

BP OIL -- TOLEDO REFINERY

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SCOPE	This procedure defines the types, responsibilities, time frame and reporting methods when conducting investigations. This procedure also ensures that follow-up actions are tracked and the results are published.
HEALTH Special PPE & Special Hazards	Sharing of lessons learned and timely action on identified recommendations has a positive impact on the health and safety of all employees.
SAFETY	See Health section above
REFERENCE DOCUMENTS	OSHA 29CFR 1910.119(m) EPA 40CFR 68 Subparts C and D GDP 4.4-0001 GDP 4.4-0002 RM-P 4.4-0002 MIA and HiPo Investigation Process Group Marine Standard 3.4 RDP 7.1-0101 Section 3.8 and 3.9 REF-O 4.4-0101 Incident Investigation Expectations for US Refineries FIN-GDP 4.4-0001-02 HSSE & Operational incident reporting Boundaries FIN-GDP 4.4-0001-01 HSSE & Operational Data Reporting Requirements for BP Group
SPECIAL MATERIALS & EQUIPMENT	Tr@ction Action Tracking System
QUALITY	The quality of investigations along with the appropriate recommendations can impact the probability of incident recurrence.
ENVIRONMENTAL	Sharing of lessons learned for environmental incidents and timely action on identified recommendations may have a positive impact on the environment.

OVERVIEW

Purpose

This procedure establishes expectations for incident investigations to ensure their quality and reduce the risk of future accidents. Incident investigations identify the facts related to the event, determine the root causes, and develop corrective actions in order to prevent recurrence. The minimum requirements for establishing incident investigation teams, conducting the incident investigations and reporting the findings are provided. This procedure also defines incident reporting requirements. Note: for those incidents involving marine functions, the Group Marine Standard will also apply.

This policy addresses the requirements of GDP 4.4-0001 Reporting HSSE and Operational Incidents, GDP 4.4-0002 Incident Investigation, OSHA 29 CFR 1910.119; and EPA 40 CFR Part 68.

The basic tool for reporting all refinery HSSE incidents is Tr@ction. **All** Tr@ction fields must be completed as defined in this procedure. Contact the HSSE Department for specific Tr@ction system questions.

Definitions

Note: BP Group HSE Reporting Definitions can be found on the Financial Control and Accounting (FC&A) website. http://finance.bpweb.bp.com/en/local_assets/documents/Group_HSE_Definitions.doc

HIPO Definition: High Potential Incidents (HIPO)

An Incident or Unsafe/Unhealthy Condition or near miss where the most serious probable outcome is a Major Incident. In addition, this includes any Loss of Primary Containment Incident where the potential severity is classified at Level E or greater as defined in GDP 4.4-0001.

An **Incident** is defined as an unplanned event or occurrence that affects or has the potential to affect the health, safety, or security of people, assets, or the environment.

An **Integrity Management incident**, per the BP definition is “any incident where the main root cause would be addressed by the IM Standard and where there is actual or potential harm to people or the environment”. This includes:

- Loss or potential loss of primary containment
- The failure of an engineered system (including mechanical, electrical, structural, lifting, process or process control and protective systems/devices).

Significant Integrity Management incidents shall be investigated. These include MIA's, HIPO's, uncontrolled releases, unexpected failures of materials, equipment or structures, accelerated rates of damage and excursions outside safe design limits.

Loss of primary containment (LOPC) An unplanned or uncontrolled release of material from primary containment.

Note: Unplanned or unintentional releases are to be reported as loss of primary containment (LOPC) irrespective of the need for an immediate corrective action. However, fugitive emissions or gases released to the atmosphere from properly designed and operating safety devices (such as a flare, scrubber or relief device designed per API Standard 521 or an equivalent industry standard) are not considered as a loss of primary containment and are excluded. Releases from safety devices which have not operated as designed are to be reported as LOPC e.g. liquid releases from a gas flare system.

MIA Definition (Major incident Announcement)

A Major Incident is an incident as shown in attachments 6 and 6A, which has a severity rating of A-D or E.

A **Near Miss** is defined as an unplanned event where no loss occurs, but given a different set of circumstances, an actual loss through injury, damage to assets, environmental harm or business interruption could have occurred.

Primary Containment A tank, vessel, pipe, rail car or equipment intended to serve as the primary container or used for the transfer of the material. Primary containers may be designed with secondary containment systems to contain and control the release. Secondary containment systems include, but are not limited to, tank dykes, curbing around process equipment, drainage collection systems into segregated oily drain systems, the outer wall of double walled tanks, etc.

BP definition of a process safety event is:

An unplanned or uncontrolled loss of primary containment (LOPC) of any material including non-toxic and non-flammable materials (e.g. steam, hot condensate, nitrogen, compressed CO₂ or compressed air) from a process, or an undesired event or condition that, under slightly different circumstances, could have resulted in a LOPC of a material from a process.

Examples include:

- Loss of Primary Containment (e.g. oil spills, gas releases) from process plant
- Fires or Explosions resulting from a flammable liquid or gas release
- Injuries or Fatalities resulting from a fire or explosion

BP Refining has further defined a process safety near miss as:

“An unplanned event or occurrence that did not result in a release of hazardous materials or energy but could have, with the potential to result in a loss of primary containment, fire or explosion.”

Examples include:

- Pressure relief device releases to engineering designed relief system operating as intended
- Failure of a pressure relief device to operate when the process conditions reach or exceed the prescribed trigger/set point.
- Demand on a Safety Instrumented Function (SIF) implemented in a safety instrumented system
- Failure of a safety instrumented system to operate as designed when a demand is placed on the system during operation (i.e. unavailability on demand).
- Excursion of operating parameters such as pressure, temperature, flow outside defined safe operating limits
- Unusual or unexpected runaway reaction whether or not within design parameters.
- Physical damage to containment envelope due to impact from such as vehicle/ mobile plant collision and/or dropped loads/ falling objects within range of process equipment.
- Discovery of a failed or compromised safety critical protective device/ system, such as blocked and/ or inoperable relief systems, inoperable safety interlocks and/or emergency shutdown systems (full loop including detection elements).
- Discovery of a defeated safety critical protective device/ system, such as by-passed interlock, isolated safety critical instrument/ protective device and/or bypassed emergency shut-off valves not in accordance with formal defeat procedure.
- Discovery of an error of omission/ commission, such as failure to remove or install line blanks piping, incorrect installation of safety critical equipment, e.g. rupture disk, incorrect safety critical set points in DCS
- Discovery of unexpected / unplanned equipment condition, such as equipment discovered in "unexpected" condition due to damage or premature/ unexpected deterioration and/or wrong material used
- See the [Process Safety Near Miss Reporting Guidance for US Refineries](#) for clarification.

OSHA's requirement from its process safety standard is “The employer shall investigate each incident which resulted in, or could reasonably have resulted in a catastrophic release of highly hazardous chemical in the workplace.”

A **Product Quality Incident** is defined as an incident that meets one or more of the following definitions:

- 1) Off-specification product that is produced within the refinery including any product down-grade, or products requiring additional treatment or re-blending. A product is any material that's being shipped or getting tested for certification to ship.
- 2) Off-specification or improperly certified product that left the refinery fence-line.
- 3) Off-specification feedstock that entered the refinery fence-line.
- 4) Off-site pipeline, terminal, or customer complaint that can be traced back to the refinery.

A **Security Incident** is assault, threat, burglary, civil unrest, criminal property damage, drug/alcohol abuse/possession, robbery, security of information breach, terrorist/guerrilla activity and theft.

Refining MIA/HiPo Incident Investigation Quality Assurance Review:

A **Quality Assurance Review** is intended to ensure that key requirements for team composition, investigation techniques, and final report contents have been met for HiPo and MIA incident investigations in order to minimize the probability of incident reoccurrence at this site or other BP facilities.

<p>1.0 Incident Classification and Levels of Investigation</p>	<p>All incidents involving BP personnel, contractors, third parties and/or BP property, as described below, require investigation, communication and follow-up.</p> <p>__ 1.1 The basic tool for reporting all refinery HSSE incidents is Tr@ction. Incidents entered into Tr@ction shall be classified based on incident actual and potential severity. Reference the following attachments for severity matrices:</p> <ul style="list-style-type: none"> a. Attachment 6 - HSSE impacts b. Attachment 6A - Equipment & Non-Financial Impacts c. Attachment 6B - Product Quality Incident Impacts d. Attachments 7 and 7A - LOPC's of flammables and toxics <p>__ 1.2 Reference GDP 4.4-0001 Annex 3 for guidance on assessing potential severity. When the incident severity appears borderline between two levels, initially the more severe level shall be chosen.</p> <p>__ 1.3 S&OR shall be the Technical Authority for Incident Classification. BP entity leaders shall obtain the agreement of the relevant Deployed S&OR VP of the classification of actual severity A-E incidents and HiPo's. The Entity Director shall have agree rights on the classification of actual severity F and G level incidents.</p> <p>__ 1.4 An incident classified with an LOPC severity of level A-D or E (reference Attachment 7 and 7A) shall be classified as a High Potential Incident (HiPo) unless the actual severity results in the incident being classified as a Major Incident (MI).</p> <p>__ 1.5 If there is disagreement regarding the classification of an incident, this shall be raised with the Group Head Risk, Learning and HSSE, S&OR (or delegate) and CFO S&OR (or delegate). Reference GDP 4.4-0001 Annex 6 for the Incident Classification Resolution procedure to be used for issues related to recordability or classification.</p> <p>__ 1.6 When tools or calculations are used to inform a classification decision for an incident designated as reportable to the BP group, records of the information used to inform the decision shall be retained for at least six years.</p> <p>__ 1.7 When an initial recording of severity level is later revised due to additional or new information, the BP leader with accountability for the area or operation where the incident occurred shall confirm that the Tr@ction record is updated and applicable local or BP group notification is made.</p> <p>__ 1.8 The investigation level is based upon the highest actual severity of the incident - see Table below and Attachments 6, 6A, 6B, 7 and 7A. The appropriate superintendent or manager may elevate the investigation level based on potential severity at their discretion. Other issues to consider for elevation include: incident complexity, amount of resources required to reach root cause, and incidents that involve multiple areas.</p> <p>__ 1.9 If an incident (whatever its actual impact) is classified as a HIPO</p>
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because of its potential health and safety consequences, a Level 3 investigation is required.

__ 1.10 If an incident has different types of Health, Safety, Security, Environment (HSSE) and business impacts, the most stringent investigation requirements shall apply.

