

HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

1.0 PURPOSE

The purpose of the Incident Reporting & Investigation Procedure is to establish a system for prompt reporting, appropriate response and provides requirements for safely securing the scene of incidents. The procedure also provides resources and requirements for causal factor identification, ensures thorough investigations and proper classification including methods to establish corrective actions to prevent recurrence of incidents. This procedure is in alignment with the requirements set forth by Westlake Chemical Corporation HSE 70.004 and also conforms to OSHA 1910.119 “Process Safety Management of Highly Hazardous Chemicals” and EPA’s “Risk Management” requirements.

2.0 SCOPE

This program applies to all incidents that occur on the Westlake Chemical Plaquemine Complex property.

3.0 DEFINITIONS

- 3.1 Action Plan / Solutions – the outcome of an RCA which results in an action plan that is effective in preventing (or significantly reducing) recurrence of an event or incident. Action Items / Solutions also meet the solution criteria as listed in 3.27.
- 3.2 Catastrophic Release - A major uncontrolled emission, fire, or explosion involving one or more highly hazardous chemicals that presents or could have caused serious danger to employees in the workplace.
- 3.3 Chemical Exposure – Anytime an employee is exposed to a hazardous workplace chemical. In some cases this is through physical contact, inhalation, absorption, ingestion, or by injection. Other cases may involve chemical exposures where there was no physical contact, absorption, ingestion or injection and the proper PPE was being worn and only requires decontamination via a safety shower.
- 3.4 Days Away From Work (DAFW) – Injuries or illnesses resulting in one or more days or shifts away from work beginning the day or shift after occurrence. When a licensed health care professional recommends days or shifts away from work the days or shifts are counted even if the employee comes to work. Days or shifts are not counted if a licensed health care professional has released the employee to return to work and the employee does not do so. Days are full calendar days or shifts. The count of days or shifts begins with the first full day or shift away from work. Days or shifts will be counted until the employee is released by a licensed health care professional to return to work, is terminated or retires.
- 3.5 Environmental, Health, Safety & Security (EHSS) Compliance Event – Any event with environmental, health, safety or security impact that triggers a governmental reporting obligation. These include events classified as Health and Safety Compliance Events,



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

Environmental Compliance Events or reportable Environmental Spill and Release.

3.6 Electronic Tracking System – “ETS” or Enablon.

3.7 Event / Incident – Events resulting in:

- First Aid Injury
- OSHA Recordable Injury or Illness
- Overnight hospitalization (including observation)
- Security Breach (violation of facility security plan)
- Catastrophic equipment failure (such as line or vessel rupture, complete or partial disintegration of rotating equipment, collapsed structure, etc.)
- Fire
- Explosion
- Near Miss
- Spill
- Environmental Release
- PSM Near Miss
- IH-Action Level Exceedance
- Chemical Exposure
- Mechanical Failure
- Minor RCMS Non-Conformance
- Non-Work Related Illness or Injury
- Precautionary / No Treatment
- PSM/RMP Incident
- PSM/RMP Near Miss
- Power Loss/Dip
- Process Upset
- Vehicle Incident
- Accidental release from processes covered by the Risk Management Program Regulation that results in off-site deaths, injuries, evacuations, sheltering-in-place, property damage, or environmental damage;
- Catastrophic release of a "highly hazardous chemical" (as defined by the OSHA PSM Standard 29 CFR 1910.119);
- Release (loss of containment) of 5,000 lb. of a flammable material; or any other incident identified by management as requiring investigation.

3.8 Event Owner – within the ETS, event owners can be Unit Managers or Department Heads. For incidents involving contractors or maintenance, the event owner may be a Maintenance Superintendent.

3.9 First Aid (FA) – Treatment of minor injuries and illnesses by: (a) Using a nonprescription medication at nonprescription strength; (b) Administering tetanus immunizations; (c); Cleaning,



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

flushing or soaking wounds on the surface of the skin; (d) Using wound coverings such as bandages; (e) Using hot or cold therapy; (f) Using any non-rigid means of support; (g) Using temporary immobilization devices while transporting an accident victim; (h) Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister; (i) using eye patches; (j) Removing foreign bodies from the eye using only irrigation or cotton swab; (k) Removing splinters or foreign material from areas other than the eye by simple means (l) Using finger guards; (m) Using massages; or (n) Drinking fluids for relief of heat stress.

