worker burned.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Apr 9 2022
COUNTRY: Canada
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Completions
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Flexible hose/piping
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

Ruptured transfer hose.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Nov 21 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Heat exchanger
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Product Stabilizer Cooler Tube Leak.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Jun 8 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

PRD release to atmosphere above threshold in any 1 hour period and results in liquid carryover or discharge to a potentially unsafe location or onsite shelter in place or public protective measure (e.g. road closure)

INCIDENT DESCRIPTION:

Spill on ground from Vent stack overflow.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Aug 13 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

At around 18:30 pm August 13th the operator had noticed a loss of communication from the well pad. Severe thunder and lightning storm in the area on the evening of August 13th. Call out was made to send an operator at 6:30 am August 14th to investigate. At approximately 2:00pm on August 14, the operator arrived at 10-23 location to discover the separator building had been burnt and methanol tank was gone. The separator skid was damaged, as well as the electrical cables, junction boxes on the outside of the separator skid and the building cladding. No active fire at that time. Operator called the production tech, operations coordinator, and operations superintendent.

WHAT WENT WRONG?

Lightning strike caused fire.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Human Barrier Failures: Response to process alarm and upset conditions (e.g. outside safe envelope)

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

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DATE: Mar 18 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Drain valve on recycle pump discharge piping was left open after maintenance resulting in a loss of primary containment of crude oil.

WHAT WENT WRONG?

- Valve was left in open position.
- No "walk the line" was completed.
- Lack of shift change information (documentation).
- Drain line was not included as part of the LOTO.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Install a high-level switch and alarm for each sump to mitigate risk of spill in the future.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

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DATE: Mar 23 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Compressor/blower/fan
PROCESS SAFETY FUNDAMENTAL: We recognise change

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

There was an issue with the casing gas compressor station. A Thermowell ejected from a tapped blind affixed to a compressor cylinder and imbedded itself into a plastic drum nearby. This led to a gas release within the compressor building.

WHAT WENT WRONG?

- An incorrect Thermowell was used (design standards/specifications were not followed).
- Problem was not anticipated during design phase.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Thermowell assembly to be evaluated against current industry standard going forward.

BARRIERS:

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change.

DATE: Jun 25 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

The fuel gas supply line to a well pad was to be isolated and depressurized as part of regular maintenance activities. The day shift operator isolated the main fuel gas header and left a 3/4" drain valve open (without LOTO or documentation for shift handover). Instrument air was left connected to the main fuel gas header. The night shift operator noticed that the fuel gas supply to the well pad was isolated, so he opened the isolation valves which released fuel gas through the 3/4" drain valve. The pad tripped on high LEL which stopped the release.

WHAT WENT WRONG?

Improper energy isolation (no LOTO; lock out tag out) - instrument air left connected.

Lack of documentation/communication (shift change notes).

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Strengthen LOTO implementation with training.

Monitoring alertness needs improvement.

Communication system needs improvement.

BARRIERS:

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate communication

DATE: Jun 25 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Due to maintenance activities, the fuel gas supply line to a well pad was to be isolated and depressurized as part of regular maintenance activities. The day shift operator isolated the main fuel gas header and left a 3/4" drain valve open (without LOTO or documentation for shift handover). Instrument air was left connected to the main fuel gas header. The night shift operator noticed that the fuel gas supply to the well pad was isolated, so he opened the isolation valves which released fuel gas through the 3/4" drain valve. The pad tripped on high LEL which stopped the release.

WHAT WENT WRONG?

Improper energy isolation (no lock out tag out) - instrument air left connected.

Lack of documentation/communication (shift change notes).

CORRECTIVE ACTIONS & RECOMMENDATIONS:

LOTO needs improvement

Monitoring alertness needs improvement.

Communication system needs improvement.

BARRIERS:

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate communication

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DATE: Aug 11 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Gas released from corroded tank roof (De-oiled Water Tank) through crack.

WHAT WENT WRONG?

Current tank design specifications enable design condition that is beneficial to corrosion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Examine other tanks to determine which have similar design. Re-assess operating parameters.

BARRIERS:

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

DATE: Aug 20 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator was notified by a fluid hauler that a release of crude oil from the vent on their truck had occurred while loading crude from a facility storage tank.

This happened because the driver of the truck had left the scene to complete paperwork in the cab of their truck. Crude oil released from the truck vent due to overfilling.

WHAT WENT WRONG?

Lack of planning: no preparation - trucking company employee didn't perform adequate site-specific field level hazard assessment. As a result, hazards associated with unattended fluid loading weren't addressed.

Failure to follow procedures: Company procedure requires driver to remain at pump controls while transferring fluid. The driver was in his truck cab for the duration of the release.

Current process does not adequately communicate the expectation that contractors must be present during loading/unloading activities.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Ensure consistent expectations for contractor loading/unloading activities for issues associated with fluid hauling (risk-based approach).

Develop communication plan for contractor expectations. Improve contractor management program.

Develop permitting and hazard assessment process for fluid hauling.

BARRIERS:

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

DATE: Sep 28 2022
COUNTRY: Canada
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Planned shutdown
POINT OF RELEASE: Tanks and Sumps/Pits: Sump/pit overflow
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

During a planned power outage, skim oil from skim tank back flowed through sump pump (and two failed check valves) and caused sump to overfill inside the steam plant building resulting in a spill.

The plant was down which was why the fluid was able to back flow as there was no positive pressure on the system like there would be in normal operation.

WHAT WENT WRONG?

Problem of both check valves failing simultaneously was not anticipated at design stage.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Create policy addressing manual valve activation during power outage.

Update risk register.

BARRIERS:

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Jan 14 2022
COUNTRY: USA
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Completions
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Flexible hose/piping
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

During e-line operations for a calliper log procedure on a newly drilled and stimulated well, at 669' a 2" Kelly kill line hose parted at a crimp connection. The hose failure occurred at the joint to hardline section of the kill line resulting in uncontrolled well flow. Due to the flow the logging tools were blown up hole and the Kelly hose was shredded and entangled the wire line, grease line and tag lines. A threaded iron extension from the pump in tee also was secondarily blown from the connection. 2 Wireline workers went and closed the working/Frac valve to secure the well. The logging tools and +/- 30' of line were left in the well when the master was secured with a 36" pipe wrench.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

DATE: Mar 4 2022
COUNTRY: USA
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Drilling
MODE OF OPERATION: Normal
POINT OF RELEASE: Wells, drilling and intervention: Well
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

An operator observed a natural gas release at location. There are no injuries associated with this event, and there are no safety concerns outside of the immediate area. No gas has been detected outside location. Operations continued.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

DATE: Mar 25 2022
COUNTRY: USA
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Completions
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Flexible hose/piping
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

While logging the well and simultaneously pickling the adjacent well, a 4" gravity fed chemical transfer hose failed at the crimping that was connected to the pump truck suction manifold. This resulted in approximately 10.279 bbl of Xylene being released to the pad.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Jul 5 2022
COUNTRY: USA
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Drilling
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Flexible hose/piping
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

After night shift completed the blender swap, the 1 inch chemical hose for the biocide was left unsecured inside secondary containment by the blender.

While transferring biocide chemical, the chemical hose was turned on releasing an estimated 2 barrels of the biocide chemical inside secondary containment and 14 barrels outside of containment onto the ground.

WHAT WENT WRONG?

- The spill was not detected up to 6 hours later.
- Personnel not familiar / not trained regarding response to spills or releases to the environment.
- Supervision oversight did not foresee the ongoing operation.
- Both chem add and operator did not perform the communication and verification of the flow.
- Procedure state the communication between chem add and operator to verify the flow.
- Replacing equipment between crew change, repetitive technical issues, new supervisor unfamiliar with staff experience.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Reinforce incident reporting and stop work authority.
- Assess current competency profile for personnel.
- Provide training based on the competency assessment for everyone.
- Amend/update existing procedure to include verification process when changing/swapping blenders throughout check list.
- Develop check list for replacing/swapping blender.
- Establish a hand over process (document) to establish proper handover between changing crews.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Human Barrier Failures: Response to emergencies

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CON3DITIONS): Organizational: Inadequate training/competence

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DATE: Sep 16 2022
COUNTRY: USA
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Completions
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Flexible hose/piping
PROCESS SAFETY FUNDAMENTAL: We stop if the unexpected occurs

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

2 Water Treatment technicians sustained chemical exposure to Peracetic Acid. The technicians had completed repairs to a Digital Dosing Pump on the chemical metering trailer. While bringing the system back online, RO Water (flushing water) was pumped through the lines and then the technicians switched back to Peracetic Acid. At this time, one technician observed a leak in the sight glass immediately downstream of the pump. As the technician leaned in to investigate the leak, a hose detached from its fitting spraying both technicians with Peracetic Acid. The nearest technician was sprayed in the eyes, face, and mouth. The IPs were rinsed with the Saline Solution and 2 Five-Gallon jugs of distilled water available on location. After being rinsed, one employee exhibited swelling in his face and eyes. Emergency Care evaluation and referred for IP transport for further evaluation. IP was admitted to the hospital for treatment and remained there overnight for observation.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Oct 18 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

ESDs on wells failed to close and water tanks ran over sending fluid to combustor starting initial fire. Released 2250 barrels of water and 500 barrels of oil. Very small amount of oil sheen visible from release and PW mixed with 10 loads of fresh water hauled in by the fire dept. Hauled 4 loads of standing fluid from location 10-19 and have vac trucks back on location 10-20 to finish picking up residuals. Majority of fluids from tanks burned off during the fire leaving minimal fluids to clean up.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Oct 20 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Fired heater/Boiler/Furnace
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Night operator discovered a leak from the fire tube gasket on the 6x20 vertical heater treater at the Battery. The Night operator had driven past the facility at 19:00 and did not see anything out of order. Release: 30bbls oil and 12bbls produced water. Recovered: 18.5bbls oil and 2bbls produced water.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

DATE: Nov 8 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

MSO arrived on location and found tank overflowing on his morning rounds.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Jul 12 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Pressure vessel
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Gasket on production knockout failed causing release of 61.673bbl of oil-water mix. Vessel never got over 160psi.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

DATE: Jul 13 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Tank battery was emergency shutdown shut on high water levels due to maintenance, some wells did not shut in all the way causing produced water tanks to overrun into battery containment.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

DATE: Jul 17 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Breaking Containment Locations: Breaking containment location
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator arrived at location, noticed a huge oil puddle on location from heater treater water dump to back of pw tank. Operator noticed that suction off circ pump 1" valve was left wide open, and suction hose left out of lined containment. Allowing the release of oil to stay on-pad in dike/berm area. Estimated spill duration 10 hours. 195bbls of oil released. 100 bbls recovered.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Nov 28 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Night operator doing nightly checks drove up and found a leak coming from circulating pump containment. The operator found that a valve on pump had been left in the wrong position - corrected valve position and called for Vac Truck. Vac truck picked up 80 bbls all oil. 3.71 bbls soaked in total spill 83.71 bbls total volume - all oil. All fluids are contained within the tank berm. 3 1/2 hours since last surveillance.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Nov 30 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

An operator, during daily routine, drove up and found a leak coming from circulating line from behind the oil tanks. Operator found hammer union on circulating line that was not tightened down all the way and was the cause of the released. Operator shut valve on tank to isolate the hammer union. Vacuum truck was dispatched to pick up the release. Totalling 268.5 bbls spill all oil contained inside facility berm. 247 bbls were recovered with 21.48 bbls saturated. Duration from last seen 24 hours. Remediation to be scheduled and all notifications made.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Apr 11 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Oil tank 1 was rusted out underneath the tank and the oil inside the tank leaked out overnight. This happened over the course of the past 24 hours. Estimated volume of release-155 barrels of oil. It is all inside the containment. It is all oil because it all came from the oil tank. Recovered 130 barrels with Vacuum Truck.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Apr 21 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Water transfer pumps failed to start. Solenoids failed to release pressure when alarm was triggered from a high water tank level. The wells continued to flow causing the water tanks to overflow. No alarms were received except for ESD alarm.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Jan 27 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

From the initial report and the Production Supervisor, A two-inch diameter LP gas line froze and popped off from the threads, releasing gas at 40 psi for 15 minutes.

WHAT WENT WRONG?

Frozen gas line popped.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

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DATE: Feb 17 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Fired heater/Boiler/Furnace
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

Heater/treater fire. Fire tube had catastrophic failure at the weld joint at the 180 bend. Failure was heat stress on the pipe and weld joint that allowed large amounts of oil into the fire tube that was then ignited and flowed out of the fire tube onto the ground.

WHAT WENT WRONG?

Issue with shutdown system and maintenance on fire tube.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Shutdown Systems – including operational well isolation and drilling well control equipment

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Feb 23 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

A dump valve leak occurred due to it being left open to unthaw after a freeze. 7.5 bbls condensate and 22.5 bbls produced water were released to secondary containment for a total release of 30 bbls of fluid.

WHAT WENT WRONG?