__ 1.11 For any exceptions from GDP 4.4-0002 for level and type of investigation required, the Superintendent accountable for the area where the incident occurs shall request approval from the Group Head of Risk, Learning and HSSE, S&OR, through a member of the senior team. If approved, the exceptions process described in section 4.0 of GDP 4.4-0002 shall be used.

BP Group Incident Severity Level and Toledo Classification: The BP Group incident severity matrices rank an incident by severity into one of 8 categories labeled A-H (Reference Attachments 6, 6A, 7 and 7A). Toledo's incident investigation policy uses Levels 0, 1, 2 and 3 to denote the severity of an incident and the type of investigation undertaken as a result. The general correlation between these two rating systems is shown on the chart below and level descriptions that follow.

BP Group Incident Severity	Toledo Incident Investigation Classification
A-E	3
F	2
G	1
H	0

__ 1.12 **Level 3 Investigation** is performed for all MIA and HIPO incidents and All BP Group Severity Level A through E incidents as shown on the Incident Classification Matrix.

__ 1.13 **Level 2 Investigation** is performed for all medium risk incidents (e.g. DAFW, recurring theme for injury or environmental event, etc.) which are all BP Group Severity Level F incidents as shown on the Incident Classification Matrices.

__ 1.14 **Level 1 Investigation** is performed for all low risk incidents (e.g. minor OSHA recordable, environmental reportable event) identified as BP Group Severity Level G incidents on the Incident Classification Matrices.

__ 1.15 **Level 0 Communication** is performed for the lowest risk incidents, near misses and/or unsafe conditions identified as BP Group Severity Level H as shown on the Incident Severity Matrices

__ 1.16 Reference Attachment 1 for the Incident Investigation Process Flowchart.

__ 1.17 Reference Attachment 2 for a Decision Tree for when to conduct Level 1 investigations.

	<p>__1.18 Reference Attachment 3 for a Guideline listing types of incidents and the level of investigation required or recommended.</p>
<p>2.0 Notification Requirements</p>	<p>__2.1 A Major Incident (MI) or High Potential Incident (HiPo) shall be communicated to BP group in the designated mode and time frame as outlined in Attachment 8 and 8A. Group notification of incidents and unsafe or unhealthy conditions classified as severity level A-D or E, whether actual or potential shall be made by using the appropriate form in GDP 4.4-0001 Annex 5.</p> <p>__2.2 If there is any doubt as to whether an incident or unsafe condition or unhealthy condition is within the scope of GDP 4.4-0001, it shall be initially reported based on the assumption that it is.</p> <p>__2.3 When an incident or unsafe condition or unhealthy condition occurs with an expected actual or potential severity level A-E, it shall be communicated verbally by the BP entity leader (or delegate) to the line managers up to and including the designated executive manager and the relevant Deployed VP S&OR</p> <p>__2.4 The BP entity leader or member of local management shall promptly advise BP Legal of any incident classified as actual severity A-E (MIA) or any other incident or unsafe or unhealthy condition if litigation or regulatory action is possible.</p> <p>__2.5 For a major security or HIPO security incident that may not be in the public domain, the BP leader shall privately and securely if possible, communicate with the relevant segment or function designated executive line management, regional security advisor or Group Head of Risk, Learning and HSSE, S&OR. The regional security advisor shall inform additional senior leadership on a need-to-know basis or based on who can advise or help. Reference GDP 4.4-0001 Section 5.C for notification requirements. The site Security and Crisis superintendent will determine which incidents are not in the public domain.</p> <p>__2.6 For a major security related MI or HiPo that is in the public domain, the BP leader shall comply with BP group notification requirements as specified in Attachment 8 and 8A.</p> <p>__2.7 Security incidents, except for fraud, shall be recorded in Traction. Fraud shall be reported in line with BP's Fraud and Misconduct Reporting Standard and the local BP entity leader shall notify the local financial controller or the relevant Segment (or Division) / Function Chief Financial Officer (CFO).</p> <p>__2.8 Level A-E marine incident investigations required by GDP 4.4-0001 shall be brought to the attention of BP group marine authority. The site Security and Crisis superintendent will make this notification.</p> <p>__2.9 BP leaders, who have a reason to believe that a fatality is either the result of natural causes or is self-inflicted, shall consult with the BP regional health director for a preliminary cause decision. The process described in GDP 4.4-0001 section 5.D shall be followed.</p> <p>__2.10 The relevant HSSE Superintendents and the Local Traction Site Administrator (LTSA) confirm that information associated with incidents required by the FIN-GDP 4.4-0001-01 HSSE & Operational Data</p>

	Reporting Requirements for BP Group is recorded in Tr@ction.
3.0 Roles and Responsibilities	<p>__3.1 Employees—will immediately report all incidents to the appropriate supervisor, will assist in mitigating the incident as appropriate, will note the incident in the Operator’s Log, will report near misses observed and take corrective actions where possible, and will participate in the investigation process as requested. Environmental incidents are described in Attachment 4. Injuries are to be reported in accordance with Attachment 11.</p> <p>__3.2 Supervisors— will immediately notify the Refinery Coordinator of the incident, will mitigate the incident, will conduct the investigation process initial response, will enter all actual incidents (not including near misses) that occurred on their shift into Tr@ction within 48 hours, will review the incident and proposed corrective actions with their work teams, will implement corrective actions as requested. Injuries are to be reported in accordance with Attachment 11.</p> <p>__3.3 Refinery Coordinators - will determine if incidents require external reporting to Agency(s) and will make notification to the EOC so the HSSE personnel are notified and perform external notifications to Agency(s), as appropriate. The Refinery Shift Coordinator is responsible for the initial investigation of incidents caused by the control system, the actions of the board operators, commercial instructions or for issues that involve more than one operating area. The Refinery Shift Coordinator is also responsible to appoint the appropriate Supervisor to complete an initial investigation for product quality incidents.</p> <p>__3.4 Superintendents—</p> <p>Level 0 Communications</p> <ul style="list-style-type: none"> ○ Approve the initial Incident Report within Tr@ction <p>Level 1 Investigations</p> <ul style="list-style-type: none"> ○ Select an investigation leader; usually the foreman involved with the incident, but may be an engineer or other knowledgeable party. ○ Work with the Investigation Leader to select an investigation team, as appropriate. ○ Review and approve final investigation report and recommendations <p>Level 2 Investigations</p> <ul style="list-style-type: none"> ○ Notify the investigation team when they may access the scene, if the scene is potentially unsafe or unsecured. ○ Make preliminary plans for witness interviews or statements of hourly personnel (if necessary due to witness availability) ○ Selection of an Incident Investigation Leader from the pool of trained incident investigation leads with the Safety Superintendent ○ Work with the Investigation leader and Safety Superintendent to select an investigation team. ○ Clarify and confirm priorities for the Investigation Leader ○ Ensure necessary resources are made available to investigation team, such as conference rooms, administrative resources, and prioritization of workload for investigation team members or others whose time or expertise is needed ○ Review and approve final investigation report and recommendations ○ Obtain progress reports from assigned personnel and ensure

	<p>completion of the tasks to meet the proposed corrective action - this is done through Tr@ction where requests and approval for action item due date extensions are documented.</p> <p>___3.5 Managers— Level 3 Investigations</p> <ul style="list-style-type: none"> ○ Reference Responsibilities for Level 2 investigations for Superintendents ○ Ensure required notifications have been completed within BP ○ Establish Terms of Reference (TOR) for the investigation team with the Team Leader ○ Final approval for Level 3 investigation reports will be by the Toledo BUL (or delegate) <p>___3.6 Investigation Leaders – Level 1 Investigations</p> <ul style="list-style-type: none"> ○ The Investigation Leader is responsible for completing a “fit for purpose” investigation. “Fit for purpose” for Level 1 investigations may utilize the “Five Whys” technique or other investigation technique deemed appropriate. (reference Attachment 5 for how to do “Five Whys”) ○ Completing the investigation includes ensuring the following elements are done -- <ul style="list-style-type: none"> • Final report has been approved by the Area Superintendent • Report entered into Tr@ction • Approved action items entered into Tr@ction. (Reference Attachment 13 for required fields) <p>Level 2 Investigations</p> <ul style="list-style-type: none"> ○ The investigation leader is accountable for conducting the investigation in accordance with the requirements of this procedure. ○ With Superintendent selection of investigation team ○ Team leads shall be given relief from their normal duties to complete the incident investigation ○ Periodically provide verbal updates to the Superintendent with investigation progress ○ Set responsibilities, expectations and boundaries for team members ○ Establish interview teams and set rules for interview process ○ Provide guidance to team members on the investigation process as necessary ○ Lead the investigation team ○ Ensure draft report is submitted to HSSE department for Quality Assurance process ○ Final report and recommendations approved by the Superintendent ○ Final incident investigation information and action items entered into Tr@ction (reference Attachment 12 for required fields) ○ Final report submitted to HSSE for communication to site ○ For LOPC incidents, the Investigation leader will also update the Traction report as necessary following the completion of the investigation, including release amount and material type <p>___3.7 HSSE Department—will assist with investigation lead and team selection for Level 2 investigations, will advise investigation leaders on root cause analysis process selection, will provide a quality assurance review on completed investigations, will distribute a refinery-wide incident report for all Level 3 incidents and for Level 2 incidents as appropriate, will maintain the corrective action tracking system, will</p>
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	<p>issue periodic status reports, will provide incident trending on a regular basis to site management, and will review completed Investigation reports to ensure that Tr@ction is correctly populated upon completion of an investigation.</p> <p>__3.8 PSM Department—will review the make-up of incident investigation teams and the investigation draft report for all Process Safety related Level 3 incidents.</p> <p>__3.9 Local Traction Site Administrator (LTSA) - will review the accuracy of the Traction record submitted and advise approvers and those entering Incidents in Tr@ction on Incident classification</p> <p>__3.10 Traction Review Committee - on a weekly basis, the committee should review the Traction records submitted and provide assurance that Traction fields have been properly populated. In addition, the group will review incident classification and severity for accuracy, will consider if additional follow up is required and possible, and submit those requests to appropriate management. The group will also conduct a periodic review of a portion of the records against this procedure. The members of the committee shall meet the competency requirements detailed in Attachment 10.</p>
<p>4.0 Level 1 Investigation Requirements</p>	<p>__4.1 Preserving the Scene -- Immediate steps should be taken to preserve relevant information and evidence. The Supervisor for the area is responsible for the actions listed in Attachment 14. Assistance may be obtained from the Manager on-call.</p> <hr/> <p>NOTE: The frontline supervisor will enter an initial report into Traction within 48 hours to document the occurrence of an incident and the start of the investigation.</p> <hr/> <p>__4.2 Level 1 incidents will require a “fit-for-purpose” investigation typically on-shift or within the workgroup and led by the involved foreman, engineer or other knowledgeable party. The investigation should identify critical factors. The CLC field in Traction shall be left blank for Level 1 investigations when this method is not used. Reference Attachment 5 for guidance on the use of the 5 Whys.</p> <p>__4.3 The timetable to complete a Level 1 investigation is generally within 30 days.</p> <p>__4.4 Level 1 incident investigation teams will usually consist of 1-2 members.</p> <p>__4.5 Reference Attachment 9 for recommended Report format for Level 1 investigations or equivalent</p> <p>__4.6 The investigation leader will review the draft investigation report and recommendations with the area superintendent for approval and entry into Traction</p> <p>__4.7 The required competencies for a Level 1 investigation leader are as follows:</p> <p>__4.8 Know responsibilities as investigation leader (reference section 3.0)</p>