- 3.10 Hazard Recognition – an unsafe condition that could potentially cause injury or incident if left unmitigated.
- 3.11 Health, Safety & Environmental (HSE) Compliance Event – Any injury, illness, IH, PSM, Security or other HSS related event required to be reported or recorded to a government agency having jurisdiction at the site.
- 3.12 HSE Incident Severity – types of incidents listed in 3.5 shall be evaluated by the following criteria and will require “Impact” identification within electronic tracking system:
- Human Impacts
 - Environmental Impacts
 - Property Damage / Loss
 - Evacuation / Sheltering
 - Process Safety Event
 - Media Involvement
 - Regulatory Agency Involvement
- 3.13 Highly Hazardous Chemical – a substance possessing toxic, reactive, flammable, or explosive properties and specified by paragraph (a) (1) of the OSHA PSM Standard 29 CFR 1910.119.
- 3.14 Health, Safety, Environmental & Security (HSE) Incident Levels as defined by Westlake Corporate Policy HSE.70.003.
- 3.14.1 Level 1 – The most severe type of HSE Incident: fatality, inpatient hospitalization of a Westlake employee, contractor, visitor or emergency responder. Known or alleged injuries in the community from chemical exposures. Environmental Reportable Quantity exceedance with offsite impacts. Property or Equipment Damage $\geq$ \$10M. Evacuation / Sheltering in the community or an evacuation of the plant. Medical Involvement includes national media response over an incident. Regulatory Agency Involvement as if with state or federal agency inspections or notifications. For further description, refer to HSE.70.003.
- 3.14.2 Level 2 – OSHA Recordable of Westlake Employee, Contractor, Visitor or Emergency



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

Responder. Environmental Impact of Reportable Quantity, NPDES event that exceeds permit limit, or mode of transportation within fence line with release > RQ. Property Damage such as fire or other that causes damage > \$1M but less than \$10M. Evacuation / Sheltering when information alerted to community or stoppage of work at other units onsite. (Example: site wide stop work due to flammable gas leak). Media Involvement on a local level about a fire or other incident. Regulatory Agency involvement, OSHA or other plant for investigations.

- 3.14.3 Level 3 – injuries resulting in first aid of Westlake Employee, Contractor, Visitor or Emergency Responder. Environmental Impacts such as spills or releases < Reportable Quantities. Property or equipment damage ≤ \$1M. Regulatory Agency is issued a Notice of Violation or OSHA comes onsite to investigate injury.
- 3.14.4 Level 4 – Near Miss or injury not requiring treatment such as a report only or precautionary. PSM near miss or API near miss.
- 3.15 IH Monitoring Over Standard – Industrial Hygiene air sample results that exceed a regulatory exposure limit, industry accepted exposure value, or in the absence of either of these occupational exposure limits, and Westlake Chemical Internal Permissible Exposure Limit and the employee was properly fitted and wearing the appropriate PPE.
- 3.16 IH Monitoring Over Standard – Industrial Hygiene air sample results that exceed a regulatory exposure limit, industry accepted exposure value, or in the absence of either of these occupational exposure limits, and Westlake Chemical Internal Permissible Exposure Limit and the employee was properly fitted and wearing the appropriate PPE.
- 3.17 Job Transfer – Injuries or illnesses resulting, as determined by a licensed health care professional, in an employee being transferred to another job. The days are counted as full calendar days, beginning the first day the employee starts the new position, until the employee is released by a licensed health care professional to return to work with no restrictions, is given permanent restrictions, retires or is terminated.
- 3.18 Legal Action – Any legal action or notice of alleged violation from any Regulatory Agency to include Environmental, Health, Safety, Federal, Provincial, Transportation, Security or Product Compliance regulatory agencies.
- 3.19 Near-Miss Incident – An unplanned event that did not result in injury, illness or property damage, but had the potential to do so if conditions or time were different, or if the event was allowed to progress further.
- The scope of the near miss definition will be related to health and safety incidents. There is/will be individual definitions of process safety and environmental near misses to cover spill and process events.