Valve leak occurred due to open valve and weather.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Equipment or materials not secured

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

DATE: May 10 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Drilling
MODE OF OPERATION: Unspecified production
POINT OF RELEASE: Wells, drilling and intervention: Well
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

The WSR arrived on location to find the well flowing out of the kill port BOP valves at a high rate of flow. This resulted in a spill to land of 1,050 total bbls. 787.50 bbls of produced water and 262.50 bbls of oil. No injuries occurred during this event.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Trusting an unverified barrier overnight is not a good thing with a well that is open.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Jun 23 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

A gas lift line failure resulting in a 3/4 inch to 1 inch hole rupture on the gas lift line. 14,311 kg/576 MSCF gas to atmosphere.

Tier 1 LOC - 623 kg - flammable first hour.

WHAT WENT WRONG?

Gas lift line failure caused a rupture in the pipe.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Aug 7 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Pump
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Housing on pump connected to Off Spec tank failed releasing fluid to secondary containment: Oil 23.273 bbls and Produced Water 0.475. Total fluid 23.748.

Tier 1 LOC.

WHAT WENT WRONG?

Housing on pump connected to Off Spec tank failed.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

During this investigation we thought that it was going to be very simple and started with a 5 why. After getting to a certain point decided to go tear the pump apart. After doing so the findings led us to a conclusion that we had a more complex failure on our hands. We then switched to the why tree model and this helped us break down the failure and find the root causes efficiently.

BARRIERS:

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Aug 12 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Fired heater/Boiler/Furnace
PROCESS SAFETY FUNDAMENTAL: We control ignition sources

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

A CTB heater-treater caught fire (cause to be determined). Total oil loss 44.9 bbls (consumed in fire) with an estimated amount of 1.21 bbls released to land. 172.9 bbls produced water recovered from vessel.

Tier 1 LOC due to the direct costs of the fire.

WHAT WENT WRONG?

Heater Treater fire.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Mar 22 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Hot oil truck operator arrived at location and found oil inside containment, leaking from circulation pump and called me. I knew what happened and requested he close the valve on the circ pump suction hose. I visited the battery earlier in the day and had oil circulating off the bottom of tank 3 into tank 4. When I went to close the ball valve on the back of tank 3, I found I could not close the valve due to an internal obstruction. I changed valving at the circ pump to allow the fluid in the containment to be sucked into the pump and discharged back down the line and into the valve for tank 3, clearing the blockage. I closed the tank 3 ball valve and opened tank 4 for normal circulation. I returned to the pump and set my valves back to normal positions for standard operation and turned the switch back on. At this point I realized my suction hose valve was still open and decided it would be a good opportunity to drain the containment. After several minutes of this I turned off the pump and neglected to fully close my suction hose valve, which allowed the oil from tank 4 to fill the pump containment and spill over into the containment at the battery. Oil did not leave the containment around the tanks. The leak was present from around 10:30 am to 2:45 pm. Tank level dropped approximately 25 bbls and regular production for that time period would be approximately 20 bbls oil. Gravity of oil approximately 40.8 based on last hauled oil. Total release volume 45 barrels oil.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

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DATE: Jan 18 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore flowline
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

PRD release to atmosphere above threshold in any 1 hour period and results in liquid carryover or discharge to a potentially unsafe location or onsite shelter in place or public protective measure (e.g. road closure)

INCIDENT DESCRIPTION:

Operations received notification from 3rd party crew of an active leak. Dispatched night operator to investigate. Evidence found of flowline leak that was no longer active. Well secured utilizing manual wing valves on wellhead. Appears flowline developed leak that became large enough for automation setpoints to be met and ESD the well. Spill lasted approximately 4 hours. 200" x 10' on ROW, 90' x 30' in pasture.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Feb 10 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

An operator arrived at facility for startup, he discovered a 1/4 inch stainless steel vent line coming off the load line for the LACT unit had pulled apart at connection point. This allowed the oil in tanks to release from the 1/4 inch tubing into the lined secondary containment. Approximately 93.881 barrels of oil leaked for approximately 24 hours. All oil was contained by liner.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Dec 27 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Spill of 7.124 bbl oil to land occurred due to glycol pumps losing power causing the solenoid to malfunction. Possible LOC: release rate of 7.124bbl/.75hour = 9.4 bbl/hour is greater than 0.5bbl/hour condition. LOC Determination is preliminary pending confirmation by the LOC SME.

WHAT WENT WRONG?

Glycol pumps losing power causing the solenoid to malfunction.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Feb 16 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Failed preheater resulted in methane gas released through reformer.

WHAT WENT WRONG?

Accelerated sulfidation corrosion not anticipated in equipment design.

Shut down valve associated with preheater not included in reformer logic allowing continued process communication.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Utilize metallurgy aligned with sulfidation corrosion in facility piping.

Revisit shutdown logic to ensure appropriate isolation occurs upon failure.

BARRIERS:

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Apr 6 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Vent valve inadvertently left open while lining up blower.

WHAT WENT WRONG?

Less than adequate training of personnel, procedure not followed, procedure leaves room for human error.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Update procedures to remove ambiguous instructions on start up of blowers. Site emergency response procedures inconsistent with corporate guidance, update local emergency response procedures to conform LEL set points and other emergency response actions. Insufficient training on emergency response procedures, develop training to improve emergency response competency.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Response to emergencies

Management System Element Barrier Failure: Organization, resources and capability

Management System Element Barrier Failure: Plans and procedures

Management System Element Barrier Failure: Monitoring, reporting and learning

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Servicing of energized equipment/inadequate energy isolation

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Jan 2 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator discovered 18.17 barrels of oil on the ground by the HP Flare pots.

WHAT WENT WRONG?

A 2" Plastic Coated Victaulic Tee split/broke causing the leak. Fluid in the re-circulation lines froze and ruptured an underrated tee.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Install heat trace in the low-lying areas of the flow line.
2. Install check valves to minimize back flow in engineer approved locations.
3. Survey similar areas that could have similar design.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

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DATE: Jan 2 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

A hole developed on the 2" welded nipple located on the overflow tank due to corrosion. 120 bbls of fluid were recovered from containment and 0.5 bbls of fluid escaped containment.

WHAT WENT WRONG?

Internal corrosion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Jan 10 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Pump
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator discovered the seal for the charge pump failed releasing oil in the lined containment.

WHAT WENT WRONG?

Pump seal failure. Freezing weather may have contributed.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available because it was related to weather conditions.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

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DATE: Jan 10 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We stay within operating limits

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

While filling atmospheric storage tank (AST) #2 the automatic level sensor malfunctioned and the HiHi alarm was tripped, causing transfer pumps to stop. When personnel noticed the alarm light flashing they visually inspected AST levels and noticed AST #1 was overflowing.

WHAT WENT WRONG?

Workers relied on limited alarms that did not alert the workers of HiHi levels while preforming SimOps.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Increase audible and visual alarms.
2. Lower the HiHi level for both tanks.
3. Annual testing of alarms with documentation of testing.
4. 6-month equipment change out.

BARRIERS:

Hardware Barrier Failures: Detection Systems

Human Barrier Failures: Surveillance, operator rounds and routine inspection

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

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DATE: Feb 4 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We stay within operating limits

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

The inlet to the tank had closed and did not fully open. The bypass valve remained partially open and fluid continued to flow into the open top overflow tank but a SCADA failure prevented the issue from being visible remotely and no overflow tank level alarms were sent out.

WHAT WENT WRONG?

The SCADA display showed good communication but was found to have not communicated since January 20, 2022.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Troubleshoot with SCADA why server locked up and still showing good communication.

BARRIERS:

Hardware Barrier Failures: Detection Systems

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

DATE: Feb 3 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

The pilot sensing relief valve (PSRV) control tubing line failed due to freezing temperatures. Control line freeze failure allowed PSRV to equalize and open to atmosphere. Initially releasing produced gas and then eventually allowing the liquid to overflow through the gas line(s).

WHAT WENT WRONG?

PSV pilot line failed due to freezing temperatures.

Programming found to not be consistent with the control narrative. This allowed for a longer release time by not allowing wells to ESD.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Work Authorization is now required to disable critical alarms in the PLC.

2. Enforce MOC process to document control narrative / programming changes.

3. Implement a change in the program that will not allow the vessel to be flowed into if it is in Disabled mode, utilizing the divert valve and/or ESD valve on well pad.

4. Apply heat trace and insulation to the pilot PSRV control lines.

BARRIERS:

Hardware Barrier Failures: Process Containment

Hardware Barrier Failures: Shutdown Systems – including operational well isolation and drilling well control equipment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

DATE: Feb 17 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator arrived on location to find an oil tank had been struck by lightning and had ruptured and damaged the water tank next to it. Fire damage less than $100K.

WHAT WENT WRONG?

Lightning strike.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available because it was related to weather conditions.

BARRIERS:

Unspecified: Unspecified

CAUSAL FACTORS:

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

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DATE: Feb 13 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator discovered oil tank was overflowing out of the thief hatch. Gun barrel had an increase in volume causing tank to fill faster than anticipated. The tank level transmitter did not call out for high tank alarms due to a missing logic in the PLC.

WHAT WENT WRONG?

Spill was due to alarm / PLC logic failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Bi-Annual testing of tank level transmitter will be implemented.

BARRIERS:

Hardware Barrier Failures: Detection Systems

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

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DATE: Feb 24 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We recognise change

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

The water dump on the main production separator washed out sending all the fluid to the skim tanks. The ESD activated however the pumps shut down which caused the tanks to overflow.

WHAT WENT WRONG?

Sand cut (erosion) of water dump.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Mar 6 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Breaking Containment Locations: Piping/valve (inadvertently left) open to atmosphere
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator was responding to a call out when he found a 1" ball valve on the second stage scrubber drain in the open position venting to the tank.

WHAT WENT WRONG?

Possible ice blockage in the valve or piping, and valve was mistakenly left open.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

DATE: Mar 10 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

A 4" divert line valve off the LACT unit separated at a Victaulic clamp causing the leak at a tank battery.

WHAT WENT WRONG?

Improper installation of fittings.

One side of this coupling was installed on top of the gasket face (on the flanged fitting side) and forced into position by torque or hammering on the clamp or bolts.

The Victaulic grooved flange fitting side (the side that failed) was over-rolled and out of spec. which might have contributed to this failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Put crews through refresher course on Victaulic make up.

Evaluate leak testing process and record retention.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

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DATE: Mar 14 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

The bottom diaphragm failed on a 6" water dump causing both bulk separators to send all residual fluid and gas to the inlet skim tanks causing tanks to overflow.

WHAT WENT WRONG?

The bottom diaphragm failed.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Mar 16 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Unknown/insufficient information: Unknown/insufficient information
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

Tank battery fire was reported to operator and local fire department from public. Operator isolated wells (ESD at entrance) to allow first responders to extinguish fire. Fire resulted in total loss of 6 production tanks and secondary containment.

WHAT WENT WRONG?

Lack of maintenance.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Mar 22 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

The diaphragm on the water dump of the main production separator failed, sending fluids to the skim tanks. Fluid was released from bouncing betty's of both skim tanks and the battery ESD.

WHAT WENT WRONG?

The diaphragm on the water dump of the main production separator failed.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Mar 23 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Pump
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator discovered oil inside the lined containment.

WHAT WENT WRONG?

The screen lid on the upstream side of the charge pump failed releasing the oil.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: May 3 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore flowline
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Flowline (bored) section failed and released 15,000 kcf.

WHAT WENT WRONG?

Line was pulled internal corrosion due to bacteria.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: May 5 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator received 2 alarms. Operator arrived on location and found fluids in the slop oil containment.

WHAT WENT WRONG?

Discovered the 2" balloon valve closest to the slop oil tank separated from the threads, due to thermal expansion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Identify all facilities with similar design for potential dead legs.

Install vent line on identified load lines.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

DATE: May 12 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Oil hauler arrived at location to find tank had emptied due to a hole in the bottom caused by corrosion.

WHAT WENT WRONG?

Internal corrosion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

DATE: May 30 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Equipment: Pump
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

SWD Discharge Header Flow Alarm at a Tank Battery. Operator arrived at location and noticed smoke and flames on the pumps. Operator immediately ESD the location. Fire department was notified, and operators extinguished the fire.

WHAT WENT WRONG?

PW Transfer Pump fire resulting from oil in produced water.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Using this CTB as a pilot, test setting alarms on guided wave radar in PW tanks for oil pad level.
- Correct identified PW system design issues to include piping diameter, water leg, pumps, to ensure PW takeaway meets or exceeds expected PW intake.
- Evaluate other methods of identifying oil in PW piping to protect PW Transfer Pumps.
- Evaluate ESD interval on PW transfer pumps between critical alarm and shut down.

BARRIERS:

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Jun 28 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Start-up
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Tank Battery overflow tank ran over into impermeable containment. The skim tank bypass valve failed to reset and remained open, along with a skim tank check valve leaking by causing the skim tanks to backflow into the overflow tank. A total of 89 bbls of oil were released.

WHAT WENT WRONG?

Bypass valve failed to reset and remained open, along with a skim tank check valve leak causing the skim tanks to backflow into the overflow tank.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Require and allow for time to complete a thorough and documented PSSR prior to facility being brought back online after facility is re-designed or process is significantly altered.
- Install/test AC power fail to ESD wells after 5 minutes of power loss.
- Enable/test overflow tank switch and inspect/test other recently installed similar switches.
- Coach Production Technicians on need to verify tank levels prior to bringing CTBs online after ESD.