	<p>__4.9 Be able to identify a system ‘root’ cause</p> <p>__4.10 Be able to develop corrective actions</p> <p>__4.11 Knowledge of required fields that need to be filled out in Traction at the conclusion of an investigation</p> <p>__4.12 The above will be assessed by demonstrating the ability to produce a quality investigation report, as assessed in the QA process</p> <p>__4.13 Level 1 Report Quality Assurance process – a monthly review of a portion of completed Level 1 investigation reports will be conducted by the HSSE department. Reference SAF-058-FM10 for details.</p> <p>__4.14 For incidents or near misses involving demands on Safety Instrumented Functions (SIF) following the SIF Demand Investigation Workflow (Reference: SAF-058-RF06) will serve as the Level 1 investigation process.</p> <p>__4.15 For incidents or near misses involving demands on Pressure Safety Valves (PSV), following the PSV Demand Investigation Workflow (Reference: SAF-058-RF05) will serve as the Level 1 investigation process. Reference SAF-058-FM10 for the recommended report format.</p>
<p>5.0 Level 2 Investigation Requirements</p>	<p>__5.1 Reference Level 1 investigation requirements (4.1) for preserving the scene -- these also apply for Level 2.</p> <p>__5.2 Level 2 incidents will require a formal RCA investigation utilizing a trained RCA facilitator from within Toledo. The investigation team shall utilize Root Cause Analysis (RCA) techniques described in the basic RCA training program, including the use of the Logic Tree method. Behavioral causes should be analyzed using the ABC analysis tool or the HEA tool. Investigation must be initiated within 48 hours of the incident.</p> <p>__5.3 Reference SAF 058-RF03 - “Guidance for Conducting an Investigation” for guidance on interviewing, determining root causes, and developing corrective actions</p> <p>__5.4 The time to complete Level 2 investigations may vary based on factors such as the complexity of the incident, access to witnesses, engineering evaluations and legal considerations. Generally, however, an RCA investigation report should be completed within 60 days of the incident.</p> <p>__5.5 Level 2 investigations must be led by a qualified person who is independent from the incident that occurred. People directly or indirectly involved in an incident shall not be selected as members of a BP RCA investigation team.</p> <p>__5.6 All Level 2 Incident Investigation Leaders are to be trained in BP Root Cause Analysis and the Logic Tree methodology, and should serve on a rotational basis after training to develop and maintain the skillful application of BP’s RCA investigative techniques.</p>

	<p>__5.7 An investigation leader who has been certified or is in the process of certification in the BP RCA Logic Tree methodology by S&OR can utilize this methodology to investigate site incidents.</p> <p>__5.8 A list of people trained to lead Level 2 investigations can be found in SAF 058-RF01.</p> <p>__5.9 The required competencies for a Level 2 investigation leader are as follows:</p> <ul style="list-style-type: none"> ○ Know responsibilities as investigation leader (reference section 3.0) ○ Completed the Basic RCA Training Program ○ Plan and lead investigation team for select incidents ○ Understand and be able to correctly utilize key incident investigation terminology ○ Knowledge of gathering and analyzing evidence techniques (sources, gathering, analysis techniques) ○ Be able to conduct effective incident investigation interviews ○ Be able to use the Logic Tree method and identify root or system cause(s) ○ Be able to use the ABC Human Behavior Analysis tool ○ Be able to develop and write corrective actions, incident investigation reports and lessons learned at the conclusion of an incident investigation ○ Knowledge of required fields that need to be filled out in Traction at the conclusion of an investigation ○ The above will be assessed by demonstrating the ability to produce a quality investigation report, as assessed in the QA process <p>__5.10 Level 2 investigation teams will include a Union Representative member of the HSSE Committee (or an individual approved by the HSSE Committee). Operators are to be included when appropriate to the investigation team make-up. It is anticipated that Level 2 incident investigation teams will generally consist of 2-4 members</p> <p>__5.11 The incident investigation team should immediately take over the responsibility for preserving relevant information and for verifying its accuracy.</p> <p>__5.12 Wherever the location of the incident, the investigation team shall not investigate in circumstances where it may be unsafe to do so.</p> <p>__5.13 Team membership may be drawn from, but is not limited to, the following individuals:</p> <ol style="list-style-type: none"> 1) Supervisor, superintendent or manager knowledgeable in the area where the incident occurred. 2) Employees knowledgeable in the process or application from the area where the incident occurred, including operators when relevant. 3) Technical personnel from the area where the incident occurred. 4) Relevant technical expertise who were not directly or indirectly involved in the incident. Additional technical support to be requested from Refining & Logistics Technology as appropriate <p>__5.14 Incident investigations should take precedence over the team members normal work activities</p>
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	<p>__ 5.15 Team membership should contain an appropriate mix of members from various functional areas (i.e. maintenance, operations, engineering, etc.). For process safety incidents or near misses that involve a contractor, a contractor representative must be included in the investigation team.</p> <p>__ 5.16 During the investigation process, the leader or team is required to conduct a retrospective review for similar site incidents, to determine if any systematic patterns exist. The investigation leader determines the appropriate extent of this review.</p> <p>__ 5.17 Work of the investigation team is confidential. Team members should not release premature conclusions or speculations</p> <p>__ 5.18 The incident investigation team shall conduct the sole BP incident investigation into facts leading to the incident, and shall pursue any reasonable line of inquiry to establish evidence addressing what happened, how it happened and why it happened</p> <p>__ 5.19 Reference Attachment 9 for the required report formats for Level 2 investigations (Logic Tree). The use of the Root Cause tree and Extent of condition for systemic causes is optional.</p> <p>__ 5.20 Level 2 Report Quality Assurance Review -- The Level 2 draft report is submitted to the Incident Investigation and Learning Specialist in the HSSE department for internal Quality Assurance review. This review may utilize a modified version of the checklists used in the HIPO/MIA QA review process.</p>
<p>6.0 Level 3 Investigation Requirements</p>	<p>__ 6.1 Reference Level 2 investigation requirements (section 5.0) -- these also apply to Level 3 investigations with the exceptions and additions listed below.</p> <p>__ 6.2 Level 3 incidents will require a formal RCA investigation, and use the BP RCA (Logic Tree) method subject to the certification of the investigation leader. Behavioral causes should be analyzed using the ABC analysis tool and/or the HEA Tool. Investigation must be initiated within 48 hours of the incident.</p> <p>__ 6.3 For Level 3 HIPO and MIA investigations, the final report should be completed and Lessons learned 1-pager issued within 60 days.</p> <p>__ 6.4 If in the course of the Level 3 investigation it becomes apparent that it will not be completed within the specified timeframe, the investigation leader shall:</p> <ol style="list-style-type: none"> 1) Inform and provide documented reasons to the person who appointed him or her as investigation leader 2) Inform the BP entity leader 3) Inform the Relevant Deployed VP S&OR <p>__ 6.5 For MIA investigations, the incident scene shall be released for resumption of work only at the direction of the incident investigation leader and any involved regulatory or law enforcement agencies.</p> <p>__ 6.6 For MIA/HIPO investigations, the MRCS will be dedicated to the investigation</p>

- ___ 6.7 In the case of a fatality investigation, the relevant Deployed Head of S&OR (or delegate) shall appoint the investigation leader.
- ___ 6.8 The relevant Deployed Head of S&OR (or delegate) shall have the authority to decide that an incident (other than a fatality) is to be investigated independent of the BP entity. In this case, he or she shall appoint the investigation leader.
- ___ 6.9 When S&OR leads an investigation, S&OR selects the team leader and appoints the other team members. Reference RM-P 4.4-0002 for additional S&OR led investigations requirements.
- ___ 6.10 When the Segment (site) leads an investigation, the site selects the team leader and appoints the other team members. Reference Figures 4-1 (investigation process flow) and 4-2 (decision rights) in RM-P 4.4-0002.
- ___ 6.11 In consultation with the Deployed Head of S&OR the Group Head of Risk, Learning and HSSE, S&OR (or delegate) shall have the authority to deploy an investigation leader from the S&OR Central Investigation Team.
- ___ 6.12 For MIA/HIPO investigations not conducted by S&OR, the investigation leader shall request the relevant Deployed VP S&OR to agree team composition.
- ___ 6.13 If the relevant Deployed VP S&OR does not agree team composition, the decision shall be escalated in parallel up the S&OR and segment reporting lines as necessary for S&OR to reach a decision.
- ___ 6.14 Level 3 investigation teams will include a Union Representative member of the HSSE Committee (or an individual approved by the HSSE Committee). Operators are to be included when appropriate to the investigation team make-up. It is anticipated that Level 3 incident investigation teams will consist of 4-6 members as a minimum.
- ___ 6.15 The incident investigation team shall consult with BP Legal at the start of all Level 3 investigations and in any other incident investigation where the possibility of regulatory action or litigation exists.
- ___ 6.16 An incident investigation team assigned to investigate a level A-F security incident shall include a security professional nominated or approved by the VP Security and Crisis Management, S&OR (or delegate). The site Security and Crisis superintendent will make the necessary contacts to obtain the nomination or approval.
- ___ 6.17 Reference Attachment 9 for the required report format for Level 3 investigations.
- ___ 6.18 For MIA/HIPO investigations that are not conducted by the S&OR Central Investigation team, the investigation leader shall obtain advice from BP Legal and agreement of the relevant Deployed Head of S&OR (or delegate) that the investigation report and recommendations are sufficient prior to issuing the report.