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

- A near miss is “action” or “event-related”.
 - Identification of a physical hazard alone is not considered a near-miss.
 - Formal or Informal RCA for Near Miss Incidents may be requested at discretion of management if the incident had potential for high severity.
- 3.20 OSHA Recordable / Medical Treatment – injuries or illness resulting in the management and care above and beyond First Aid as per 29 CFR 1904. Medical treatment does not include visits to a licensed health care professional solely for observation or counseling, or conducting diagnostic procedures.
- 3.21 Precautionary / No Treatment – event or events that could have resulted in an injury or illness. An individual may have been evaluated as a “precautionary” measure to ensure no injury or illness. In some cases only observation is recommended with no treatment, while others may require “non-reportable” diagnostics to be completed to verify the severity of the incident.
- 3.22 PSM / RMP Incident – Any catastrophic release which resulted from a release in the workplace of a highly hazardous chemical (HHC) as defined in 29 CFR 1910.119 or Title 40 Chapter 1 Subchapter Part 68 which meets any one of the following criteria:
- 3.22.1 One or more fatalities or hospitalization of three or more personnel.
 - 3.22.2 A fire or explosion of an HHC defined or listed in the PSM/RMP program resulting in greater than or equal to \$250,000 direct cost.
 - 3.22.3 Officially declared community evacuation or shelter-in-place due to loss of primary containment of an HHC.
 - 3.22.4 Significant harm to wildlife or prolonged (several months or more) clean-up requirement.
- 3.23 PSM/RMP Near Miss Event - Any event which could reasonably have resulted in a catastrophic release of highly hazardous chemical(s) in the workplace (29 CFR 1910.119 (m)(1) but does not meet threshold criteria for a PSM or an EPA RMP incident. It includes any event meeting any one of the following criteria:
- 3.23.1 A fire or explosion of an HHC or listed PSM and/or RMP chemical greater than \$100,000 and less than \$250,000 direct cost.
 - 3.23.2 On-site evacuation or shelter-in-place due to loss of primary containment of an HHC.
 - 3.23.3 A failure of safety critical equipment, instruments, or procedure (ie wrong material added to the process with potentially catastrophic results, plugged inlet line to a relief valve, plugged pressure tap on a safety critical pressure interlock, etc.)



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

- 3.23.4 An incident with a recordable injury resulting from an LOPC of an HHC or utilities directly impacting PSM/RMP covered processes containing an HHC. This would include injuries from utilities in covered processes (steam, nitrogen, etc.)
- 3.23.5 An acute LOPC of an HHC (i.e., from a vessel, pipe, pump, etc.), excluding releases to a designed control device specifically designed for that event such as a flare, scrubber or safety relief device per recognized and generally accepted good engineering practice (RAGAGEP). The criteria are based on whether the release exceeds the reporting threshold values in the table below in any one-hour time period and meets the criteria listed in the PSM Incident Decision Tree.

PSM/RMP Near Miss Threshold Values for ‘Loss of Primary Containment’ based upon UN Dangerous Goods (AHM) hazard categories	
Material Hazard classifications as Defined by United Nations (UN) Dangerous Goods definitions	“Process Safety Event” threshold quantity (lbs.)
All TIH Zone A materials ¹	11
All TIH Zone B materials ¹	55
All TIH Zone C materials ¹	220
All TIH Zone D materials ¹	440
All “Packing Group I” materials & Div. 2.1 (Flammables Gases) ¹	1100
All “Packing Group II” materials ¹	2200
All “Packing Group III” materials & Div. 2.2 (Nonflammables Gases) ¹	4400
¹ The UN Dangerous Goods definitions include several generic descriptions (e.g., “Toxic fluids”) or materials which are not germane to the chemical or petrochemical industries (e.g., cotton, explosive ammunition. Although the UN Dangerous Goods listing and rating criteria have been used as a basis for establishing the process safety incident threshold quantities, these generic or non-applicable materials have been excluded.	

Example guidance release quantities for reporting a PSM Near Miss event are as follows (HHC’s from PSM/RMP program exceeding the threshold quantity from the table above:

Vinyl Chloride, Ethane, or Ethylene	>= 1100 lbs.
Ethylene Dichloride	>= 2200 lbs.
Chlorine	>= 55 lbs.

If a site releases 55 pounds of chlorine or more from a relief device (with no injuries, no community complaints and/or no sheltering-in-place), this would still be considered a PSM/RMP Near Miss event and would require investigation and action items to prevent recurrence.