BARRIERS:

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

DATE: Aug 19 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Planned shutdown
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

The Contract Operator was working to clear the level in the scrubber. During this process the Operator walked towards the panel of the compressor. When the operator was approximately 35 feet away, the liquid that was being drained onto the skid ignited.

WHAT WENT WRONG?

Liquid that was being drained onto the skid ignited.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Equipment Design Failure:

- Stop all draining into compressor skids.
- Cascade the 3rd stage dump back to the 2nd stage scrubber.
- Upgrading Loop to fire eye for post event mitigation.

Human Performance –

- Training to incorporate risk hazards of draining to compressor skid.
- Remove excess hydrocarbons/fuel sources after maintenance.

BARRIERS:

Hardware Barrier Failures: Ignition Control

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Policies, standards and objectives

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Work Place Hazards: Hazardous atmosphere (explosive/toxic/asphyxiant)

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

DATE: Aug 20 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

Operator found the fiberglass tanks were on fire due to a lightning strike. Production team confirmed a total of 9 water tanks and 1 gun barrel had caught fire.

WHAT WENT WRONG?

Lightning strike.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available because it was related to Weather conditions.

BARRIERS:

Hardware Barrier Failures: Protection Systems - including deluge and fire water systems

CAUSAL FACTORS:

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

DATE: Aug 28 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Operator received high level alarm from slop tanks on location. Storm filled multiple containments with rainwater, caused the containment open drain sumps to activate and pump rainwater to slop tanks as designed. Slop tanks over filled and spilled into impermeable containment (50 bbls oil).

WHAT WENT WRONG?

Slop tanks over filled and spilled into impermeable containment.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available because it was related to weather conditions.

BARRIERS:

Hardware Barrier Failures: Protection Systems - including deluge and fire water systems

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Oct 11 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Equipment: Pig launcher/receiver
PROCESS SAFETY FUNDAMENTAL: We stop if the unexpected occurs

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

While blowing down a pig receiver a release of pressure impacted the IP's lower extremities.

WHAT WENT WRONG?

While attempting to bleed down pressure on the pig barrel, the IP encountered difficulty removing the plug to de-pressure. IP proceeded to the drain line on the bottom of the barrel to relieve the pressure. While opening the valve it appears the drain assembly rotated striking the IP in the left leg.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Cease pigging operations and conduct inspection of pigging equipment.
- Analysis of 2" vent valve to determine root cause of leak.
- Understand QA/QC process, potential inspection checklist improvements.
- Review engineering and identify engineering solutions if necessary.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Improper position (in the line of fire)

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Oct 15 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: We watch for weak signals

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

LO found that the 6" x 1" nipple on the fuel gas line for the compressor and before the suction control valve had broken due to vibration allowing the 1" line to blow to atmosphere releasing 897 kcf over a 9-hour period.

WHAT WENT WRONG?

6" x 1" nipple on the fuel gas line for the compressor and before the suction control valve had broken due to vibration.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Oct 18 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Start-up
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: We recognise change

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

A flash fire occurred in a compressor building during compressor startup operations.

WHAT WENT WRONG?

Improper plug was used that burst in first stage discharge.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Procurement conduct Shop Quality Surveillance for manufacturer.
- Update commissioning checklist to include piping verification.
- Review manufacturer expectations and incorporate as part of CL.
- Review and re-communicate expectations of commissioning checklists and processes that need to be completed for compression.
- Conduct risk screening and evaluate, to limit and/or mitigate flash fire.
- Develop a best practice involving compressor leak awareness/evacuation.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Equipment or materials not secured

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Oct 19 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

LO shut the inlet valve on one of the skim tanks, this caused fluid to overflow from the free water knock out into the suction scrubber of the booster compressor. Once the valve was opened the skim tank was overrun.

WHAT WENT WRONG?

Valves lined up incorrectly.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review operations maintenance processes for communicating maintenance actions.

BARRIERS:

Hardware Barrier Failures: Shutdown Systems – including operational well isolation and drilling well control equipment

Human Barrier Failures: Response to process alarm and upset conditions (e.g. outside safe envelope)

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

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DATE: Oct 20 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

LO arrived at location after checking SCADA to investigate a pressure loss. LO arrived to find that the poly-steel transition fully separated at the poly-poly weld allowing 351 kcf to release to the atmosphere over a 12-hour period.

WHAT WENT WRONG?

Poly-steel transition fully separated at the poly-poly weld.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Oct 28 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Equipment: Compressor/blower/fan
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

Broken oil line allowed oil to spray onto turbo leading to fire.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

DATE: Nov 10 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Water dumps on the production vessels at central tank battery (CTB) malfunctioned sending all liquids to the skim tank. This increased flow caused a liquid overflow through a gas outlet (PRV /thief hatch) causing the spill.

WHAT WENT WRONG?

Water dumps on the production vessels at CTB malfunctioned sending all liquids to the skim tank.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review quality control procedures for programming.

BARRIERS:

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Nov 23 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Pump screen had plugged allowing tanks to overflow and a sump line check valve failed allowing fluid to be spilled at the wellhead.

WHAT WENT WRONG?

Pump screen plugged and a sump line check valve failed.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review overnight shut in procedure.

BARRIERS:

Hardware Barrier Failures: Detection Systems

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Dec 1 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Completions
MODE OF OPERATION: Well intervention / Well servicing
POINT OF RELEASE: Breaking Containment Locations: Piping/valve (inadvertently left) open to atmosphere
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

On 12/1/2022 at approximately 5 am, a nearby landowner heard a gas release and contacted the company. Employees arrived on location and were able to isolate a 2" test port valve that was inadvertently left open.

WHAT WENT WRONG?

2" test port valve was inadvertently left open.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review overnight shut in procedure.

BARRIERS:

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Dec 1 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Instrumentation and small bore tubing
PROCESS SAFETY FUNDAMENTAL: We watch for weak signals

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

PM was notified of a gas release at the CDP. Upon arrival, a mechanic found a ¾" nipple on the recycle loop had broken off due to corrosion and vibration releasing 272 kcf into the atmosphere over a 30-minute period.

WHAT WENT WRONG?

¾" nipple on the recycle loop had broken off due to corrosion and vibration.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Monitoring, reporting and learning

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Dec 2 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Oil tanks overfilled due to the lease automatic custody transfer (LACT) failure and Tank hi-alarms did not activate to notify operators prior to tanks overflowing.

WHAT WENT WRONG?

LACT failed to run and Tank Hi-alarm failed.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Detection Systems

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

DATE: Dec 17 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Meter
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

LO reported a release of oil from a lease automatic custody transfer (LACT) unit at a compressor station.

WHAT WENT WRONG?

LO stopped release and discovered a 1/2" nipple cracked at the threads, releasing 21.19bbl oil to the pad surface.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Nipple was replaced and facility returned to normal operations.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

DATE: Dec 21 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Compressor shut down and resulting pressure increase on a 6" field gathering line weld area failure. Natural gas (446 kcf) and produced water (1.5 bbl) released.

WHAT WENT WRONG?

Flowline split at weld when compressor shut down.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review inspection and maintenance practice for facility.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Human Barrier Failures: Surveillance, operator rounds and routine inspectionManagement System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Dec 26 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Production Technician discovered fluid releasing from a 2" Victaulic tee on the discharge of the circulating pump at the Tank Battery.

WHAT WENT WRONG?

The tee split open and was broken due to an ice plug that developed, causing pressure to build up behind the plug.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available because it was related to weather conditions.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

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DATE: Jan 23 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Upset
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

A loss of power event resulted in the overfill of a produced water tank when high level instrumentation failed to operate due to a flaw in the design, releasing condensate and produced water into secondary containment.

WHAT WENT WRONG?

The original power loss was caused by poor fuel quality used for the power generators. As a result, the pumps that empty the tank were shut down and not available.

Incorrect logic - the well controller allowed the wells to continue to produce water into tank for an extended period of time. This logic is an algorithm programmed into the PLC (Programmable Logic Controller) to shut-in the wells if there is no tank increase after a set duration of time.

Level indicator was not calibrated, which prevented an alarm that would have indicated high level.

A design flaw in the tank's instrumented high level trip system prevented the sensor from reading accurately and stopping the flow to the tank when needed (the sensor configuration created an air pocket that prevented reading of the correct level).

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Update commissioning procedures to verify calibration of instrumented safety systems.

Update the design manual to ensure tanks are designed so that air pockets to not inhibit high level sensors from reading tank levels accurately.

Review control logic to determine the optimal alarm and trip strategy.

BARRIERS:

Hardware Barrier Failures: Shutdown Systems – including operational well isolation and drilling well control equipment

Management System Element Barrier Failure: Policies, standards and objectives

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Feb 24 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We walk the line

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

A small-bore gas line that is expected to have liquids under normal operation was left stagnant during cold temperatures and allowed to freeze. Subsequent troubleshooting operations executed while attempting to restart compressor resulted in a vent valve being left open that provide a path to release gas to atmosphere later when the line thawed by warm ambient conditions.

WHAT WENT WRONG?

1. Design: the design of the start gas line could have been improved to prevent from freezing under expected conditions.

2. Following procedures: the operator was not authorized to deviate from the start-up procedure in order to troubleshoot the startup operation (and therefore did not have a systematic process to rely on to ensure all valves opened during troubleshooting were closed after).

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Team Communication: Reinforce topics of potential for scope creep and the control of work process at the next site contractor quarterly safety meeting.

Review and update (as necessary) the winterization plans/PMs.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate communication

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DATE: Apr 27 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: We recognise change

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

Flash gas from produced well fluids was routed from the well site oil and water storage tanks to flare where it ignited. The deflagration event developed into an unstable detonation as it flowed backward through the flare stack and the flame arrestor, continuing into the two upstream oil storage tanks where it subsequently created an explosion.

WHAT WENT WRONG?

The type of flame arrestor installed was not appropriate to prevent the flame from propagating back up the flare under the conditions in which the plant was operating.

The management of change (MOC) process was not completed for the isolation of the south oil tank, which would have been expected to be completed in order to isolate the south flare where the ignition event occurred.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Ensure that all flame arrestors are installed with the appropriate L/D ratio as specified by the manufacturer.

2. Systematically review all sites with tanks that have a 2-flare design to determine if feasibility of isolating/converting the design to include a single flare.

3. Develop and implement control logic on tanks with flare sweep (purge) gas to signal an alarm and shutdown if minimum flare sweep gas is lost.

4. Update design standard to include sweep gas signal alarms and shutdown logic for tank flare sweep/purge gas systems

5. Revise the Crisis and Continuity Management (CCM) Policy and associated Incident Management Plans (IMP) to include: drill plans and cadence, post-drill reviews, clearly defined Incident Management Team roles and responsibilities, monthly reviews of the IMP to ensure personnel contact information and responsibilities are clear, and training on the CCM policy and associated plans.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Human Barrier Failures: Response to emergencies

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Jun 19 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: We recognise change

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Hole in buried 8-inch pipeline due to an internal corrosion mechanism consistent with microbial activity resulted in a release of oil and gas.

WHAT WENT WRONG?

- Design of the pipeline was originally sized for a larger volume of fluid and did not specify a minimum required flow velocity that would have indicated a problem when the design flowrate was changed.
- The line was not maintained due to lack of certain installed facilities (pig launcher was not installed).
- The operation of the upstream operations exceeded the design intent and introduced excessive water carry-over volumes into the pipeline.
- The risk assessment for the upstream facilities identified water carry-over as a risk and installed Coriolis meters for mitigation, but this risk and mitigation was not communicated effectively to the operators of the pipeline (and as a result they were not utilized effectively).

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Ensure pipeline maintenance plans account for both the design of the pipeline pigging facilities and the pipeline minimum flow requirements.
- Implement a system to detect and alarm during water carry-over events.
- Ensure interface documents between different parts of the business account for changes made during execution.
- Develop a joint communication strategy to enable business units to share risks and integrity solutions.

BARRIERS:

Hardware Barrier Failures: Process Containment

Hardware Barrier Failures: Detection Systems

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Risk assessment and control

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate communication

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DATE: Dec 7 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

The 1" threaded piping that supplied high pressure (1090 psig) gas to a well for the purpose of providing artificial lift (gas lift) was found to have failed during normal operation, releasing gas to the atmosphere. The well was located at a remote wellsite and operations was able to shut the site down safely and no injuries were recorded.

WHAT WENT WRONG?

Investigation is still in progress.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Investigation is still in progress.

BARRIERS:

Unspecified: Unspecified

CAUSAL FACTORS:

NONE: None: Unspecified

DATE: Apr 25 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Workover/Well services
MODE OF OPERATION: Well intervention / Well servicing
POINT OF RELEASE: Wells, drilling and intervention: Well
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Replacement of the production tubing shale gas production well was being performed using a workover rig at the pad site.

At 09:30 an uncontrolled flow, and release of hydrocarbon gas began through the partly replaced production tubing. Incident control was established and well control expertise was deployed.

Well control contractor provided support in regaining control of the well; casing flow was diverted to open frac tanks, the fully open safety valve (FOSV) was successfully installed at 20:00. The valve was closed, kill mud pumped and containment achieved at 21:30.