	<p>__6.19 For MIA/HIPO investigations, if the Deployed Head of S&OR (or delegate) does not agree that an investigation report or recommendations are sufficient, the Deployed head of S&OR shall have the authority to require further investigation and change the investigation team or bring in additional resources.</p> <p>__6.20 For MIA/HiPo investigations, if there is a disagreement regarding the contents of the investigation report or recommendations, this shall be raised with the Group Head of Risk, Learning and HSSE, S&OR.</p> <p>__6.21 For MIA/HIPO investigations, the BP entity leader shall request the agreement of the BP entity action plan from the relevant Deployed Head of S&OR. If the relevant Deployed Head of S&OR does not agree the action plan, the decision shall be escalated in parallel up the S&OR and segment reporting line as necessary for S&OR to reach a decision.</p> <p>__6.22 Level 3 Report Quality Assurance Review – A HIPO/MIA investigation will require the involvement of S&OR. The Refining HIPO/MIA Incident Report Review Process is outlined in Figure 6-1 of the <i>RM-P 4.4-0002 MIA and HiPo Investigation Process</i>. The QA/QC checklists can be accessed at the following link or from the Incident Investigation and Learning Specialist: https://wss2.bp.com/RM12/RM_SOR/HSSEInv/InvLrn/Investigators%20Tool%20Kit/Forms/Investigation%20Phase.aspx</p>
<p>7.0 Terms of Reference (TOR) Requirements</p>	<p>__7.1 The following types of investigations shall have a TOR:</p> <ol style="list-style-type: none"> 1) MIA/HIPO 2) When Deployed S&OR have appointed the investigation leader 3) When conducted by the S&OR Central Investigation team <p>__7.2 The person appointing the investigation leader shall be accountable for defining the TOR in consultation with the investigation leader.</p> <p>__7.3 For a MIA or HiPo investigation where the investigation leader is not appointed by S&OR, the entity leader’s TOR shall be subject to agreement by the relevant Deployed VP S&OR</p> <p>__7.4 If the relevant Deployed VP S&OR does not agree TOR, the decision shall be escalated in parallel up the S&OR and segment reporting line, as necessary, for S&OR to reach a decision.</p> <p>__7.5 The TOR for an investigation shall include a timeline agreed with the investigation leader for when it is anticipated that the investigation will be completed</p>
<p>8.0 General Investigation Requirements</p>	<p>__8.1 The site will have at least one person certified by S&OR as a Master Root Cause Specialist (MRCS) to provide coaching to investigation leaders, as needed.</p> <p>__8.2 All process safety near misses (not including unsafe conditions/acts) require the team member(s) names, investigation start date, a description of the incident, why the incident occurred, and what will be done to prevent re-occurrence. For Level 0 communications, the person submitting the Tr@ction report is considered the team member</p>

	<p>__8.3 For process safety incidents, verify if the process hazard analysis (PHA) identified the potential for the incident scenario and identified appropriate control measures. The team should provide feedback on their conclusions to the PSM department in HSSE.</p> <p>__8.4 Any missed compliance task deadlines for tracked tasks will be reported in Tr@ction and reviewed by the SME to determine the level of investigation required (reference TBU-OMS 7.1).</p> <p>__8.5 For incidents or near misses involving demands on Safety Instrumented Systems (SIS), a SIF (Safety Instrumented Functions) Demand Event Record (Reference SAF-058-FM09) should be completed and attached to the Tr@ction report. The completion of this is the responsibility of the site SIS Technical Authority or designee (such as the SIS Lifecycle Engineer).</p> <p>__8.6 Maintaining legal and regulatory compliance for matters associated with an incident is the responsibility of the site.</p>
<p>9.0 Report Recommendations and Retention</p>	<p>__9.1 Investigation Recommendation reviews</p> <ul style="list-style-type: none"> • Where there is a possibility of litigation from personal injury, community impact or regulatory fines, investigation reports should be reviewed by Legal prior to drafting the final report. Fatality investigations conducted under Attorney/Client privilege can use names if necessary for clarification. • The Investigation leader will review the draft investigation report and recommendations with the responsible manager or superintendent to validate technical aspects and gain agreement on the following: <ol style="list-style-type: none"> a. The merits of the recommended action b. Completing the action, and c. Completion deadline. When setting completion dates the team should consider unit workloads, TAR scheduling, engineering availability, etc. d. Check that implementation would be consistent with applicable legal and regulatory requirements. • The Investigation leader and Management shall determine which of the proposed corrective actions shall be accepted, which shall be modified and which shall be rejected. For those actions rejected or modified, those shall be documented with reasons, and retained with the investigation report. When proposed corrective actions are rejected, this will be communicated to the investigation team. Any subsequent team recommendations must be resolved. If an agreement cannot be reached, the appropriate manager must be involved in the resolution. • For those actions accepted or modified, the Superintendent and management shall establish a targeted completion date and assign personnel to complete those actions. • The investigation leader is then responsible to contact person(s) assigned action items to review and agree to the action item before assigning the action item in Traction. • Recommendations in an investigation report shall be actionable by the site. • Incidents involving contractors should also be reviewed with their management. • Reviews are to be completed before the final report is distributed.

	<ul style="list-style-type: none"> • The members of the investigation team will be included in all final reports and in Tr@ction. The investigation Leader and Team Members will be listed by name and functional title. • If an investigation team identifies potential learning where action may be appropriate at group, segment or divisional level, the investigation leader shall first discuss the potential learning with the relevant S&OR Entity Director, and then raise the issue with the relevant Segment or Division Learning Lead. <p>9.2 Report Retention requirements</p> <ul style="list-style-type: none"> • All final reports and corrective actions will be entered into Tr@ction. If the report is not to be attached in Tr@ction, the exceptions process specified in section 7.0 of GDP 4.4-0002 will be followed. • Investigation documents shall be managed in accordance with the applicable requirements of the BP Global Information Handling Standard. Documents and materials gathered or produced by the investigation team shall be transferred to the site at the end of the investigation and retained in accordance with the site's procedures. • The incident investigation report shall be retained for 10 years, or any longer period of time that is required by law or by the BP Global Information Handling Standard. • All incident investigation reports that meet the OSHA PSM definition of 1910.111 (m) (2) must be kept for 5 years per federal regulations. • A final report should be issued by the investigation leader. All drafts of the final report should be destroyed.
<p>10.0 Action Item Management</p>	<p>10.1 Action Item Completion Review Process</p> <ul style="list-style-type: none"> • Action item closure will be documented by the responsible party in Tr@ction and submitted for approval. Documentation should include support documentation or references (i.e. MOC number, operating procedure number, etc.). • The responsible person closes the action item(s) only after the action is fully implemented. Closure of action items based on intent is prohibited (i.e., the work must be complete to close). For example: "Install a bypass around control valve FV-101." This recommendation is satisfied when the bypass has been installed and is ready for use. This action is not satisfied when the decision has been made to install the bypass, when the bypass has been procured, or when the work order has been written to install the bypass. • The approver of the action has the accountability for ensuring proper action item closure by doing the following -- <ul style="list-style-type: none"> • Verify that the closure comments in Tr@ction have adequately demonstrated that the action has been completed before approving the closure of the action item • Document approval or rejection of the action closure in Tr@ction • Ensure that any additional follow-up actions that are required to track the resolution of the action are put into Tr@ction • Verification of proper completion for a portion of investigation action items will be conducted periodically - any closure deficiencies will be submitted to the area superintendent. <p>10.2 Extending Action Item Due Dates</p>

	<ul style="list-style-type: none"> ▪ For Action items from Level 1 investigations, the Area Superintendent will be assigned as the Tr@ction approver. He/she (or delegate) will approve or reject all action item extensions and document this in Tr@ction. ▪ For Action items from Level 2 investigations, the Area Superintendent will be assigned as the Tr@ction approver. He/she (or delegate) will approve or reject action item extensions and document this in Tr@ction. For process safety related incidents only, when more than one extension is requested, a written variance must be submitted to the RPSC for approval of the extension. ▪ For Action items from Level 3 (HIPO/MIA) investigations, the appropriate Manager will be assigned as the Tr@ction approver. If an extension is requested to complete an action item, the request must be submitted to the RPSC for review. Approval of the extension shall be obtained from the appropriate level of S&OR leadership through the Entity Director. The Manager (or delegate) will document the approval or rejection of the extension in Tr@ction
<p>11.0 Communication and Follow-up</p>	<p>__ 11.1 The investigation leader shall consult with the following when determining report distribution lists:</p> <ol style="list-style-type: none"> 1) Security professional team member when determining the distribution list for a report into a security related incident 2) BP legal representative when determining the distribution list for either of the following – a) Investigation reports into MI incidents or b) Investigation reports into any incident where the possibility of regulatory action or litigation is identified. <p>__ 11.2 Communication – Corporate wide</p> <ul style="list-style-type: none"> ▪ The one page Lessons Learned Report for MIA's and HIPO's is to be distributed to the designated R&M distribution list via the HSSE Department. Reference Attachment 9 for required lessons summary template. Reference Attachment 8 for the required distribution list. <p>__ 11.3 Communication – Site Wide</p> <ul style="list-style-type: none"> ▪ The HSSE Department will circulate the one page Lessons Learned for all Level 2 or 3 incidents within 10 days of the report being approved. Supervisors will review the incident summary with their work teams to communicate the lessons learned. ▪ Level 1 incidents will be communicated as applicable by the area shift supervisors. At the request of the area superintendent, the investigation reports can also be circulated site wide by the HSSE Department. <p>__ 11.4 Follow-up</p> <ul style="list-style-type: none"> • <u>HSSE Committee Review</u> The Refinery HSSE Committee will review all Level 2 & 3 Lessons Learned documents following completion of the investigation. The HSSEC will provide feedback on whether the investigation was thorough and if the proposals for corrective action are appropriate to prevent recurrence. • <u>Refinery Process Safety Committee Review</u> The RPSC will review all Process Safety related Level 2 & 3 Lessons Learned documents following completion of the investigation.