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

- 3.24 Restricted / Modified Duty – injuries or illnesses resulting in days of restricted or modified duty, as determined by a licensed health care professional, beginning on the day after the recommendation that restricts the employee from performing 1 or more routine functions of his/her weekly job duties. The number of days are counted as full calendar days or full shifts until the employee is released by a licensed health care professional to return to work with no restrictions, is given permanent restrictions, retires or is terminated.
- 3.25 RMP Incident – The Environmental Protection Agency requires the five-year accident history to include all accidental releases from covered processes that resulted in deaths, injuries, or significant property damage on site, or known offsite deaths, injuries, evacuations, sheltering-in-place, property damage, or environmental damage.
- 3.26 Root Cause Analysis (RCA) – “Root Cause Analysis” is a methodology by which a team of personnel study and take into account investigation data and evidence to determine the root cause of an incident. The purpose is to identify effective solutions and action plans that prevent recurrence.
- 3.26.1 **Formal RCAs** are facilitated by personnel trained in Root Cause Analysis using tools such as Sologic or Apollo. Facilitator list is maintained by HSE personnel. This methodology is required for all Level 1 & Level 2 incidents and any others at the discretion of management. Any RCA with potential legal implications must notify HSE & Management Leadership Teams.
- 3.26.2 **Informal RCA, 5Why or other methodology** that determines causal factors of an incident. This methodology is required for all Level 3 incidents, injuries and others at the discretion of management.
- 3.27 RCA Facilitator – an individual who has completed training in Sologic or Apollo Root Cause Analysis for Practitioners.
- 3.28 Solution Criteria – action plans and solutions as a result from an RCA or 5Why that meet the following: prevents recurrence, within the span of control and meets goals and objectives.
- 3.29 Third Party Audit / Inspection – On-site audit or inspection conducted by a party, or person who is an employee of a local, state, federal or provincial agency.
- 3.30 Work Environment – the work environment is defined as the establishment and other locations to include any land, premises, location or thing at, upon, in or near which one or more employees are working indoors or out or are present as a condition of their employment. The work environment includes not only physical locations, but also the equipment or materials used by the employee during the course of his or her work.



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

4.0 RESPONSIBILITIES

4.1 Employees / Contractors

- 4.1.1 Report all on the job incidents to your immediate supervisor. Incidents may require the contractor to participate in the investigation process if they were involved in the incident.
- 4.1.2 Assist Supervisors in completing the electronic tracking system submissions and Appendices upon request.
- 4.1.3 Cooperate with the Incident Investigation Team in any subsequent investigations.

4.2 Supervisors & Designees

- 4.2.1 Obtain appropriate initial medical care for injured employees, mitigate hazard and release scene as soon as possible. All injured employees must be referred to the Medical Department or Medical Emergency Response Team for Evaluation and/or treatment regardless of the severity of the accident.
- 4.2.2 Notify the appropriate Unit Manager(s) and the “On call” Health, Safety and Environmental representative.
- 4.2.3 Mitigate the incident safely and red barricade the area for preservation of evidence. Take photos of all evidence relating to the incident. Start the investigation per requirements.
- 4.2.4 Prior to the end of the shift, create new event within ETS and upload Preliminary Information (Appendix A – Section 1), prior to the end of the shift, for incidents.
- 4.2.5 Within 7 days, complete and upload the remainder of Appendix A for Level 3 & 4 incidents and complete analysis phase as required - see Appendix B.
- 4.2.6 Cooperate with the Incident Investigation team in any subsequent investigations.

4.3 Unit Managers / Department Heads

- 4.3.1 Ensures incidents are entered into electronic tracking system and information is correct.
- 4.3.2 Depending on the severity of the incident, notify appropriate Westlake Chemical Management and EH&S “On Call” representative.
- 4.3.3 Assign an Investigation Team Leader and assist with assigning RCA Facilitator.
- 4.3.4 Approve and Review Solutions and Action Plans.