WHAT WENT WRONG?

1. Primary well barrier from formation pressure inadequately applied and/or maintained.
2. Initial attempt to stab FOSV was performed too late.
3. Well control hazards not identified in workover program (charge from offset well frack).
4. Incomplete job safety analysis.
5. Low well control competence (training, practice & verification).
6. Ineffective method of well monitoring during sensitive phase of workover.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

1. Adopt industry best practice assuring adequate kill fluid volume to bullhead as a primary barrier.
2. Formalise and implement process of categorizing well interventions by risk (determining minimum risk control measures).
3. Ensure well programs include relevant well control hazards, mitigations, and considerations for use in site risk assessments.
4. Ensure that Workover / Drilling crews carry minimum Well Control competences, build training roadmap with rig contractors

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Organization, resources and capability

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Jan 3 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Planned shutdown
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: We watch for weak signals

CATEGORIES:

Fire/Explosion damage >$100,000 direct cost to the company

INCIDENT DESCRIPTION:

Security Console was notified of a fire at location.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Jan 13 2022
COUNTRY: USA
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Temporary
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Instrumentation and small bore tubing
PROCESS SAFETY FUNDAMENTAL: We recognise change

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

The IP (an operator) arrived on location to conduct Nitrogen bottle swap out. As the IP completed the process and charged the system to check for leaks, IP proceeded to bleed off regulator. When the IP went to bleed off the regulator, the regulator over-pressured causing the bottom plate to come apart striking the IP's left hand.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

NORTH AMERICA OFFSHORE

No Tier 1 PSE narratives reported.

RUSSIA & CENTRAL ASIA ONSHORE

DATE: Dec 3 2022
COUNTRY: Azerbaijan
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Wells, drilling and intervention: Well intervention equipment
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

On 03.12.2022, at around 11:30 PM, during the extraction of gas in the operation well in the gas storage area of the Gas Storage Operation Department, the wellhead fitting completely collapsed and was thrown aside, as a result of which the well turned into an open gas fountain, no fire/explosion observed.

WHAT WENT WRONG?

The well integrity was failed (investigation is going on).

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Investigation is going on.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Emergency Response Equipment and Systems

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

RUSSIA & CENTRAL ASIA OFFSHORE

DATE: Aug 28 2022
COUNTRY: Azerbaijan
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Workover/Well services
MODE OF OPERATION: Well intervention / Well servicing
POINT OF RELEASE: Wells, drilling and intervention: Well
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

After perforation works in a well, gas fountain appeared in an Oil and Gas Extraction Department, Oil and Gas Extraction Area.

WHAT WENT WRONG?

- Lack of control, supervision.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Increase of control.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

SOUTH & CENTRAL AMERICA ONSHORE

DATE: Jun 20 2022
COUNTRY: Argentina
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 1
ACTIVITY: Workover/Well services
MODE OF OPERATION: Well flow testing
POINT OF RELEASE: Wells, drilling and intervention: Well intervention equipment
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

During test operations with flowback equipment from an exploratory well, while routine tasks were being carried out in the high-pressure sand separator area, an unplanned release of energy occurs.

WHAT WENT WRONG?

Unplanned release of energy.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Improper position (in the line of fire)

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

DATE: Oct 8 2022
COUNTRY: Argentina
FUNCTION: Drilling and Completion Operations
NUMBER OF DEATHS: 0
ACTIVITY: Drilling
MODE OF OPERATION: Drilling
POINT OF RELEASE: Wells, drilling and intervention: Mud circuit/tanks
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

While 8.75" intermediate phase was drilling at 2929 m, with oil-based mud, the shaker was stopped due to electrical failure causing a spill.

WHAT WENT WRONG?

Unplanned release due to power failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Mar 12 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

A 6" gas pipe (gas pipeline) was impacted by a motor grader while groundwork was being done. The pipeline was buried at ground level and marked with a stick. The released gas disperses without further consequences.

WHAT WENT WRONG?

Failure to follow procedure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Review working methodology in field.
- Review contractor procedure.
- Review Signposting and distancing procedure.

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Jul 18 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Tank overflow in tank battery.

WHAT WENT WRONG?

Inlet Shut Down Valve did not close after Tank HIHI Level plus other incoming flows were not included in the HiHi level trip configuration.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Review pump control logic
- Review all HiHi level safeguards functionality
- Update Contingency plan
- Perform Hazop of the installation

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Response to process alarm and upset conditions (e.g. outside safe envelope)

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Failure to warn of hazard

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

DATE: Aug 28 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Gas blow-by with liquid spill in the area of the knockout tank.

WHAT WENT WRONG?

Level instrument malfunction due to calibration not in accordance with the characteristics of the equipment.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Install level indicator in knockout tank.

BARRIERS:

Hardware Barrier Failures: Detection Systems

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Oct 4 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Start-up
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

An operator in charge of chemical treatment starts the pump for injection of additive without opening the ½" manual valve that enables the additive to the process. Seconds later, he hears a noise generated by the gas leak resulting from the detachment of the ½" valve.

WHAT WENT WRONG?

No LOTO applied in recently installed new additive pump not ready for use (no PSV installed).

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Write installation, operation, maintenance and start up procedure for additive installations.
- Review PSV set point for similar additive installations

BARRIERS:

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Management System Element Barrier Failure: Policies, standards and objectives

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

DATE: Oct 21 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

An operator during the field round identifies a gas leak in the contact tower through a ¼" hole in the body of a 1" globe valve.

WHAT WENT WRONG?

Erosion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Valve material change already identified but the valve was not replaced (delay in new valve supply process).

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Aug 24 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

During the mechanical excavation task for the road crossing, a 3" ERFV pipe belonging to the producing well was intercepted, causing rupture and spillage.

WHAT WENT WRONG?

Unplanned release due to pipe break.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Failure to warn of hazard

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Sep 22 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Carrying out excavation tasks to replace the oil pipeline on arrival, the EFRV gas pipe ruptures due to the impact of a backhoe loader.

WHAT WENT WRONG?

Unplanned release due to gas pipeline rupture.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Use of Protective Methods: Failure to warn of hazard

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

DATE: May 5 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Pipeline operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

In the route of the pipeline after the stoppage due to the action of a line break, a loss of the pipeline was detected.

WHAT WENT WRONG?

Unplanned release of energy.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

DATE: May 12 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Pipeline operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

During the oil pumping operation in specification through the 32" dispatch line of the Industrial Plant, a major spill occurred due to its rupture in the section from the inlet collector to booster pumps.

WHAT WENT WRONG?

Unplanned release of energy.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Aug 17 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Puncture on entry to tank, battery pumping stopped.

WHAT WENT WRONG?

Unplanned release.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Nov 7 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Condensate tank overflow due to pump start operating error.

WHAT WENT WRONG?

Unplanned release due to operational error.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Failure to warn of hazard

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Jan 25 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Breakage occurred in the body of the general line of the collector in the thermally coated aerial section.

WHAT WENT WRONG?

Unplanned release of energy.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Jun 29 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Instrumentation and small bore tubing
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Because of strong gusts of wind, one of the sides of the perimeter fence of the well fell and hit the ½" nipple in the orifice box; cutting it and generating a gas leak through the ½" coupling.

WHAT WENT WRONG?

Nipple break 1/2".

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Work Place Hazards: Storms or acts of nature

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DATE: Oct 24 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

PRD release to atmosphere above threshold in any 1 hour period and results in liquid carryover or discharge to a potentially unsafe location or onsite shelter in place or public protective measure (e.g. road closure)

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Start of fire at the base of the burner of the gas plant of the field.

WHAT WENT WRONG?

Unplanned release and start of fire.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Ignition Control

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

DATE: Feb 23 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

The separator level measurement system fails, low level switch is inhibited. The level transmitter was damaged due to the ingress of water, which caused the opening of the discharge valve.

WHAT WENT WRONG?

Measurement system failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Jul 24 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (intended discharge location)
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Venting from the battery to the pit flare due to an open failure of the relief valve and outlet retention to the gas pipeline, battery gas and Ultra Low Pressure network gas are vented.

WHAT WENT WRONG?

Valve failure.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Jan 2 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: We sustain barriers

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Crude oil spill with production water in the well driving line at the income to the collector, it occurred because the check valve passed.

WHAT WENT WRONG?

Failure due to corrosion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Risk assessment and control

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Jun 14 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

10" process line failure, 10% oil pipe free water knockout discharge to cutter tank. Loss between indirect fired heater and

WHAT WENT WRONG?

Failure due to corrosion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Management System Element Barrier Failure: Commitment and accountability

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Feb 5 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Pipe rupture in the descent of the production bridge of the well.

WHAT WENT WRONG?

Failure due to corrosion.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Management System Element Barrier Failure: Commitment and accountability

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Nov 2 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Routine maintenance
POINT OF RELEASE: Equipment: Heat exchanger
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

During the PSV change manoeuvre, the FWO by-pass manoeuvre was performed, complemented by its blocking upstream and downstream. Finishing the change and placing the new PSV, there was a level rise and spillage through the upper part of the separator equipment.

WHAT WENT WRONG?

Operational/operation causes: maintenance.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Commitment and accountability

Management System Element Barrier Failure: Risk assessment and control

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

PROCESS (CONDITIONS): Organizational: Inadequate communication

DATE: Nov 5 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Wells, drilling and intervention: Well
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Fluid surge in the hole during tool lowering manoeuvre, simple assembly at 798 mts. The fluid exceeded the level of the cellar, draining at the location and burning pit.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

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DATE: Dec 4 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Wells, drilling and intervention: Mud circuit/tanks
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

During the transfer of diesel from the Auxiliary Tank to the active drilling fluid system, an overflow of the degasser compartment was observed.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Improper lifting or loading

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

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DATE: Mar 15 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Wells, drilling and intervention: Mud circuit/tanks
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Spill of emulsion in the mud pit due to loss of base oil mud through the lower plug of the mud pit.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Dec 5 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Wells, drilling and intervention: Well intervention equipment
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Cellar overflow due to water and HC leak in well.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

Hardware Barrier Failures: Shutdown Systems – including operational well isolation and drilling well control equipment

Management System Element Barrier Failure: Risk assessment and control

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate supervision

DATE: Nov 15 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Choke
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period**INCIDENT DESCRIPTION:**

Failure and breakage of the CPO cover o-ring (orifice holder box), producing a spray and accumulations of liquid in part of the location.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/ materials/products

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DATE: Sep 9 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Choke
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Leak in the form of a spray in a flanged connection of a 4" control manifold.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

DATE: Aug 1 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Hydrocarbon leak in well through valve section C.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

DATE: Aug 11 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Onshore Pipelines/Flowlines: Onshore pipeline
PROCESS SAFETY FUNDAMENTAL: Unspecified

INCIDENT DESCRIPTION:

Leak in 4" fuel gas general line pipeline.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

No Barriers Allocated

CAUSAL FACTORS

No Causal Factors Allocated

DATE: Mar 26 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping joint
PROCESS SAFETY FUNDAMENTAL: We stop if the unexpected occurs

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

In the fuel gas panel sector, an operator was preparing to purge the gas line and when the valve was opened, the ½" inch capillary tubing pipe rotated.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Monitoring, reporting and learning

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Following Procedures: Overexertion or improper position/posture for task

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

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DATE: Oct 29 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Start-up
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Choke
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

After the well was opened from the Manifold, there was a break due to erosion and a subsequent leak in the Orifice Box of the Choke Manifold.**WHAT WENT WRONG?**

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: May 31 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Equipment: Filter
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

HC spill in the loading area due to a broken bolt on the pump suction filter cover.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Aug 26 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Flare and atmospheric vent systems (not at intended discharge location)
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Damage to the pilot gas supply line of the flare.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: Jun 13 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: Unspecified

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Gas leak in well due to production valve produced by body erosion.

WHAT WENT WRONG?

Not available.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Not available.

BARRIERS:

Hardware Barrier Failures: Structural Integrity

Hardware Barrier Failures: Process Containment

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: May 17 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Piping material/tubing
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Leakage of oil emulsion (BSW 90%) due to a hole in the line that connects the oil tank with the transfer pumps of the unit.

WHAT WENT WRONG?

Mechanical Integrity.

Inadequate quality assurance procedure, in execution of inspection procedures.

Inadequate task list for inspection.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Review the list of tasks, to include the mandatory inspection of pipe galleries within treatment stations and collectors.

Implement revised task list.

Train inspection technicians after reviewing procedures.

Check if there are other pipes in a similar situation, in pipe galleries.

Elaborate technical instructions for critical equipment subject to loss of containment, with guidance on the flow of the leak treatment process.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Plans and procedures

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

SOUTH & CENTRAL AMERICA OFFSHORE

DATE: Jan 7 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We respect hazards

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

During the filling process of chemical tank with sodium bisulfite (oxygen scavenger), overflow occurred through the overflow line. In an attempt to contain the flow, the operator manually used a CAP, generating splashes of the product that reached his face and causing eye irritation.

WHAT WENT WRONG?

Tank overflow line design failure.

Inadequate risk identification, assessment, consideration and mitigation.