	<ul style="list-style-type: none"> • PSM Superintendent Periodically (monthly as a minimum) will provide a status report of overdue incident action items for management review.
<p>12.0 Communication and Follow-up</p>	<p>___ 12.1 Traction entries will be analyzed on a quarterly basis per the following process:</p> <ul style="list-style-type: none"> ▪ LTSA will run initial report on near miss categories, number of injuries/illnesses, nature and location of injury/illness, body part affected, material releases, environmental events, golden rule violations, immediate and system causes. ▪ Incident Investigation and Learning Specialist, seeking advice from others where appropriate, reviews initial report and determines trends or areas of concern that require additional analysis. ▪ Incident Investigation and Learning Specialist completes additional analysis as required, along with process safety near miss trending. Process safety near miss trending includes the general nature of the failure, equipment type (for integrity related near misses), and operation in progress (for human error near misses). ▪ Final analysis is presented to the site HSSE Committee for review and to develop recommendations to improve performance. Others are consulted to provide input on recommendations as appropriate. ▪ Recommendations are recorded by the Incident Investigation and Learning Specialist and actions are entered into Tr@ction with due dates and responsible parties. <p>___ 12.2 A summary of the analysis is presented to the Extended Leadership team periodically as appropriate.</p>

Revision history

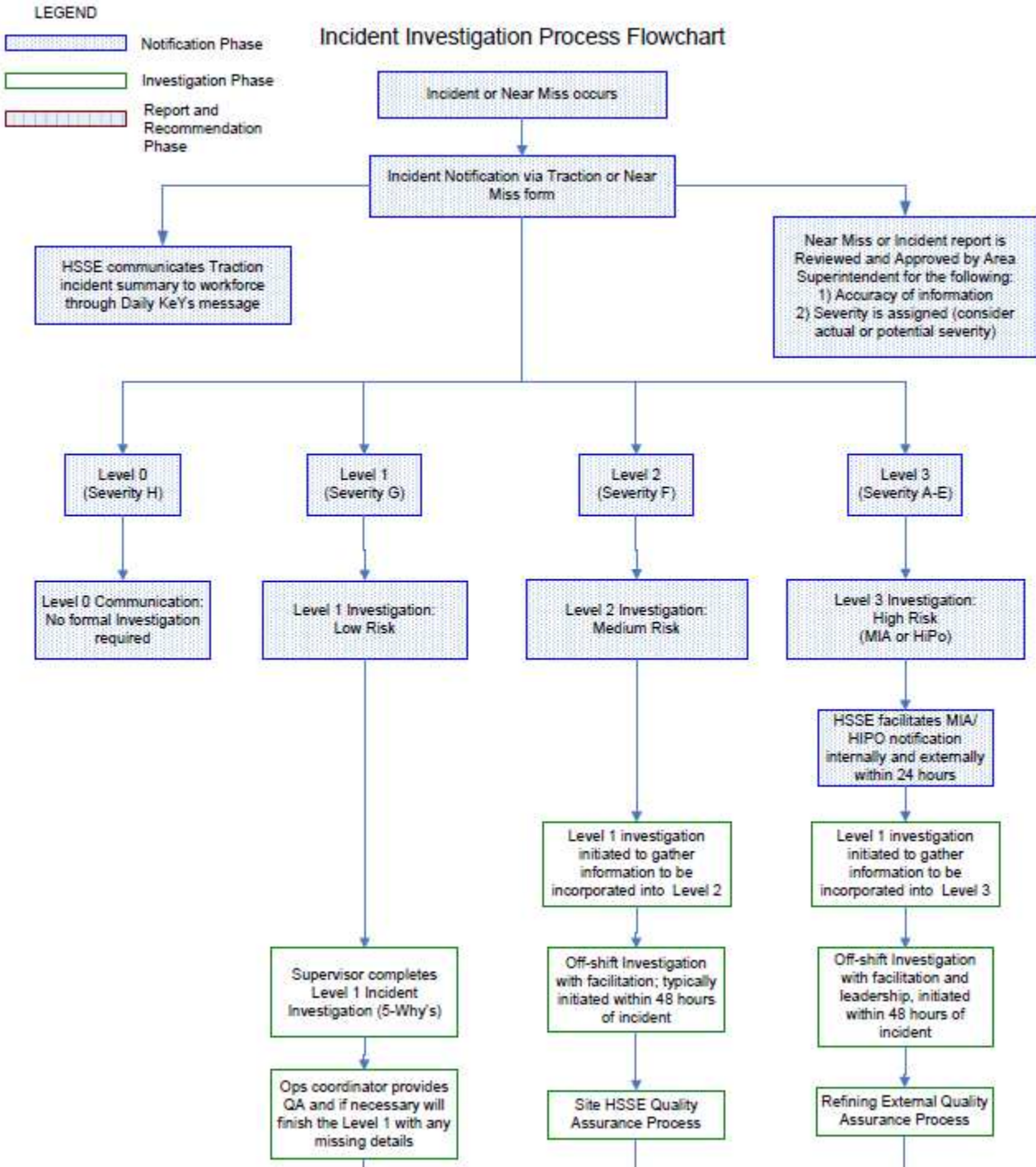
The following information documents at least the last 3 changes to this document, with all the changes listed for the last 6 months.

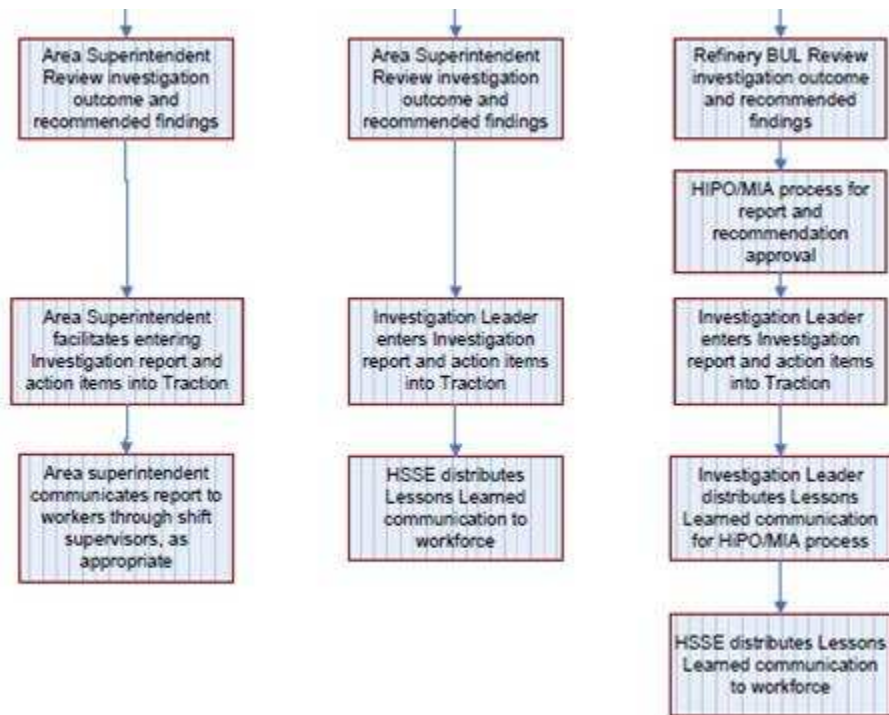
Date	Revised By	Changes
6/29/15	E. Myers	Minor change completing transition to logic tree method of investigation and eliminating references to CLC.
9/15/14	Joan Anderson	(MOC# M20143141-001) - Updated SAF058 with minor clarifications from RM-P 4.4-0001 and 0002 (R&M investigation and reporting requirements). Also included PSV demand and SIF demand investigation process.
5/22/14	Joan Anderson	(MOC# M20141705-001) - Updated SAF-058 to allow investigation leaders who are in the process of being certified in Logic tree to utilize this methodology for site investigations. Added a requirement for Level 2 investigations to include a retrospective review for similar site incidents, to determine if any systemic patterns exist.

05/29/13	Joan Anderson	(MOC# M20131970-001) – Updated SAF 058 with changes from updated GDP 4.4-0002 Incident Investigation (issued July 2012). Formatting and document organizational changes including splitting up Requirements section into separate sections for readability. Added action item extension approval process. Updated target date for Level 2 to 60 days. Updated Attachment 4 to clarify investigation requirements for Environmental Reportable incidents. Added reference form 10 with Level 1 investigation QA process.
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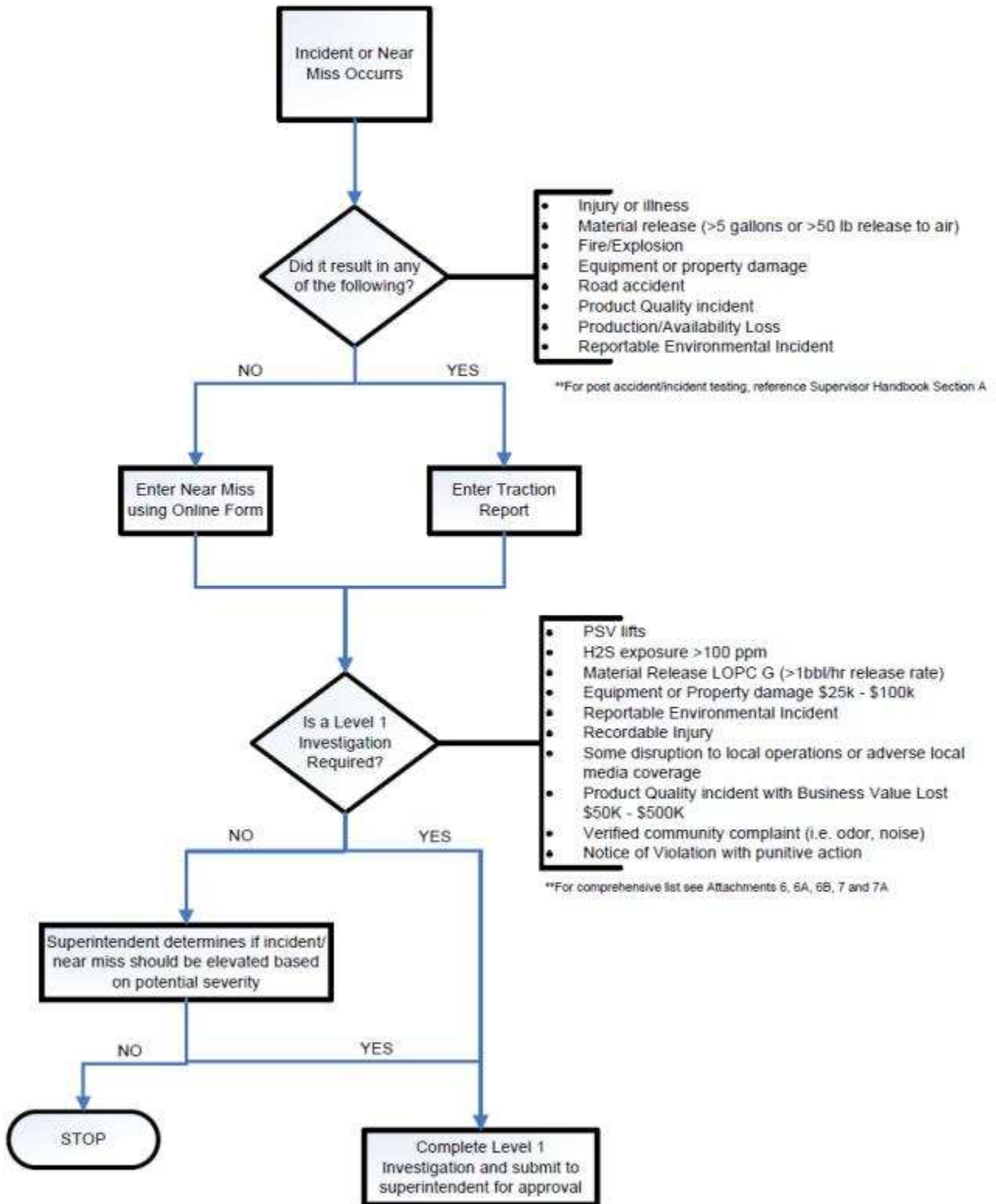
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Attachment 1: Incident Investigation Process Flowchart