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

- 4.3.5 Assign recommendations and corrective actions resulting from incident investigation to responsible parties in the electronic tracking system.
- 4.3.6 Ensure incident reports are reviewed with affected personnel and contractors.
- 4.4 Investigation Team Leader
 - 4.4.1 Form an investigation team.
 - 4.4.2 Requests RCA facilitator to be assigned when RCA is required for incident events. RCA Facilitators must be on the approved list of RCA Facilitators.
 - 4.4.3 Responsible for adding all evidence into electronic tracking system. This includes RCA Final Report, 5 Whys, pictures, Safe Work Permit (SWP) and Appendices where required.
 - 4.4.4 Ensure all hand written reports are entered in the electronic tracking system.
 - 4.4.5 Enter the Action Items / Solutions from the Root Cause Analysis into the electronic tracking system.
- 4.5 RCA Facilitator
 - 4.5.1 Facilitates the Root Cause Analysis.
 - 4.5.2 Prepares the RCA Report Form.
 - 4.5.3 Reviews and finalizes the RCA Report Form with the Unit or Department Manager, and turns over report to Investigation Team Leader.
 - 4.5.4 Ensures all evidence is available when performing the RCA.
 - 4.5.5 Ensures that the solutions meet the following criteria:
 - Prevents recurrence
 - Within Span of Control
 - Meets Goals & Objectives
 - 4.5.6 Schedules follow up RCAs as needed.



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

4.6 Environmental, Health, Safety and Security

- 4.6.1 Ensure that environmental, health, safety, and security incident information is entered correctly into the electronic tracking system.
- 4.6.2 Supports supervision and investigation team leaders with ETS entries, investigations and compliance with this procedure.
- 4.6.3 Determines HSE, PSE and/or RMP Level Classifications and enters into electronic tracking system.
- 4.6.4 Ensure that impacts within the electronic tracking system are properly classified.
- 4.6.5 Assist in RCAs as needed.
- 4.6.6 Advise as needed in all incidents with support
- 4.6.7 Determine if the incident is Attorney Client Privileged.

4.7 Medical Emergency Response Team Member

- 4.7.1 Responding to emergencies as needed.
- 4.7.2 Injured/ill employees should be evaluated and treated in keeping with current medical protocols and the team member's scope of practice.

4.8 Visitors

- 4.8.1 Report all incidents to supervisor and Westlake Chemical contact person.

4.9 Site Manager

- 4.9.1 Review all RCA findings and corrective actions.

5.0 PROCEDURE

5.1 Reporting Phase

- 5.1.1 Employees are responsible for immediately reporting all workplace incidents to their immediate supervisor.



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

- 5.1.2 Responsible Supervisor shall notify his/her Manager and HSE department. During off hours, the “On Call” HSE Representative shall be contacted.
- 5.1.3 All Events/Incidents (Levels 1 – 4), and associated documentation shall be uploaded to electronic tracking system. In some cases, a summary may be developed to communicate to site management and or to be used for sharing and training.
- 5.1.4 PSM related incident reports shall include the following as minimum:
 - Date of the incident
 - Date the incident investigation began
 - A description of the incident
 - The factors that contributed to the incident; and
 - Any recommendations resulting from the investigation.
- 5.1.5 Some incidents and associated investigations may require communication and review with all sites within the Westlake Chemical organization to discuss best practices and provide opportunity for “lessons learned” discussions. The H&S Department will be responsible for distributing these “lessons learned.”
- 5.1.6 Some incidents involving contractors directly or work activities that may affect contractors require communication and review of lessons learned and corrective actions with contractors so they are aware of improvements to prevent recurrence.
- 5.2 Preliminary Investigation Phase
 - 5.2.1 When an accident/incident occurs, the primary focus shall be obtaining appropriate treatment for injured people and securing the scene to prevent additional injuries or incidents. (IE: “securing” by means of Danger Tape, physical barriers, limiting access, etc)
 - 5.2.2 Once injured personnel are medically cared for and the conditions of the unit and/or plant are safe and secure, the Supervisor responsible will begin the Preliminary Investigation Phase. After all notifications are made per section 5.1, the Supervisor will input preliminary information into the electronic tracking system.
 - 5.2.2.1 Preliminary Information shall be entered into electronic tracking system before the end of the shift in which the incident occurred, which includes:
 - Creation of a New Event within ETS.
 - Unit / Department
 - Event Title, Date & Time
 - Category, Reported By, Brief Description
 - Location: Unit or Specific Location
 - Workflow: Event Owner – Unit / Dept. Manager



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

- Save & Submit
- Completion of Section 1, Appendix A.
 - Due by end of shift
 - *Remainder of Appendix A due in 7 days*

**Entries into the Electronic Tracking System (ETS)
generate site wide email notifications to Site Manager,
Unit Managers, HSE and ETS users.**