Incomplete procedure or risk scenario for performing the task not contemplated.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Evaluate how to prevent the total depletion of the tank when it overflows.

Based on this analysis, correct the projects for the overflow lines of the other chemical tanks.

Insert a point of attention in the procedure for operating tanks in which, upon reaching the overflow level, there will be total depletion of the tank and potential overflow of the skid. It should also inform that overflow line should never be plugged when releasing product.

Do a technical study to define the appropriate procedure for checking the level of the tanks.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Policies, standards and objectives

Management System Element Barrier Failure: Risk assessment and control

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Following Procedures: Improper position (in the line of fire)

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PEOPLE (ACTS): Use of Protective Methods: Personal Protective Equipment not used or used improperly

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Feb 14 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Subsea: Subsea equipment
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

There was a pressure drop in the gas injection line. Using a ROV it was identified that there is a damage between the wet Christmas tree and the production adapter base.

WHAT WENT WRONG?

The snapping of cases and consequent detachment of the annular loop of flow line connector were caused by three main factors:

- Excessive dynamic loading related to high flow velocity in the production adapter base circuit and intensified by the transition from 5" to 2" loop sections.
- Low structural rigidity of production adapter base circuit mainly caused by fixation of the 5" valve, just resting on the base structure.
- Low preload of the 2" flange cases, as a result of the procedure performed at the time of equipment assembly.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Implement change to use higher strength fasteners to ensure tightening will be sufficient to stabilize flange.

Define a specific procedure to readjust the tightening of 2" flange of annular loop of the flow line connector in all production adapter bases in stock and perform the retightening of all.

Re-evaluate the flow induced vibration fatigue life, with numerical tool developed and calibrated with vibration monitoring, in cases of production adapter bases and wet christmas trees that are operating and considering the operational history of all.

BARRIERS:

Hardware Barrier Failures: Process Containment

Hardware Barrier Failures: Detection Systems

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Management System Element Barrier Failure: Policies, standards and objectives

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

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DATE: Feb 16 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Loss of primary containment of 1.93 cubic metres of oil through body of the shutdown valve located in condensate header of compression system and slop return to the process.

WHAT WENT WRONG?

Rupture of valve stud causing body disassembly:

- Inadequate project input data.
- Acceptance criteria for inappropriate materials and equipment.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Perform field inspection for SDVs with stainless steel body of systems with high-risk potential fluids.

Replace stud bolts of SDV bodies with stainless steel bodies in systems with high potential fluids.

Issue a Technical Alert alerting to the need to prioritize inspection/replacement of stud bolts in SDV valve bodies.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Acceptance of handover or restart of facilities or equipment

Management System Element Barrier Failure: Policies, standards and objectives

Management System Element Barrier Failure: Asset design and integrity

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

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DATE: May 17 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank
PROCESS SAFETY FUNDAMENTAL: Not applicable

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

An oil sheen was observed on the side of the platform, moving in the direction of the sea current. Visually, it is possible to notice the emergence of bubbles emerging on the surface of the sea.

After observation of level variation in tanks and inspections carried out by ROV, failure in the integrity of two of the vessel's cargo tanks was identified.

WHAT WENT WRONG?

Design Requirements for cathodic protection systems do not identify the depth of water layer in oil cargo tanks.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Complete inspection of identified tank bottoms to restart operations.

Perform repairs or reapply coatings, or repair corroded steel structure as appropriate to ensure immediate side integrity.

Review tank wash design (related to equipment and procedures) to identify ways to help reduce build up of solids, sludge in oil cargo tanks.

Include in instructions related to cleaning, inspections and repairs of tanks, a requirement to cover the risk of mechanical damage and mitigation.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Management System Element Barrier Failure: Risk assessment and control

Management System Element Barrier Failure: Asset design and integrity

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Jan 23 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Other production
POINT OF RELEASE: Piping in Process and Utility Systems (excluding subsea) : Valve (body, stem, plugs)
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

Gas leak produced by the tight shut off valve of pressure measuring instrument during depressurization manoeuvre of production well service line, resulting in sensitization of gas detection sensors and emergency shutdown of the unit.

WHAT WENT WRONG?

Lack of prior analysis of safety conditions for carrying out tasks and dangers/risks in the workplace.

Failure in process of shutdown and return to operation related to the inversion service in figure 8 blind flange. Failure to comply with the isolation procedure. Removal of the blocking device and alignment of the shutdown valve without analysis of the isolation plan of which the valve was part.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Schedule and perform face-to-face refresher training on procedure for isolating and releasing energized equipment. Target Audience: Leadership, Production Operators, Vessel and Maintenance; Evidence proposal: Training attendance lists.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Organization, resources and capability

Management System Element Barrier Failure: Plans and procedures

Management System Element Barrier Failure: Execution of activities

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Servicing of energized equipment/inadequate energy isolation

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DATE: Jul 7 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Drain
PROCESS SAFETY FUNDAMENTAL: We maintain safe isolation

CATEGORIES:

An employee, contractor or subcontractor 'days away from work' injury and/or fatality

INCIDENT DESCRIPTION:

An operator, when trying to unblock the drain valve located in produced water intake, used a wire in valve. When unblocking the valve, hot water flow was released over the thermal protection of pipe immediately below the valve outlet and reached the legs of the two operators who were performing the task, causing temperature injuries. One of the operators was released to return to activities and the second was away from work for more than 3 days.

WHAT WENT WRONG?

It was found that the blocked drain used to drain the isolated section is designed for an unsafe location, which could aggravate the consequences of the accident, if it was unobstructed.

There is no drain clearing procedure.

No suitable tool was available for mechanical unblocking of drains.

Operating procedure not used: It is not allowed by the Safety Manual to unblock vents, drains and the like, using mechanical resources (wire, rod, tube and others), when the equipment or system is pressurized.

One of the injured operators reported being aware that the activity should be carried out quickly, a feeling reinforced by the leadership on board. The negative impact would be the increase of free water in cargo tanks. The 3 principles - Pause, Process and Continue - were not applied by any of those present, including leadership.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

- Create a specific procedure for mechanically clearing drains for platforms.
- Provide adequate device for unblocking drains and train the operation team.
- Provide a warning sign regarding the obstacle between the drain and the secondary containment.
- Create an opportunity maintenance plan to unblock water treatment plant equipment drains.

BARRIERS:

Hardware Barrier Failures: Process Containment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Management System Element Barrier Failure: Policies, standards and objectives

Management System Element Barrier Failure: Organization, resources and capability

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Following Procedures: Improper position (in the line of fire)

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Servicing of energized equipment/inadequate energy isolation

PEOPLE (ACTS): Use of Protective Methods: Failure to warn of hazard

PEOPLE (ACTS): Use of Protective Methods: Equipment or materials not secured

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DATE: May 14 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We apply procedures

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

During product transfer between tanks there was unplanned release of oil through dump valve of port side slop tank and part of the oil migrating to the sea.

WHAT WENT WRONG?

Transfer pump operator had radio communication failure.

Equalization line valves between tanks should be kept open, but were closed at the event.

Intense ship motions (heave, pitch and roll) due to wind and waves.

Lack of risk perception in the transfer of fluids between tanks

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Implement portable radio verification routine before use, with annotation in the logbook before liquid load transfer operations.

Review procedure related to recirculation/transfer operations between tanks, so that the movement of the ship is taken into account before carrying out internal cargo transfers.

Review the procedure related to the recirculation/transfer operation between tanks, including risks associated with the recirculation process.

Review the documents to ensure that all gauges, high and very high-level alarms on the tanks have a list of actions to be taken in case of alarm.

BARRIERS:

Hardware Barrier Failures: Shutdown Systems – including operational well isolation and drilling well control equipment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Human Barrier Failures: Response to process alarm and upset conditions (e.g. outside safe envelope)

Management System Element Barrier Failure: Organization, resources and capability

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate communication

PROCESS (CONDITIONS): Organizational: Inadequate supervision

DATE: Oct 9 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Tanks and Sumps/Pits: Atmospheric tank overflow
PROCESS SAFETY FUNDAMENTAL: We stay within operating limits

CATEGORIES:

A release above threshold quantity in any 1 hour period

INCIDENT DESCRIPTION:

During transfer of oil between the slop tanks, there was oil overflow to the deck from the port side slop, through the pressure and vacuum relief valve, and then, a part of the oil was discharged to the sea through tank scupper.

WHAT WENT WRONG?

Non-existent Maintenance Plan: There was no activation of the audible alarm in control room. The investigation found that maintenance is performed only during interventions on tank sensors.

Inadequate communication between stations: During preparation for recirculation of the port slop tank, a subject related to starboard side slop was inserted and the control room operator began transferring cargo from the starboard side slop to the port side slop without paying attention to reduction in the slop level starboard.

The port slop tank does not have an operational level sensor. The procedure could help in ways of checking tank level and critical items before and during recirculation manoeuvres or transfer between tanks.

Poorly designed or manufactured equipment: The scupper lid does not fit to ensure watertightness.

The platform does not have interlocking logic implemented to stop cargo pumps in cases of very high level in final tank.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

Develop a maintenance plan that includes checking the internal contacts of the operating panel in order to avoid alarm failures.

Evaluate viability of implementing a logic to stop cargo pumps in events of a very high level in cargo tanks, separating scenarios in which pump assists in draining those in which pump generates a very high level.

Include level sensors for cargo tanks and slops in critical elements list of platform, even if they are just detection without logic actuation.

Develop a procedure (or revise the existing one) to include specific actions for recirculation/internal transfer of cargo.

Disclose the event to teams involved in tank manoeuvres, focusing on the attention needed for planning and executing manoeuvres.

Check the condition of fixing the scuppers and adjust when necessary.

BARRIERS:

Hardware Barrier Failures: Detection Systems

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Human Barrier Failures: Response to process alarm and upset conditions (e.g. outside safe envelope)

Management System Element Barrier Failure: Asset design and integrity

Management System Element Barrier Failure: Plans and procedures

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate communication

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DATE: Nov 7 2022
COUNTRY: Brazil
FUNCTION: Production
NUMBER OF DEATHS: 0
ACTIVITY: Production operations
MODE OF OPERATION: Normal
POINT OF RELEASE: Relief, Vent and Discharge Systems: Relief valve (body, plugs)
PROCESS SAFETY FUNDAMENTAL: We stay within operating limits

CATEGORIES:

PRD release to atmosphere above threshold in any 1 hour period and results in liquid carryover or discharge to a potentially unsafe location or onsite shelter in place or public protective measure (e.g. road closure)

INCIDENT DESCRIPTION:

Emergency Shutdown due to gas actuation confirmed on the starboard aft main deck, through the vacuum breaker valve of the inert gas intake header.

WHAT WENT WRONG?

This event is under investigation.

CORRECTIVE ACTIONS & RECOMMENDATIONS:

This event is under investigation.

BARRIERS:

Hardware Barrier Failures: Shutdown Systems – including operational well isolation and drilling well control equipment

Human Barrier Failures: Operating in accordance with procedures - PTW, Isolation of equipment, Overrides and inhibits of safety systems, Shift handover, etc.

Human Barrier Failures: Surveillance, operator rounds and routine inspection

Human Barrier Failures: Response to process alarm and upset conditions (e.g. outside safe envelope)

Management System Element Barrier Failure: Organization, resources and capability

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective warning systems/safety devices

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate communication

PROCESS (CONDITIONS): Organizational: Inadequate supervision

FATAL INCIDENTS CLASSIFIED AS PROCESS SAFETY EVENTS 2022

AFRICA ONSHORE

DATE: Aug 1 2022
COUNTRY: Nigeria
FUNCTION: Production
NUMBER OF DEATHS: 1
CAUSE: Explosion, fire or burns,
ACTIVITY: Maintenance, inspection, testing
RULE: Hot work
BODY PART: Body part not allocated
NATURE OF INJURY: Nature of injury not allocated

Employer: Contractor Occupation: Maintenance, Craftsman

NARRATIVE:

During hot work activity, there was fire incident which impacted two contractor personnel. The more severely injured person was transferred to a specialist burn centre, but he unfortunately passed away.

WHAT WENT WRONG:

Contractor personnel were performing planned hot work inside a tank on three stilling wells. These works were required to prepare the tank for calibration (hydrotesting) prior to returning the tank to service. IP1 was grinding datum plate bolts off stilling well 2. IP2 was welding a datum plate on the base of stilling well 3, approximately 1.7m away from stilling well 2. After removing two of the four bolts from stilling well 2, crude oil that had accumulated in its 2" compartment began flowing from stilling well 2, spraying in the direction of stilling well 3. Because of the welding or grinding work, the released crude oil ignited. Both IP1 and IP2 sustained burns in the resulting fire.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Tank certification as hydrocarbon free – tanks shall be certified as 'gas free' after tank draining and cleaning, in fact, free of residual hydrocarbons. Personnel certifying tanks shall be aware of all potential locations of residual hydrocarbons, including those where use of standard gas detector would be unlikely to detect their presence.
- Tank cleaning – Cleaned tanks shall be free of residual hydrocarbons. Tank cleaning personnel shall have 'front of mind' awareness of potential locations of residual hydrocarbons.
- Emergency notification – Emergency service personnel shall promptly and successfully notify in case of emergencies. A consistent (across assets/locations) and simple process shall be in place for company staff and contractor personnel to provide emergency notification.
- Personal protective equipment (PPE) – Contractor personnel shall understand and fully comply with the PPE Manual.
- DEP standard drawing for a stilling well – Company and contractor personnel should be skilled enough to understand and correctly interpret the drawing content.