Attachment 2: Decision Tree for when to conduct a Level 1 investigation



Attachment 3: Guideline for examples of types of incidents and the level of investigation required or recommended

Level 0 Communication	Level 1 Investigation	Level 2 Investigation	Level 3 Investigation
<ul style="list-style-type: none"> ○ Housekeeping issues ○ Minor traffic violations ○ Minor near misses and unsafe conditions that are easily corrected ○ Product quality incident with <\$50k Business Value Lost 	<ul style="list-style-type: none"> ○ First Aids ○ Recordable Injuries ○ Equipment damage (\$25k - \$100k) ○ Environmental Agency Reportable Incidents ○ Material releases (LOPC) >1 bbl/hr ○ PSV Lifts ○ Some Unit upsets ○ SOL exceedences ○ Some near misses ○ Misalignments ○ Operator error or unsafe acts ○ Product quality incident with \$50k-\$500k Business Value Lost 	<ul style="list-style-type: none"> ○ DAFW ○ Reoccurring theme for injury or environmental event ○ Equipment damage (\$100k plus) ○ Material releases (LOPC) >10 bbl/hr ○ Significant near misses ○ Significant unit upsets ○ Severe Operator Error ○ Product quality incident with \$500k- \$5M Business Value Lost 	<p>Major Incident (MIA) or High Potential (HIPO) for one or more of the following:</p> <ul style="list-style-type: none"> ○ Fatality(s) or multiple hospitalizations ○ Significant environmental damage ○ Material releases (LOPC) >100 bbl/hr

** Any incident or near miss can be elevated to the next level of investigation by a Superintendent or Manager

***Items in Blue text are recommended but not required

Attachment 4: Environmental Reportable Incidents

TOLEDO REFINERY - INCIDENT INVESTIGATION Environmental Reportable Incidents

"Environmental reportable incidents" cover any incidents that are reportable to governmental agencies or that are required to be reported within BP. The most common reportable items are as follows (see Environmental Handbook for complete list):

Level 1:

- a verified community complaint (odors, noise, etc.)
- any reportable environmental incident that is a permit violation
- an Environmental Notice of Violation with punitive action**
- a material release LOPC G (release rate 1-10 bbls/hr) or a non-agency reportable LOPC F
- Title V deviation categories once every 3 years

Reporting Requirements: Traction (including actions taken) and External Contact Form, Incident Investigation

Level 2:

- a material release LOPC F (release rate 10-100 bbl/hr) that is agency reportable
- any Level 1 incident at the discretion of the appropriate superintendent or manager

Reporting Requirements: Traction (including actions taken), External Contact Form, Incident Investigation

Level 3:

- a major (potential or actual) uncontrolled release of light hydrocarbon (>10 tons) or H₂S (>0.5 ton)
- an incident response involving significant interaction (i.e. joint incident command) with government agencies
- a material release LOPC E-A (release rate >100 bbl/hr)
- any condition determined by the superintendent or manager as warranting a Level 3 Incident Investigation.

Reporting Requirements: Traction, External Contact Form, Incident Investigation, HiPo/MIA (if appropriate)

** Safety or Health related Notice of Violations will be assessed by the Safety or Health Superintendent, and elevated to a Level 1 or 2 investigation, if appropriate.

Attachment 5: How to do 5 Why's

5 WHYS EXAMPLE	
5 Whys is a question-asking method used to determine the cause/effect relationships underlying a particular problem. The objective of applying the 5 Whys method is to determine a root cause of a defect or problem.	
1. State the problem: _____	(e.g. My car won't start)
2. Why? _____	(e.g. The battery is dead)
3. Why? _____	(e.g. The alternator is not working)
4. Why? _____	(e.g. The alternator belt has broken)
5. Why? _____	(e.g. The alternator belt is well beyond its useful service life)
6. Why? _____	(e.g. I have not been maintaining my car according to the service schedule)
7. Corrective Action(s): _____	(e.g. Replace belt, follow pm schedule)

Attachment 6: Severity Matrix – HSE impact levels

SEVERITY LEVEL	HEALTH AND SAFETY	ENVIRONMENT	INVESTIGATION REQUIRED
<p>A-D MIA</p>	<p>Three or more fatalities. Identified onset of life-threatening health effects to three or more individuals. 30 or more injuries or health effects, either permanent or requiring hospital treatment for more than 24 hours.</p>	<p>Event with widespread or extensive damage to any environment, including sensitive and non-sensitive environments, and remains in "unsatisfactory" state for a period of > five years.</p> <p>Event with widespread or extensive damage to a non-sensitive environment and can be restored to an equivalent capability in a period of around one year.</p> <p>Event with localized, widespread or extensive damage to a sensitive environment and can be restored to an equivalent capability in a period of around one year.</p> <p>Event with widespread or extensive damage to a non-sensitive environment and can only be restored to a satisfactory / agreed state in a period of more than one year and up to five years.</p> <p>Event with widespread or extensive damage to a sensitive environment and can only be restored to a satisfactory / agreed state in a period of more than one year and up to five years.</p> <p>Event with widespread damage to a sensitive or non-sensitive environment and can be restored to an equivalent capability in a period of months.</p> <p>Event with extensive damage to a sensitive environment and can be restored to an equivalent capability in a period of months.</p>	<p>Level A-E (MI) incidents shall be investigated using the BP RCA investigation methodology</p> <p>Level 3</p>
<p>E MIA</p>	<p>One to two fatalities, acute or chronic, actual or alleged. 10 or more injuries or health effects, either permanent or requiring hospital treatment for more than 24 hours.</p>	<p>Event with localized damage to a non-sensitive environment and can be restored to an equivalent capability in a period of one year.</p> <p>Event with extensive damage to a non-sensitive environment and can be restored to an equivalent capability in a period of months.</p> <p>Event with localized damage to a sensitive environment and can be restored to an equivalent capability in a period of months.</p> <p>Event with extensive damage to a sensitive environment and can be restored to an equivalent capability in a period of days or weeks.</p>	<p>Level A-E (MI) incidents shall be investigated using the BP RCA investigation methodology</p> <p>Level 3</p>
<p>F</p>	<p>Permanent partial disabilities. Several non-permanent injuries or health impacts. Days Away From Work Case (DAFWC)</p>	<p>Event with localized damage to a non-sensitive environment and can be restored to an equivalent capability in a period of months.</p> <p>Event with immediate area damage to a sensitive environment and can be</p>	<p>Level F incidents shall be investigated using BP's RCA Investigation methodology.</p> <p>Level 2</p>

		<p>restored to an equivalent capability in a period of months.</p> <p>Event with extensive damage to a non-sensitive environment and can be restored to an equivalent capability in a period of days or weeks.</p> <p>Event with localized damage to a sensitive environment and can be restored to an equivalent capability in a period of days or weeks.</p>	
G	<p>Single or multiple recordable injury or health effects from a common source / event.</p> <p>Reported H2S exposures >100 ppm (incidents that have been reported in Traction & are not due to monitor malfunctions).</p> <p>PSV Lifts to the flare, sewer, or ground (except thermal relief events)</p>	<p>Event with immediate area damage to a non-sensitive environment and can be restored to an equivalent capability in a period of months.</p> <p>Event with localized damage to a non-sensitive environment and can be restored to an equivalent capability in a period of days or weeks.</p> <p>Event with immediate area damage to a sensitive environment and can be restored to an equivalent capability in a period of days or weeks.</p> <p>Environmental reportable incident that is a permit violation – see attachment 4</p>	<p>G level incidents will be investigated using the appropriate entity defined methodology.</p> <p>Level 1</p> <p>Note: Hearing loss recordable illness or other recordable illness not resulting from a single event will not require a Level 1 investigation</p>
H	<p>First aid.</p> <p>Single or multiple over-exposures causing noticeable irritation but no actual health effects.</p>	<p>Event with immediate area damage to a non-sensitive environment and can be restored to an equivalent capability in a period of days or weeks.</p>	<p>Level 0</p>

Attachment 6a: Severity Matrix – Business Impact Levels

Note: When categorising financial impact severity, to meet the requirements of GDP 4.4-0001, only equipment / property damage (replacement cost) as a result of a HSSE incident or unsafe condition or unhealthy condition is considered.