- 5.2.3 Once Preliminary Information is entered into ETS, HSE department will assist in determining Incident Level Classification and Impact(s) related to the incident within electronic tracking system.
- 5.2.4 PSM related incidents may require further collaboration for classification. Refer to section 5.2.7 and Appendix D.
- 5.2.5 Preliminary Tools needed to be available for investigation purposes include:
- Barricade tape, and identification tags
 - Camera
 - Flashlight with batteries
 - Notebook or clipboard with pens, pencils
 - Measuring tape/ Ruler
 - Gloves / PPE
- 5.2.6 For PSM Incident(s) and Near Miss Decision Tree, Appendix D shall be used to determine if the incident meets the requirements of an OSHA PSM Incident or Near Miss, with assistance of HSE department and/or PSM Subject Matter Expert.
- 5.2.7 In some cases, immediate mitigation, sharing and communication at the facility should occur prior to the end of shift (to include follow up with all shifts); with longer term corrective and preventative action being developed and addressed as part of the formal investigation & RCA processes – see Analysis Phase 5.4.
- 5.3 Investigation Phase
- 5.3.1 Upon completion of Preliminary Information Entry and submission, the Investigation Phase begins where the Unit Manager assigns an Investigation Team Leader, where required. See section 5.3.3.



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

- 5.3.2 The Investigation Team Leader will assemble a team of individuals to investigate and determine various needs set forth by the Team Leader. Examples of evidence that may be captured during this phase include:
- Incident Summary, Appendices A & B
 - Material involved, chemical(s)
 - Equipment involved
 - Area of the Incident/Event
 - Date/Time of day of the Incident/Event
 - Employee (s), Contractor(s) or Visitor(s) involved
 - Witness(es) hand written statements
 - Individual(s) hand written statements who were directly involved in the incident
 - Pictures
 - Safe Work, Confined Space, Electrical, Hot Work Permits
 - Job Safety Analysis
 - Isolation Lists
 - Work order description
 - Maintenance Records & History
 - Instrument Records & History
 - Failure Analysis from Subject Matter Experts, 3rd party labs, etc.
- 5.3.3 HSE Incident Levels are determined by definitions in section 3.13 with assistance from the HSE department. The HSE Level determines the documentation required to complete the investigation. The following are minimum requirements for documentation:
- 5.3.3.1 HSE Incident Levels 1 & 2
- Appendix A – Preliminary Information (before end of shift)
 - Appendix C – Formal RCA Report Form
 - RCA completed within 14 days
 - RCA Flow Chart – Approved by Manager and uploaded in Enablon within 30 days
 - Solutions – Approved by Manager and uploaded in Enablon within 30 days
 - Investigation Data & Evidence as referenced in 5.3.2.
 - Investigation Team Leader and RCA Facilitator required.
- 5.3.3.2 HSE Incident Level 3
- Appendix A – Section 1 by end of shift
 - Appendix B – Informal RCA / 5 Why Analysis Form
 - Into ETS within 7 days
 - Corrective Actions signed by Manager within 7 days
 - Investigation Team Leader and RCA not required unless requested.
- 5.3.3.3 HSE Level 4
- May require Informal or RCA at the discretion or request of management.



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

- If RCA is requested, same submission requirements apply as requested by Management.

5.3.4 Investigation Team members shall include but are not limited to:

- 5.3.4.1 Injured Employee(s)
- 5.3.4.2 Shift Supervisors or Superintendents
- 5.3.4.3 HSE Representatives
- 5.3.4.4 RCA Facilitators
- 5.3.4.5 Process Engineers
- 5.3.4.6 Subject Matter Experts
- 5.3.4.7 Safety Involvement Team Members
- 5.3.4.8 Unit Managers
- 5.3.4.9 Legal Team Members
- 5.3.4.10 3rd Party RCA Facilitators
- 5.3.4.11 Contractors or Visitors involved

5.3.5 Once the Investigation Team is developed and each person has his/her assignment, they will then gather investigation data and evidence to assist in fact finding of the incident for the RCA / Analysis Phase in section 5.4.

5.3.6 Investigation team members shall be identified by name on the final report.

5.3.7 The Investigation Team Leader or his designee is responsible for uploading all relevant investigation documentation to the electronic tracking system. In some cases investigation information may need to be cleared by Westlake Chemical Legal prior to uploading.

5.3.8 Investigations for EHSS Compliance Events must be initiated within 24 hours of the event and completed within 14 days of the event date.