CAUSAL FACTORS:

No Causal Factors Allocated

AFRICA OFFSHORE

No fatal incidents classified as process safety events.

ASIA/AUSTRALASIA ONSHORE

DATE: Oct 8 2022
COUNTRY: Pakistan
FUNCTION: Production
NUMBER OF DEATHS: 1
CAUSE: Pressure release,
ACTIVITY: Maintenance, inspection, testing
RULE: Work authorisation
BODY PART: Body part not allocated>>
NATURE OF INJURY: Nature of injury not allocated

Employer: Contractor Occupation: Drilling/Well Servicing Operator

NARRATIVE:

During Preventive Maintenance (PM) of emergency shutdown valve at a wellsite, the actuator of the valve abruptly burst and its metallic part hit a nearby contractor. The injured Person (IP) was taken to the clinic, where he passed away. The actuator detached parts hit the flow line Pressure Differential Transmitter (PDT) tubings, which resulted in minor crack on a Down Stream (D/S) welded nipple. This led to gas leakage.

WHAT WENT WRONG:

- Risk Assessment not revised following the deviation from Scope of Work (SOW).
- Tight schedule, only one Instrument team was on site to perform all the planned activities.
- Complacency due to routine activity being perceived as low risk, leading to overconfidence of workers.
- The Instrument Technicians themselves deviated from SOW without applying Management of Change process.
- Stop Work Authority not applied.
- Ineffective supervision. Supervisors were present on site, but focused on other activities.
- Lack of means of communication. Unavailability of radio device for communication between control room and work area leading to pressurized actuator for more than 7 minutes.
- Lack of awareness of performing authority related to process hazards leading to risk underestimation.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Any change or deviation to design, asset, process, work procedure or practices shall be accurately identified, reported and assessed by competent and trained personnel.
- The job shall be suspended in case of change in the SOW, and Risk assessment revised to involve all the stakeholders.
- Ensure all personnel involved in the operation are aware of the operating instructions and methods of statement.
- Ensure proper communication among working team members on site.
- Ensure competence, awareness and training of the personnel involved in operations.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

ASIA/AUSTRALASIA OFFSHORE

DATE: Mar 3 2022
COUNTRY: Malaysia
FUNCTION: Production
NUMBER OF DEATHS: 1
CAUSE: Explosion, fire or burns,
ACTIVITY: Production operations
RULE: Hot work
BODY PART: Body part not allocated
NATURE OF INJURY: Nature of injury not allocated

Employer: Contractor Occupation: Unknown

NARRATIVE:

A fire incident occurred at an offshore production platform during hot work activity inside a pressurized habitat for deck plate replacement near a Booster Compressor Suction Scrubber involving contractor personnel. The fire resulted in one fatality after three days of treatment at a burn intensive care unit, and one burn injury.

WHAT WENT WRONG:

Hot work activity carried out inside habitat on live HC piping.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

1) Thorough risk assessment for any hot work activity during live plant environment.

2) Avoid erecting the habitat on the live HC line.

CAUSAL FACTORS:

No Causal Factors Allocated

EUROPE ONSHORE

No fatal incidents classified as process safety events.

EUROPE OFFSHORE

No fatal incidents classified as process safety events.

MIDDLE EAST ONSHORE

No fatal incidents classified as process safety events.

MIDDLE EAST OFFSHORE

No fatal incidents classified as process safety events.

NORTH AMERICA ONSHORE

No fatal incidents classified as process safety events.

NORTH AMERICA OFFSHORE

No fatal incidents classified as process safety events.

RUSSIA & CENTRAL ASIA ONSHORE

No fatal incidents classified as process safety events.

RUSSIA & CENTRAL ASIA OFFSHORE

No fatal incidents classified as process safety events.

SOUTH CENTRAL AMERICA ONSHORE

DATE: Jun 20 2022
COUNTRY: Argentina
FUNCTION: Production
NUMBER OF DEATHS: 1
CAUSE: Pressure release,
ACTIVITY: Production operations
RULE: Line of fire
BODY PART: Body part not allocated
NATURE OF INJURY: Nature of injury not allocated

Employer: Contractor Occupation: Process/Equipment Operator

NARRATIVE:

During test operations with flowback equipment from an exploratory well, while routine tasks were being carried out in the high-pressure sand separator area, an unplanned release of energy occurred.

WHAT WENT WRONG:

- Inadequate risk identification.
- Inadequate change management.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Execution of recommended practice for well de-sanding activities.

CAUSAL FACTORS:

No Causal Factors Allocated

SOUTH & CENTRAL AMERICA OFFSHORE

No fatal incidents classified as process safety events.

FATAL INCIDENTS RELATED TO PROCESS SAFETY BUT NOT CLASSIFIED AS PROCESS SAFETY EVENTS 2022

AFRICA ONSHORE

No fatal incidents related to process safety but not classified as process safety events.

AFRICA OFFSHORE

No fatal incidents related to process safety but not classified as process safety events.

ASIA/AUSTRALASIA ONSHORE

No fatal incidents related to process safety but not classified as process safety events.

ASIA/AUSTRALASIA OFFSHORE

No fatal incidents related to process safety but not classified as process safety events.

EUROPE ONSHORE

No fatal incidents related to process safety but not classified as process safety events.

EUROPE OFFSHORE

No fatal incidents related to process safety but not classified as process safety events.

MIDDLE EAST ONSHORE

No fatal incidents related to process safety but not classified as process safety events.

MIDDLE EAST OFFSHORE

No fatal incidents related to process safety but not classified as process safety events.

NORTH AMERICA ONSHORE

No fatal incidents related to process safety but not classified as process safety events.

NORTH AMERICA OFFSHORE

No fatal incidents related to process safety but not classified as process safety events.

RUSSIA & CENTRAL ASIA ONSHORE

DATE: Jul 5 2022
COUNTRY: Kazakhstan
FUNCTION: Construction
NUMBER OF DEATHS: 2
CAUSE: Pressure release,
ACTIVITY: Construction, commissioning, decommissioning
RULE: Energy isolation
BODY PART: Body part not allocated
NATURE OF INJURY: Nature of injury not allocated

Employer: Contractor	Occupation: Unknown
Employer: Contractor	Occupation: Unknown

NARRATIVE:

An incident occurred resulting in two fatalities and two injuries. A crew of four people were working on the blind flange connection at a 36" line. Another crew had completed a hydrotest on that same line on July 4th. As the crew was working, the blind flange was displaced. The sudden release of pressure caused injuries that resulted on two fatalities and hospitalization of two other employees. A fifth person who was not part of the crew but located in the same working area was seen at the clinic on site and later released.

WHAT WENT WRONG:

Displaced blind flange caused a sudden release of pressure.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Not yet available.

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Failure to warn of hazard

PEOPLE (ACTS): Use of Protective Methods: Inadequate use of safety systems

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective Personal Protective Equipment

PROCESS (CONDITIONS): Protective Systems: Inadequate security provisions or systems

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment materials/products

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

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DATE: Aug 23 2022
COUNTRY: Kazakhstan
FUNCTION: Construction
NUMBER OF DEATHS: 1
CAUSE: Struck by (not dropped object), ACTIVITY: Construction, commissioning, decommissioning
RULE: Energy isolation
BODY PART: Body part not allocated
NATURE OF INJURY: Nature of injury not allocated

Employer: Contractor Occupation: Unknown

NARRATIVE:

A business partner crew completed a pneumatic leak test of the chilled water/return line in the utilities building and then had transitioned to a function test of the flushing equipment. During the flushing equipment function test, one of the temporary 4-inch hoses connected to the chiller system disconnected from its coupling, causing a release of air. Additionally, air was released through a discharge hose that was routed from one of the temporary manifolds to the top of a tank. The hose began to move in an uncontrolled motion as air reached the end of the hose. A crew member evacuating from the chiller room through the western exit was fatally struck by the hose.

WHAT WENT WRONG:

Hose with energy (air) struck person.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Not yet available.

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation intentional (by individual or group)

RUSSIA & CENTRAL ASIA OFFSHORE

No fatal incidents related to process safety but not classified as process safety events.

SOUTH & CENTRAL AMERICA ONSHORE

No fatal incidents related to process safety but not classified as process safety events.

SOUTH & CENTRAL AMERICA OFFSHORE

No fatal incidents related to process safety but not classified as process safety events.

HIGH POTENTIAL EVENTS CLASSIFIED AS PROCESS SAFETY EVENTS 2022

AFRICA ONSHORE

DATE: Oct 23 2022
COUNTRY: Algeria
FUNCTION: Production
CAUSE: Pressure release,
ACTIVITY: Production operations
RULE: Bypassing safety controls

NARRATIVE:

There was an Emergency Total Shutdown of the central processing facility. The root cause of this trip was not known, and so electrical and instrument supervisors were brought in to check if there was any problem before proceeding to restart the facilities. During this period and exactly at 06:45 there was gas detection from several gas detectors. A cloud of gas was noticed coming from the old horizontal flare pit. All production wells were immediately shutdown and the facilities depressurized.

HSE fire brigade installed water curtains and opened several fire monitors to dilute and disperse the gas cloud. After closing the production wells and depressurizing the facilities, the gas cloud started decreasing until it had disappeared. No Personal injury or asset damage resulted from this event.

WHAT WENT WRONG:

Backflow from hydrocarbon source. Check valves were the only protection layer and they failed due to internal presence of solids.

Water dilution line connected to the decommissioned horizontal flare pit, due to a previous non-conformant MoC.

PROCESS SAFETY FUNDAMENTAL:

We maintain safe isolation.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Lack of as built drawings.

CAUSAL FACTORS:

No Causal Factors Allocated

DATE: Nov 6 2022
COUNTRY: Gabon
FUNCTION: Production
CAUSE: Explosion, fire or burns,
ACTIVITY: Production operations
RULE: Unspecified

NARRATIVE:

At approximately 1:25 a.m., an emergency shutdown of the facility occurred. At the same time, an operator in the area on tour noticed a fire at the crude export pumps. The operator immediately alerted the control room, which triggered the emergency response (1111).

The night shift (three staff members) went to the muster point 50 m from the station, as required by the

emergency procedure. At approximately 1:35 a.m., the First Response Team (FIT) arrived at the station and after a quick assessment of the risks and the extent of the flames, they decided to attack the fire safely, using the fire extinguishers present in the station. It should be noted that 100% of the fire extinguishers at the site were used and replaced within three days.

WHAT WENT WRONG:

Operational Risk Assessment (ORA) procedure is available, but not understood and even less rigorously applied on site.

Poor management of operational changes on site without technical authorities.

PROCESS SAFETY FUNDAMENTAL:

We respect hazards.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Organize awareness and training sessions on operational risk management procedures. Emphasizing the risks associated with all operational changes.
- Follow recommendations from previous similar incidents.
- Strengthen the risk assessment process for any change or validation of a project or technical solution – All operational changes must be validated by the discipline's technical authority.
- Re-evaluate the ordering process for safety critical equipment and spare parts by involving the technical authorities.
- A Company expectation is to act responsibly and safely: This is what our operations team demonstrated by attacking the fire in a stage where they felt safe to act.
- To operate safely is a Company expectation. Safety is a priority and cannot be compromised.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

AFRICA OFFSHORE

No high potential events classified as process safety events.

ASIA/AUSTRALASIA ONSHORE

DATE: Aug 13 2022
COUNTRY: Malaysia
FUNCTION: Production
CAUSE: Explosion, fire or burns,
ACTIVITY: Maintenance, inspection, testing
RULE: Other

NARRATIVE:

The heat up preparation was started. One of the activities performed was the removal of the heat up burner (HUB) plug. After the removal of the plug and civil inspection, flash fire incident occurred while waiting for the installation of the heat up burner. One of the contractor partners was caught in the flash fire and suffered a burn injury.

WHAT WENT WRONG:

- Most likely root cause of the flash fire is the combination of 3 factors.
- Hydrocarbon presence due to 10UZ412 3%-5% opening or possible passing valve.
- Breaking of the flange under vacuum conditions introducing atmospheric air into the reactor.
- Temperature in the reactor still above autoignition temperature (>500 degrees C).

PROCESS SAFETY FUNDAMENTAL:

We maintain safe isolation. We walk the line.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

1. Review the current practice of isolating the 10UZX11 upstream block valve after equipment startup as it has the potential to send hydrocarbon to reactors if the 10UZX12 valve is passing, propose the best way forward.
2. Review the existing heat up burner design for a safer design.
3. Review the requirement of field operator to be at site all the time monitoring/supervising maintenance, turnaround and construction during HUB removal/installation activity.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

ASIA/AUSTRALASIA OFFSHORE

No high potential events classified as process safety events.