SEVERITY LEVEL	EQUIPMENT/PROPERTY DAMAGE	NON-FINANCIAL IMPACT PRIVILEGE TO OPERATE	INVESTIGATION REQUIRED
A-D	>\$10m Equipment or Property Damage	<p>Public or investor outrage in markets where we have presence or aspirations.</p> <p>Prolonged adverse national or international media attention.</p> <p>Loss of license to operate an asset or threat of global loss of license to operate.</p> <p>Intervention from the government.</p> <p>Severe enforcement action against a material asset in a non-major market, or against other assets in a major market.</p> <p>Widespread adverse social impact.</p> <p>Damage to relationships with key stakeholders of benefit to the Segment or BP group.</p> <p>Localized or limited interest-group outrage in a major market.</p>	<p>Level A-E (MI) incidents shall be investigated using the BP RCA investigation methodology</p> <p>Level 3</p>
E	\$1m – \$10m Equipment or Property Damage	<p>Other adverse enforcement action by regulators.</p> <p>Limited interest-group outrage in a non-major market.</p> <p>Short-term adverse national or international media coverage.</p> <p>Damage to relationships with key stakeholders of benefit to the Strategic Performance Unit (SPU).</p>	<p>Level A-E (MI) incidents shall be investigated using the BP RCA investigation methodology</p> <p>Level 3</p>
F	\$100k – <\$1m Equipment or Property Damage	<p>Regulatory compliance issue which does not lead to regulatory or other higher severity level consequence.</p> <p>Prolonged adverse local media coverage.</p> <p>Local adverse social impact.</p> <p>Damage to relationships with key stakeholders of benefit to the Performance Unit (PU).</p>	<p>Level F incidents shall be investigated using BP's RCA Investigation methodology.</p> <p>Level 2</p>
G	\$25k – <\$100k Equipment or Property Damage	<p>Short-term adverse local media coverage.</p> <p>Some disruption to local operations (e.g., loss of single-road access for less than 24 hours).</p>	<p>G level incidents will be investigated using the appropriate entity defined methodology.</p> <p>Level 1</p>
H	<\$25k Equipment or Property Damage	<p>Isolated and short-term complaints from neighbors (e.g., complaints about specific noise episode).</p>	<p>Level 0</p>

Attachment 6b: Severity Matrix - Product Quality Incident Impact Levels

SEVERITY LEVEL	BUSINESS VALUE LOST	SUPPLY	PUBLIC	INVESTIGATION REQUIRED
A-D	>\$100M	Major national outage or loss of supply	Public outrage or brand damage in major markets where we have presence or aspiration. Global or regional media coverage	Level A-E (MI) incidents shall be investigated using the BP RCA investigation methodology Level 3
E	\$5M-\$100M	Major regional outage or loss of supply	Localized of limited "interest group" outage in a major market. Public or investor outrage in non-major market.	Level A-E (MI) incidents shall be investigated using the BP RCA investigation methodology Level 3
F	\$500K-\$5M	Prolonged local supply disruption	Prolonged local media attention	Level F incidents shall be investigated using BP's RCA Investigation methodology. Level 2
G	\$50K-\$500K	Minor supply issue. Some disruption in supply but less than 24 hours	Short term local media coverage	G level incidents will be investigated using the appropriate entity defined methodology. Level 1
H	<\$50K	Little to no supply issues	No media involvement or impact on brand or corporate image	Level 0

Attachment 7: Severity Matrix – LOSS OF PRIMARY CONTAINMENT Flammable Gases, Liquids and Others (acute release)

Note: The LOPC classification is based on acute flow. An acute flow is the maximum quantity of material released in any one hour period. (This is only relevant when the material is released over a time period greater than one hour.) Reference GDP 4.4-0001 Annex 4 for additional information and definitions.

Type of Substance Level Investigation	Flammable Gases and Vapours		Flammable Liquids		Other Hazardous Categories including combustible or corrosive gases/ fluids/vapours or solids
	Onshore confined releases Offshore releases – manned facilities	Onshore, unconfined releases Offshore releases – unmanned facilities	Offshore – loss of primary containment	Onshore – loss of primary containment	
					Onshore/offshore – loss of primary containment. Oil spills related to marine activity.
Level A-D Level 3	> 5000 kg	> 50000 kg	> 10000 kg	> 100,000 kg	>1000 bbl (fluids) >200,000 kg (gas/vapours/solids)
Level E Level 3	500 < 5000 kg	5000 < 50000 kg	1000 < 10000 kg	10000 < 100,000 kg	100 <1000 bbl (fluids) 20,000 <200,000 kg (gas/vapours/solids)
Level F Level 1-2 (Reference attachment 4)	50 < 500 kg	500 < 5000 kg	100<1000 kg	1000 < 10000 kg	10 <100 bbl (fluids) 2000 <20,000 kg (gas/vapours/solids)
Level G Level 1	5 < 50 kg	50 < 500 kg	10 < 100 kg	100 < 1000 kg	1 < 10 bbl (fluids) 200 < 2000 kg (gas/vapours/solids)
Level H** Level 0	< 5 kg	< 50 kg	< 10 kg	< 100 kg	< 1 bbl (fluids) < 200 kg (gas/vapours/solids)

**Spills or releases <5 gallons or releases <50 lbs to air in a 24 hour period are classified as near misses instead of LOPC incidents.

Attachment 7A: Severity Matrix – LOSS OF PRIMARY CONTAINMENT of Toxic Substances (acute release) - Potential severity classification (potential human inhalation hazard)

Substance Class Investigation level	Lower Toxicity Substance (Class D)	Medium Toxicity Substance (Class C)	Higher Toxicity Substance (Class B)	Acutely Toxic Substance (Class A)
	All gas, vapour, mist or aerosol LOPC, regardless of location			
Level A-D Level 3	> 4000 kg	> 2000 kg	> 1000 kg	> 50 kg
Level E Level 3	2000 < 4000 kg	1000 < 2000 kg	250 < 1000 kg	15 < 50 kg
Level F Level 1-2 (Reference attachment 4)	200 < 2000 kg	100 < 1000 kg	25 < 250 kg	5.0 kg < 15 kg
Level G Level 1	50 < 200 kg	25 < 100 kg	5 < 25 kg	0.5 < 5.0 kg
Level H Level 0	< 50 kg	< 25 kg	< 5 kg	< 0.5 kg

Attachment 8: Notification Chart - Actual Severity

Actual Severity	Verbal communication to S&OR and line executive management	BP Group Notification
Levels A-D and E Major Incident (MI)	<p>A. Verbal communication shall be made within eight hours to:</p> <ol style="list-style-type: none"> 1. Designated line executive management. 2. Relevant Deployed VP S&OR. 	<p>B. E-mail incident notification (refer to GDP 4.4-0001, Annex 5.1) shall be made within 24 hours to individuals on the relevant segment major incident notification distribution lists:</p> <ol style="list-style-type: none"> 1. R&M - "G R&M Incident Notification". <i>This includes a major security incident that is in the public domain.</i> <i>Notification of a major security incident not in public domain is restricted as specified in GDP 4.4-0001 Section 5.C.</i> <i>The notification may be issued from Tr@ction.</i>
Levels F-H	As applicable within segment or local requirements.	

Attachment 8A: Notification Chart - Where Potential Severity is Greater than Actual Incident

Potential Severity	Verbal communication to S&OR and line executive management	BP Group Notification
Levels A-D, and E High Potential Incident (HiPo)	<p>C. Verbal communication shall be made within 24 hours to:</p> <ol style="list-style-type: none"> 1. Designated line executive management. 2. Relevant Deployed VP S&OR 	<p>D. E-mail incident notification (refer GDP 4.4-0001, Annex 5.1) shall be made within 24 hours to individuals on the relevant segment major incident notification distribution lists:</p> <ol style="list-style-type: none"> 1. R&M - "G R&M Incident Notification". <i>This includes a major security incident that is in the public domain.</i> <i>Notification of a major security incident not in public domain is restricted as specified in GDP 4.4-0001 Section 5.C.</i> <i>The notification may be issued from Tr@ction.</i>
Level F-H	As applicable within Segment or local requirements.	

Attachment 9: FORMATS FOR INVESTIGATION REPORTS


Use BP's Incident Investigation Report and 1-Pager formats for Level 2 and 3 reports (reference Annex 3 in GDP 4.4-0002)

Use Toledo Refinery Level One Investigation Pro Forma format, or equivalent, for Level 1 reports

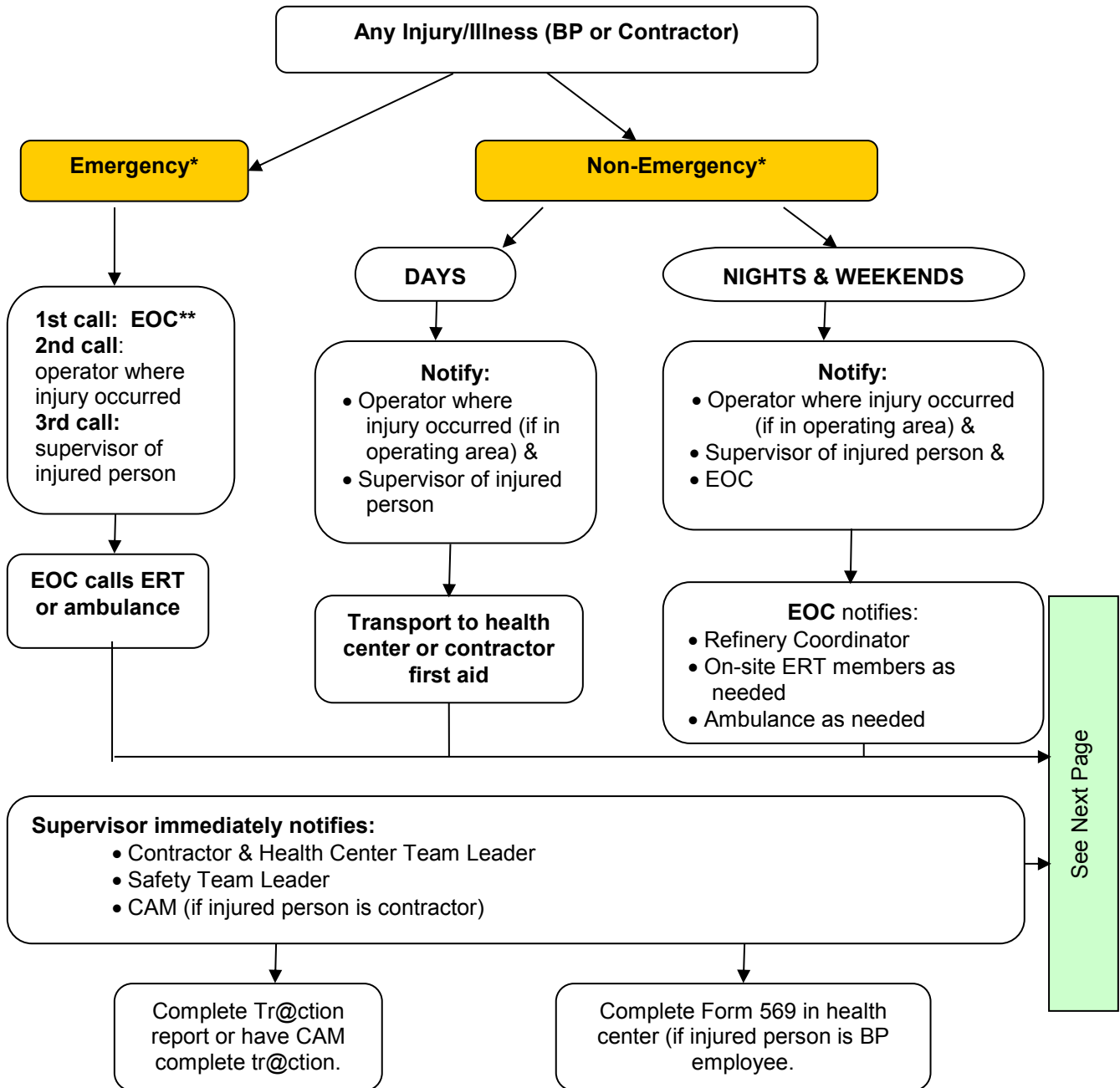
Both can be found at the following link on the Toledo Refinery Investigations SharePoint Site --