EUROPE ONSHORE

DATE: Dec 14 2022
COUNTRY: Romania
FUNCTION: Production
CAUSE: Explosion, fire or burns,
ACTIVITY: Production operations
RULE: Hot work

NARRATIVE:

During welding works at a pipeline located near a saltwater tank, an explosion followed by fire occurred at the saltwater tank. The roof of the saltwater tank was thrown away, damaging a nearby oil tank. Several barracks and equipment were damaged. Also, some third-party buildings in the vicinity were damaged.

WHAT WENT WRONG:

- Lack of accountability for site ownership responsibility in terms of safe operations practices.
- Non-observance of work task regarding gas testing before and during the works (according to Hot Works Permit).
- Failure to establish and to observe the proper safety measures inside the facility upon verification and approval of the Hot Works Permit.

- No training organized on the operator PTW System (JSA, SIMOPS, Isolation).
- Lack of risk awareness on the hydrocarbon gas hazards from executant and operators.
- Operators poor training on process safety risks.
- Lack of communication between contractor companies working.
- Stop work authority not applied by the employees of all companies present on site.
- Missing competency of coordinator of pipe execution team and execution team lack of competence on the Contractor safe system of work (PTW system).
- The mechanical & process isolation procedure was not applied.

PROCESS SAFETY FUNDAMENTAL:

We control ignition sources.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Common Process and Integrity risk assessment for all facilities operated by contractor.
- Joint evaluation of operational documents (e.g., Operations Manual, P&IDs) to identify and update the documents to reflect current plant conditions, as built status and foreseeable normal, abnormal and emergency situations. Train operators on content of Operations Manual (normal, abnormal, emergency situations). Evaluate the extension of review to other facilities operated by contractor.
- Develop an HSE Procedure regarding contractors for projects within operated facilities – 3 parties' protocol (company/contractor/external contractors); A hand over protocol should be in place for each work performed in those facilities – access on facility, training campaign, HSE responsibility, etc.

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Use of Protective Methods: Failure to warn of hazard

PEOPLE (ACTS): Use of Protective Methods: Inadequate use of safety systems

PEOPLE (ACTS): Use of Protective Methods: Equipment or materials not secured

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

PROCESS (CONDITIONS): Organizational: Inadequate communication

EUROPE OFFSHORE

No high potential events classified as process safety events.

MIDDLE EAST ONSHORE

No high potential events classified as process safety events.

MIDDLE EAST OFFSHORE

No high potential events classified as process safety events.

NORTH AMERICA ONSHORE

DATE: Jul 5 2022
COUNTRY: USA
FUNCTION: Drilling
CAUSE: Exposure noise, chemical, biological, vibration, extreme temperature,
ACTIVITY: Drilling, workover, well operations
RULE: Work authorisation

NARRATIVE:

After night shift completed the blender swap, the 1 inch chemical hose for the biocide was left unsecured inside secondary containment by the blender.

While transferring biocide chemical, the chemical hose was turned on releasing an estimated 2 barrels of the biocide chemical inside secondary containment and 14 barrels outside of containment onto the ground.

WHAT WENT WRONG:

The spill was not detected until after more than 6 hours. Personnel not familiar / not trained regarding response to spills or releases to the environment.

Both chem add and operator did not perform the communication and verification of the flow.

Replacing equipment between crew change, repetitive technical issues, new supervisor unfamiliar with staff experience.

PROCESS SAFETY FUNDAMENTAL:

We Apply Procedures.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Reinforce incident reporting and stop work authority.
- Assess current competency profile for personnel.
- Provide training based on the competency assessment for everyone.
- Amend/update existing procedure to include verification process when changing/swapping blenders throughout check list.
- Develop check list for replacing/swapping blender.
- Establish a hand over process (document) to establish proper handover between changing crews.

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Lack of attention/distracted by other concerns/stress

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

DATE: Jan 12 2022
COUNTRY: USA
FUNCTION: Production
CAUSE: Explosion, fire or burns,
ACTIVITY: Maintenance, inspection, testing
RULE: Line of fire

NARRATIVE:

A flash fire occurred when a contractor, the Injured Person (IP), was blowing down the surface casing pressure. Proper notifications were made, and the location was shut in. The events were as follows:

- Vent off casing gas as part of routine rounds.
- Opened manual valve and flash fire occurred.
- Shut valve and called for help.
- Lead Operator attended to IP.
- IP received medical attention.

WHAT WENT WRONG:

Standard Operating Procedure (SOP) for Casing Pressure Reduction was not complete nor implemented through training. Management of Change (MOC) could not be located for casing pressure equipment change. Insufficient risk assessment and hazard mitigation. Inadequate collaboration and unclear roles/responsibilities. Safety concerns not raised and/or not addressed. Inadequate technical barriers to prevent pressure build-up.

PROCESS SAFETY FUNDAMENTALS:

We apply procedures. We recognise change. We respect hazards.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Key learning for other units:

- SOP out of date, not used.
- MOC process not robust enough.
- Risk assessments needed for high-risk work.
- Leadership engagement needed.

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

DATE: Oct 18 2022
COUNTRY: USA
FUNCTION: Production
CAUSE: Explosion, fire or burns,
ACTIVITY: Production operations
RULE: Other

NARRATIVE:

Battery fire.

WHAT WENT WRONG:

Emergency shutdown (ESD) on wells failed to close and water tanks ran over sending fluid to combustor starting initial fire.

PROCESS SAFETY FUNDAMENTAL:

We sustain barriers.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Retrofit existing ESD and solenoid designs with more reliable ESD system. Establish ESD valves and systems preventative maintenance plans. Develop automation procedure establishing accountability and documentation requirements.

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Inadequate use of safety systems

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DATE: Mar 22 2022
COUNTRY: USA
FUNCTION: Production
CAUSE: Exposure noise, chemical, biological, vibration, extreme temperature,
ACTIVITY: Production operations
RULE: Unspecified

NARRATIVE:

Separator end cap failure.

WHAT WENT WRONG:

End cap on the separator had failed casing release.

PROCESS SAFETY FUNDAMENTAL:

We walk the line.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Develop suitable operational asset integrity program considering this failure.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Jan 14 2022
COUNTRY: USA
FUNCTION: Production
CAUSE: Pressure release,
ACTIVITY: Drilling, workover, well operations
RULE: Energy isolation

NARRATIVE:

Parked kill line hose.

WHAT WENT WRONG:

Kill line hose parted at a crimp connection.

PROCESS SAFETY FUNDAMENTAL:

We apply procedures.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Assure document pre-job inspection ensuring proper equipment is in place and to document reassigned wells/ actions in a handover. Update procedures and ensure step to isolate pump tee and document.

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Protective Methods: Equipment or materials not secured

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/ materials/products

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

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DATE: Mar 4 2022
COUNTRY: USA
FUNCTION: Production
CAUSE: Pressure release,
ACTIVITY: Drilling, workover, well operations
RULE: Unspecified

NARRATIVE:

Gas release.

WHAT WENT WRONG:

Natural gas release.

PROCESS SAFETY FUNDAMENTAL:

We maintain safe isolation.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Develop freeze protect SOP with pressure limits and contingent solutions when pumping operations reach limits. Update procedure.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

NORTH AMERICA OFFSHORE

No high potential events classified as process safety events.

RUSSIA & CENTRAL ASIA ONSHORE

No high potential events classified as process safety events.

RUSSIA & CENTRAL ASIA OFFSHORE

No high potential events classified as process safety events.

SOUTH & CENTRAL AMERICA ONSHORE

No high potential events classified as process safety events.

SOUTH & CENTRAL AMERICA OFFSHORE

No high potential events classified as process safety events.

HIGH POTENTIAL EVENTS RELATED TO PROCESS SAFETY BUT NOT CLASSIFIED AS PROCESS SAFETY EVENTS 2022

AFRICA ONSHORE

DATE: Feb 20 2022
COUNTRY: Congo
FUNCTION: Production
CAUSE: Explosion, fire or burns,
ACTIVITY: Maintenance, inspection, testing
RULE: Bypassing safety controls

NARRATIVE:

During a rainy period, a closed drainage valve caused rainwater to accumulate on the roof of a tank that favoured the growth of moss and lichen.

There were also traces of paint on the tank roof following recent waterproofing work.

A team of operators (T1) had been working on the roof of the tank to clean off the moss and traces of paint. The team was using a presumed algaecide/fungicide considered as a specific, multi-surface, grease-removing agent – and equipment (PPE, scrapers, brooms, etc.).

Later, a second team (2), which was working on the tank wall, noticed a paint run in their work area. Because they did not have any cleaning agent, they asked team (1) to give them some of the product. Team (2) took what they thought was an empty metal pot of hardener as a recipient for the cleaning agent, in fact containing a residue of hardener and paint from a previous work – and poured part of the cleaning agent into it. When they had finished their task (around midday), the rest of the product that had not been used (around 3 litres) was handed back to team (1).

At the end of the day, the remaining product in the metal pot was poured back into a container of the pure product. Exhausted by the heat, the operators left the work area, leaving the equipment and products on site.

In the early evening, two firefighters performing their round noticed smoke coming from the tank roof and stepped in to contain the fire outbreak. The container into which the product had been poured had melted and spontaneously combusted. The fire had then spread to the equipment nearby and damaged part of the separating wall on the periphery of the roof. Immediate actions: -Intervention by firefighters and triggering of the deluge system of the tank.

WHAT WENT WRONG:

- Exothermic reaction after chemicals had been mixed (paint +product + hardener) in a closed polyethylene container.

Additional causes identified:

- Poor chemical storage management.
- Work area not properly tidied at the end of the shift.
- It was Insufficient maintenance of the rainwater drainage system causing moss to accumulate.
- Insufficient supervision of works and non-compliance with work permit close-out rules.
- Lack of knowledge and awareness of the risks related to the use of chemicals.
- Fatigue due to heat exposure. Conditions not identified during the risk assessment.

PROCESS SAFETY FUNDAMENTAL:

We control ignition sources. We respect hazards.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Check that the operators handling chemicals have received suitable training.
- During safety rounds, check that chemical containers are suitable, properly labelled and stored in areas surrounded by a means of retention.
- Factor in information on chemical compatibility (Ref. Material Safety Data Sheets).
- Remind people of the obligation to clean and tidy the work area when work is finished, preferably when the permit is closed out for the day.
- Check that the tank rainwater drainage valves are open during rainy periods and/or after periods of heavy rainfall.
- Remind team managers about the work permit process.
- Take into account the stress involved in the work and the exposure to intense heat when preparing the work and in the risk assessment.

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PEOPLE (ACTS): Inattention/Lack of Awareness: Fatigue

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

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DATE: Sep 14 2022
COUNTRY: Gabon
FUNCTION: Production
CAUSE: Explosion, fire or burns,
ACTIVITY: Production operations
RULE: Other

NARRATIVE:

A wax re-injection project was commissioned to solve the problem of the accumulation of more than 2,000 bbl. of wax at the landfill for several years, by purchasing and installing an electric heater in a merlon to dissolve the wax and re-inject it into the process. On September 14, around 8:15 a.m., a contractor noticed a fire starting inside the wax dissolving merlon located at the level of the pig receiver of the 18" pipeline outlet. The contractor hit the nearby fire extinguisher (water and additive) and then went to the control room to raise the alarm.

WHAT WENT WRONG:

- The Procedure was adapted to the project, but has shortcomings for the management of wax from the 18" because the level estimates are done by eye.
- The personnel had not been sufficiently trained on the new wax heating system.

PROCESS SAFETY FUNDAMENTAL:

We control ignition sources. We respect hazards.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Revise the wax reinjection procedure to emphasize the fire hazard and mitigation measures.
- Install a low-level safety device in the merlon.

- Implement a weekly training program by the fire team.
- Re-evaluate the use of fire extinguishers in our facilities.
- Investigate the possibility of an alternative means of processing wax.
- Strengthen the procedure for awarding Projects to Operations
- Indicate which HAZID/HAZOP/MoC. procedures are required depending on the type of project.
- Re-evaluate the ordering process for Safety Critical equipment and tools by involving the SSE department.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Protective Systems: Inadequate security provisions or systems

AFRICA OFFSHORE

No high potential events related to process safety but not classified as process safety events.

ASIA/AUSTRALASIA ONSHORE

No high potential events related to process safety but not classified as process safety events.

ASIA/AUSTRALASIA OFFSHORE

DATE: Apr 25 2022
COUNTRY: Vietnam
FUNCTION: Production
CAUSE: Unspecified - Other,
ACTIVITY: Production operations
RULE: Unspecified

NARRATIVE:

Gas release from gas lift compressor intercooler.

WHAT WENT WRONG:

A tube bundle in the gas lift compressor inter-cooler burst and 453kg of hydrocarbon gas was released to the atmosphere.

PROCESS SAFETY FUNDAMENTAL:

Not applicable.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

Poor documentation of material selection during design led to lack of consideration for external corrosion as a failure mechanism for the cooling system.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate/defective tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

EUROPE ONSHORE

No high potential events related to process safety but not classified as process safety events.

EUROPE OFFSHORE

DATE: Jun 17 2022
COUNTRY: Denmark
FUNCTION: Construction
CAUSE: Pressure release,
ACTIVITY: Construction, commissioning, decommissioning
RULE: Bypassing safety controls

NARRATIVE:

An operations team were preparing a 14" pipeline riser for reconnection to a new topside facility service with the cap suitable for the associated axial load.

The 14" condensate export line had remained isolated, water-filled, inhibited, and decommissioned since the project hook down phase in 2019. The line was positively isolated at one end and fitted with an engineered cap at the other end. The cap was connected to the riser via a pipe coupling. Both cap and coupling were rated for 10bar service with the cap suitable for the associated axial load. As 100% lower exposure limit was identified when sampling the void space contents at one end, as per local procedure, the team were attempting to perform Nitrogen pressure purges of the 10-metre void space to displace residual hydrocarbon before removal of the cap to allow welding of a connecting pup-spool to the open riser. Whilst trying to locally verify the applied N2 purge pressure, the engineered cap and pipe coupling were vertically ejected. The equipment and debris resulted in physical injuries to three people in the vicinity; Injured Person 1 was lifted upward and fell back to scaffold, Injured persons 2 and 3 suffered minor facial injuries from impact with debris and/or equipment.

WHAT WENT WRONG:

- Applied N2 purge pressure exceeded axial strength of pipe coupling.
- Improper installation of coupling during hook down, invalidated pressure rating of assembly.
- Uncertainty of pressure applied due to use of ineffective purge equipment (wrong pressure indicator range, no overpressure protection, inadequate control of pressure).
- Multiple workers in vicinity of work site.
- Access to work site not controlled (no barriers).
- Failure to mitigate Line of Fire hazard (N2 manifold locally mounted at riser location).
- Purging proceeded without stopping job.
- Recognized concerns did not lead to an effective intervention.

- Inadequate Pipeline/Process integrity assurance process.
- Installation of 10bar coupling during hook down did not lead to formal derating of pipeline.
- Poor installation and lack of 'mechanical completion' checks at hook down
- Operational hook-up needs not fully considered at hook down phase.

PROCESS SAFETY FUNDAMENTAL:

We apply procedures. We stop if the unexpected occurs.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Ensure that process/pipeline integrity is maintained for temporarily decommissioned lines and equipment (de-rating, testing, verification, recording and assurance).
- Ensure that site procedures provide adequate mitigation of risks associated with N2 purging activities, and that overpressure protection, system integrity check, and correct means of pressure control/monitoring are assured as prerequisite controls.
- Ensure that purge and/or pressure test equipment is located to mitigate line of fire hazard.
- Ensure that pressure purging activities are regarded as high-risk, and systematically subjected to method statement, risk assessment and PTW.

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PROCESS (CONDITIONS): Protective Systems: Inadequate/defective guards or protective barriers

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

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DATE: Feb 2 2022
COUNTRY: UK
FUNCTION: Production
CAUSE: Struck by (not dropped object),
ACTIVITY: Lifting, crane, rigging, deck operations
RULE: Safe mechanical lifting

NARRATIVE:

Contact with pressure gauge on pig receiver during lifting operations.

Container being lifted from supply vessel to a restricted landing space made contact with pressure gauge on live pig receiver. No hydrocarbon release occurred.

WHAT WENT WRONG:

- Inadequate guidance/rules for lifting adjacent to live plant.
- Inadequate risk assessment.

PROCESS SAFETY FUNDAMENTALS:

We respect hazards. We apply procedures. We stop if the unexpected occurs.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Development of deck management plan/procedure with definitive rules/guidance for lifting adjacent to live equipment.
- Additional laydown area hazard assessment to be completed.
- Standardisation of cargo management process.

CAUSAL FACTORS:

PROCESS (CONDITIONS): Work Place Hazards: Congestion, clutter or restricted motion

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

MIDDLE EAST ONSHORE

DATE: May 18 2022
COUNTRY: Kurdistan Region Of Iraq
FUNCTION: Drilling
CAUSE: Pressure release,
ACTIVITY: Drilling, workover, well operations
RULE: Bypassing safety controls

NARRATIVE:

During rigging down of well testing equipment, an atmospheric storage tank was over pressured using compressed air from a compressor via a manifold. This over pressure blew the tank roof off the body of the tank, which landed in a nearby wastewater pit.

WHAT WENT WRONG:

- Supervisor purged the tank with air which was non-compliance to the standard operating procedure.
- 2" vent lines on the tanks were welded shut without MoC documentation.
- HAZOP did not recognize over pressure as an event in the atmospheric tanks.

PROCESS SAFETY FUNDAMENTAL:

We stay within operating limits. We apply procedures. We respect hazards.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Develop a procedure for contracting and the use of atmospheric and low-pressure tanks/Vessels.
- All 3rd Party contractors personnel training and competency checks to be done before start of operations and ensure they are competent.

CAUSAL FACTORS:

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate work standards/procedures

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

DATE: Nov 8 2022
COUNTRY: Kurdistan Region Of Iraq
FUNCTION: Production
CAUSE: Struck by (not dropped object),
ACTIVITY: Transport - Land
RULE: Work authorisation

NARRATIVE:

An 80 ton crane and operator had completed a lifting operation at the production facility for the installation of a new security cabin, and were due to return to the town, when the driver received a call from the crane owner requiring him to relocate both himself and the crane to a well inside our operation block, due to a hose leak identified on an existing crane at the rig site (another crane used at rig site). On route, the crane's brakes started to smoke due to the steep decline from the well site road turning to the base of the mountain, where the driver stopped to let the brakes cool down for approximately 33 minutes. The driver then restarted the crane and continued his journey.

The route was a total distance of 31.2 kilometres. The first stop was after 3.1 kilometres calculated from the wellsite turning to the base of the mountain due to the crane's brakes starting to smoke. The driver continued his journey a further 26.1 kilometres over inclining and declining roads before approaching the turning. As the driver reached the turning, he found that the brakes would not function and that the crane was moving too fast to make the right turn. A split-second decision was made to continue down the declining road hoping that the road would level out. The crane driver was unaware that the well site was located 2 kilometres ahead at the bottom of the hill. On approach to the well site, the crane crashed through both the security barrier and perimeter gates, continued across the pad, colliding with two concrete barriers used to protect the flowline, before finally coming to a stop above the flowline after pushing the line off its supporting brackets.

WHAT WENT WRONG:

Immediate Cause:

Brake failure due to an incorrectly set up braking system reducing the crane's braking power to less than 40%.

Basic Cause:

The sub-standard setup of the crane's braking system on August 6 and 7 meant that only three of its eight wheels were fully functional, severely reducing its stopping power.

The crane driver did not hold a driving license, heavy plant license or crane training certificate.

Root Cause:

No contractor assurance systems in place pre/post contract award. A system for auditing and inspecting contractors and sub-contractors would assure that compliance with contractual obligations is being fulfilled before contract award and throughout the contract's lifetime.

PROCESS SAFETY FUNDAMENTAL:

We stop if the unexpected occurs.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

1. Implementing third-party audits and inspections of contractors and sub-contractors confirms contractual and legal compliance in line with a suitable standard, such as ISO 9001. This program would need to include pre-contract and post-contract awards.

2. Enhance operational controls to include inspections of driver's licenses with specific attention to driving categories.

3. Assessment of security checkpoints confirming suitability of controls.

4. Company to consider the contract hire of a full-time 80Ton crane and two crane operators on a rotational basis. Hiring a crane and operator would significantly reduce the need to hire cranes externally while ensuring compliance with Local and National Laws.

CAUSAL FACTORS:

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate maintenance/inspection/testing

MIDDLE EAST OFFSHORE

No high potential events related to process safety but not classified as process safety events.

NORTH AMERICA ONSHORE

No high potential events related to process safety but not classified as process safety events.

NORTH AMERICA OFFSHORE

No high potential events related to process safety but not classified as process safety events.

RUSSIA & CENTRAL ASIA ONSHORE

No high potential events related to process safety but not classified as process safety events.

RUSSIA & CENTRAL ASIA OFFSHORE

No high potential events related to process safety but not classified as process safety events.

SOUTH & CENTRAL AMERICA ONSHORE

DATE: Aug 10 2022
COUNTRY: Argentina
FUNCTION: Production
CAUSE: Explosion, fire or burns,
ACTIVITY: Construction, commissioning, decommissioning
RULE: Hot work

NARRATIVE:

While performing tracing and thermal insulation activities over a tank located in a Crude Oil Plant, a sudden ignition and subsequent fire occurred. The fire was controlled by plant firefighting system and the Company's own firefighting team.

WHAT WENT WRONG:

1. Inadequate Change Management (step from installation of works to operational).
2. Vapour recovery unit was not operational.
3. The Job Hazard Analysis was performed the day before the incident and did not include the current condition.
4. Gas blanketing was not operational.
5. The Area Authority did not participate in the planning meeting.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

1. Adapt matrix to define team dedicated to commissioning and start-up.
2. Comprehensive workshop between Operations, Facilities focusing on the pre-commissioning, commissioning and start-up stages.

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Use of Tools, Equipment, Materials and Products: Improper use/position of tools/equipment/materials/products

PEOPLE (ACTS): Use of Protective Methods: Inadequate use of safety systems

PEOPLE (ACTS): Use of Protective Methods: Equipment or materials not secured

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Tools, Equipment, Materials and Products: Inadequate design/specification/management of change

PROCESS (CONDITIONS): Work Place Hazards: Hazardous atmosphere (explosive/toxic/asphyxiant)

PROCESS (CONDITIONS): Organizational: Inadequate hazard identification or risk assessment

PROCESS (CONDITIONS): Organizational: Inadequate supervision

PROCESS (CONDITIONS): Organizational: Poor leadership/organizational culture

PROCESS (CONDITIONS): Organizational: Failure to report/learn from events

DATE: Sep 4 2022
COUNTRY: Peru
FUNCTION: Production
CAUSE: Explosion, fire or burns,
ACTIVITY: Production operations
RULE: Work authorisation

NARRATIVE:

During maintenance work on a 3" automatic valve, located at the NGL outlet of a condensate stabilizer (on standby) there was a leak of condensed liquid. During the event, there was no damage to people or assets. This event was classified as a Tier 2 PSE.

WHAT WENT WRONG:

PERSONAL FACTORS

Lack of risk awareness. There was no evidence of the task´s planning/scope process performed by either the planner or the operator. During planning, it is not detected that the valve to be intervened does not have blocking valves.

Inadequate discipline. Work Permit with an isolation certificate that does not correspond. The lack of adequate isolation certificate is not detected neither by operator nor by local area authority.

LABOR / SYSTEM FACTORS

Inadequate work scheduling/planning. The planning/scope process was performed by either the planner or the operator.

Normalization of deviation from a procedure. Upon the change in the scope of the task, the local area authority nor the operator required to suspend the task and renew the ATS.

Inadequate identification of risks in the design. Valve to intervene does not have blocking valves.

Inadequate assessment of preventive maintenance needs. The preventive maintenance program is not executed.

PROCESS SAFETY FUNDAMENTALS:

We maintain safe isolation. We respect hazards.

CORRECTIVE ACTIONS AND RECOMMENDATIONS:

- Carry out reinforcement training in compliance with the Life Saving Rules.
- Ensure that Contractors maintenance personnel have the appropriate competence for the work to be carried out in the plant.
- Carry out training campaigns on hazards and risk of the plant process and Stop the Job Policy for maintenance personnel.
- Design control valve maintenance strategy.

CAUSAL FACTORS:

PEOPLE (ACTS): Following Procedures: Deviation unintentional (by individual or group)

PEOPLE (ACTS): Inattention/Lack of Awareness: Improper decision making or lack of judgment

PROCESS (CONDITIONS): Organizational: Inadequate training/competence

PROCESS (CONDITIONS): Organizational: Inadequate supervision

SOUTH & CENTRAL AMERICA OFFSHORE

No high potential events related to process safety but not classified as process safety events.

HIGH POTENTIAL EVENTS RELATED TO PROCESS SAFETY BUT NOT CLASSIFIED AS PROCESS SAFETY EVENTS – 2022

High Potential Events are defined to be any incident or near miss that could, in other circumstances, have realistically resulted in one or more fatalities.

IOGP has been gathering high potential descriptions from its Members since 2000. These include upstream significant events reported both by companies and contractors. Event reports are categorised by region, country, location (onshore/offshore), cause and activity at the time of the event, and Life-Saving Rule.

The database of high potential events categorised as Tier 1 PSE, or as PSE related, is now available and searchable at https://data.iogp.org/ProcessSafety/HighPotentialEvents .

For the entire database of high potential events go to https://data.iogp.org/Safety/HighPotentialEvents.

Note that high potential events requested are only those with the highest learning value, so the information shown does not represent all reportable events.

This database is a tool for learning and should not be considered a complete record of high potential events in the upstream oil industry or the IOGP Membership.

No high potential events were classified as process safety related in 2022.

International Association of Oil & Gas Producers

The Process Safety Event data presented in this report are based on voluntary submissions from participating IOGP Member Companies and are not necessarily representative of the entire upstream oil and gas industry.

The Process Safety Events (PSE) data presented are based on the numbers of Tier 1 and Tier 2 PSE reported by participating IOGP Member companies, and are categorised by:

- onshore and offshore
- drilling and production
- activities
- consequences
- material released

https://data.iogp.org

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