[BP-Husky Refining Investigations](#)

Attachment 10: Training and Competency

<p>Training and Competency</p>	
<p>Part A: Element 1, requirement 5, “A competent individual shall review the accuracy of the record submitted.”</p>	
<p>The following is required to achieve this competency:</p> <ul style="list-style-type: none"> · Awareness of how the data entered into Tr@ction is used for Group reporting purposes and of the relevant FC & A definitions. Such that should there be any doubt as to classification, the reviewer shall seek advice as defined in Part B below. · Position of proximity and sufficient authority to verify the basic facts of the Incident (time, date, place, injuries, immediate action, etc.) <p>This applies to Tr@ction approvers, Local Tr@ction Service Administrators and HSSE team members.</p>	
<p>Part B: Element 1, requirement 5: “Competent individuals as defined in Appendix 5 shall be available to approvers and those entering Incidents in Tr@ction to advise on Incident classification.”</p>	
<p>The following is required to achieve this competency:</p> <ul style="list-style-type: none"> · For reporting of injuries and illnesses: training in OSHA injury and illness classification. · For Incidents related to a Group standard: specific familiarity and comprehension of the Group standards and a clear understanding of whether a particular Incident is related to a standard. · For Severity classification: familiarity with the process to assess Actual and Potential event Severity through the material provided. <p>This is likely to apply to local, BU, SPU and segment HSSE team members. The HSSE and Operations Function can also be contacted for difficult cases.</p>	

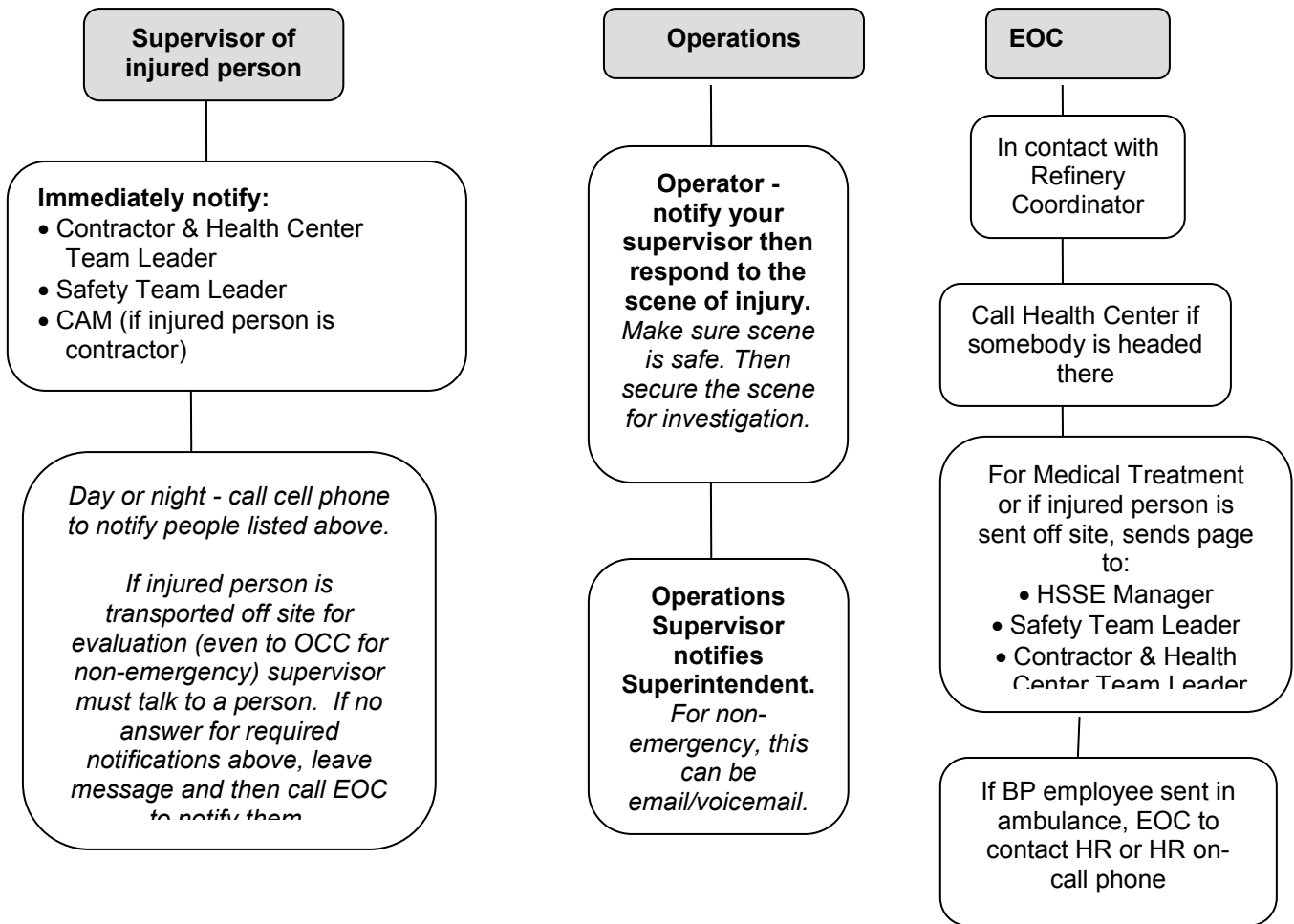
Attachment 11: Injury Reporting Flowchart



**The decision on Emergency or non-emergency is based on obvious injuries, mechanism of injury, best judgement by people on scene and EOC. For example, an injury requiring ERT response would be Emergency.*

*** Go to Radio channel 14A and say "EMERGENCY! EMERGENCY! EMERGENCY!" Identify yourself and state the type of emergency, location, people in peril. By phone, call the EOC at 6911 or 567-698-6911.*

ADDITIONAL NOTIFICATIONS & INFORMATION



HSSE Manager (or DOA) for Emergency/Medical Treatment on Days:

- Call BUL
- Call SLT member that injured party reports up to.
- Send email to whole SLT with initial information.
- For emergency on nights, HSSE Manager (not DOA) will do notifications
- For first aid, HSSE Manager (or DOA) make determination if BUL & SLT needs to know immediately.

Safety Team Leader (or DOA) - If necessary, send safety advisor to secure/preserve scene.

Attachment 12: Expectations for Traction Data Population Level 2 and 3 Investigations

1. The Investigation Lead is responsible to complete all Traction Entries resulting from the Investigation.
2. This includes the following (refer to the “**Edit the Report**” block below):
 - Input witness statements into “**Witness Statements**” (optional)
 - Attach both the Final report and one-page Lessons Learned into “**Attached Files**”
 - Populate “**Investigation**” – this includes team members and start date.
 - Enter action items, including responsible party and completion date into “**Action Item(s)**”
 - Review the “**General information**” sections and complete any that “**Need Data**”.

Edit the Report:

- ◆ [Responsible Organization](#)
- ◆ [Location](#)
- ◆ [Event Geography](#)
- ◆ [General Information 1](#)
- ◆ [General Information 2](#)
- ◆ [General Information 3](#)
- ◆ [General Information 4](#)
- ▶ Injury

- ◆ [Loss Control Costs](#)
- ◆ [Actual Severity](#)
- ◆ [Potential Risk](#)
- ▶ **Witness Statement(s)**
- ▶ **Action Item(s)**
- ▶ [Investigation](#)
- ◆ [Attached Files \(1\)](#)

Attachment 13: Expectations for Traction Data Population Level 1 Investigations

1. The Investigation Lead is responsible to complete all Traction Entries resulting from the Investigation.
2. This includes the following (refer to the “**Edit the Report**” block below):
 - Attach the Level 1 Pro Forma, or equivalent, into “**Attached Files**”
 - Attach any photographs or other information such as sketches or failure reports (as applicable) into “**Attached Files**”
 - Populate “**Investigation**” – this includes team members and start date. Note that a Contractor representative must be included on the investigation team if a contractor is involved if it is a process safety issue.
 - Enter action items, including responsible party and completion date into “**Action Item(s)**”
 - Review the “**General information**” sections and complete any that “**Need Data**”.

Edit the Report:

- ◆ [Responsible Organization](#)
- ◆ [Location](#)
- ◆ [Event Geography](#)
- ◆ [General Information 1](#)
- ◆ [General Information 2](#)
- ◆ [General Information 3](#)
- ◆ [General Information 4](#)
- ▶ Injury

- ◆ [Loss Control Costs](#)
- ◆ [Actual Severity](#)
- ◆ [Potential Risk](#)
- ▶ [Witness Statement\(s\)](#)

- ▶ [Action Item\(s\)](#)

- ▶ [Investigation](#)

- ◆ [Attached Files \(1\)](#)

Attachment 14: Expectations of the Area Supervisor When an Incident Occurs

- Document the date and time of the incident.
- Document the date and time of the start of the investigation.
- Entering this initial information into Traction documents the start of the investigation.
- Secure and barricade the incident scene as appropriate. Relevant debris that may be outside of the barricaded area should also be secured.
- Photograph, videotape and/or sketch the incident scene.
- Obtain on-the-spot information from eyewitnesses. A written account of the incident should be obtained from each eye witness. (Use Eye Witness Form - SAF058-FM07)
- Collect or make copies of the following:
 - Log book entries, hard copies of data and trend plots stored in the computer, printouts of alarm summaries, written orders, standard operating instructions, standard maintenance instructions, training guides etc. which may pertain to the incident.
 - Any sign-off procedures or general procedure which were being used or could have been used.
 - Relevant permits and/or work orders.
 - Sign-in/sign-out sheets.
 - Weather conditions (i.e. wind speed and direction, humidity, temperature, etc.).
 - Comments on the physical condition of the incident site (housekeeping or other).
 - Other information as needed.
- Survey the area and record the following information if relevant:
 - Positions of control valves, manual valves and relief valves.
 - Control valves on manual, bypassed or hand-jacked.
 - Activated trips and alarms.
 - Inoperable equipment especially alarms.
 - Names of all personnel who were in the area including their position/function and company.
- Relevant information should also be collected from upstream or downstream units and other processes which may have been involved in the incident. Similar information, where appropriate, should be obtained from non-process areas involved in the incident.