5.3.9 Investigations for all PSM Incidents shall be initiated promptly, but no later than 48 hours following the incident. Entry into the electronic tracking system signifies the start of the investigation. See Section 5.1.4.

5.4 Analysis Phase

5.4.1 After all aspects of the Investigation Phase in Section 5.3 are completed, the Analysis Phase will begin. This phase will determine root cause(s), solutions and action plans.

5.4.2 The RCA Facilitator requested by the Investigation Team Leader will setup the RCA meeting and invite appropriate Investigation Team Members to participate.

5.4.3 The RCA will determine Root Cause(s) and the RCA Facilitator will review and



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

present solutions that prevent recurrence to the Investigation Team Leader.

- 5.4.4 The Investigation Team Leader will present and review final RCA Report with Unit or Departmental Manager for Solutions and approval. He/she will enter Action Plans with responsible persons and due dates into electronic tracking system for tracking to completion once approved.
- 5.4.5 Investigation Team Leader will notify responsible persons of Action Plans and Due Dates.
- 5.4.6 There are 3 levels of Analysis that may be utilized as part of the investigation process. They are as follows:
 - 5.4.6.1 Informal RCA – 5 Why Analysis or equivalent (Level 3 events, Level 4 as requested)
 - 5.4.6.2 Formal RCA
 - 5.4.6.3 Expanded / Detailed RCA
- 5.4.7 The level of Analysis may be elevated based on the severity or perceived risk of impact consequence. This may be done at the discretion of local site management, Corporate EHSS or Sr. Management.
- 5.4.8 RCA investigations shall identify and document root causes leading to the incident.
- 5.4.9 Where required, RCAs must be scheduled within 14 days after the event.
- 5.4.10 RCA's for EHSS Compliance Events must be completed within 30 days from the Investigation completion date.
- 5.4.11 Appendix C is the template to document all aspects of a Formal RCA or Expanded/Detailed RCA for all HSE Level 1 and 2 Events.

Appendix C must be submitted into the ETS, signed by / approved by Manager within 30 days after the event. Solutions and Action Plans must be entered into the electronic tracking system within 30 days.

- 5.4.12 Appendix B is the template to document all aspects of an Informal 5-Why Investigation as required for all HSE Level 3 and Level 4 where required or requested. Other similar methodology is accepted.
- 5.5 Action Steps/Corrective Action
 - 5.5.1 All investigations shall include action steps/ plans or corrective actions to be developed to facilitate prevention of similar incident/event.



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

5.5.2 All action steps/corrective actions shall be uploaded into the electronic tracking system and approved by Manager.

5.5.2.1 If any recommendations or action items from the investigation are rejected, a plausible basis for the rejection and affirmation that the hazard has been properly addressed shall be documented in the electronic tracking system.

5.6 Review & Approval Phase

5.6.1 All investigation requiring a RCA or expanded/detailed RCA must be reviewed and approved by the Event Owner within 30 days. Corrective Action Plans shall be reviewed with the site manager or designee.

5.6.2 All RCA's shall be documented, reviewed and communicated with all applicable shifts, units, area employees to include effected contractors.

5.7 Event Closure

5.7.1 Incidents shall be closed within the electronic tracking system after the investigation has been completed and Solutions / Action Items have been approved.

6.0 RECORD KEEPING

6.1 All incident investigation reports will be maintained in the electronic tracking system. This shall also include all associated investigation documents as noted in section 5.3.2.

6.2 All investigation reports will be maintained as required by Westlake Chemical Corporation. Following the retention period all reports will be disposed of in accordance with company policy.

6.2.1 All PSM-related investigation reports shall be retained for at least five (5) years.

6.3 All 5 Why Investigations and other documented analyses will be maintained within their respective departments and within the electronic tracking system.

6.4 If litigation exists due to incident, then retention time may be longer.

7.0 PROCEDURE REVIEW

7.1 This program will be reviewed at least every three years in connection with the Process Safety Management and Risk Management Plan compliance audit. H&S will ensure this audit is performed. The purpose is to assess compliance and to evaluate program effectiveness.

HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

- 7.2 Following the review, the program will be revised to include any necessary changes. Review results will be documented. All employees will be informed of any changes made in the plan.
- 7.3 Department Managers will be informed of review results.

8.0 TRAINING

- 8.1 Employees will receive initial training on this procedure upon hire.
- 8.2 Supervisor will be trained in the fundamentals of completing an investigation annually.
- 8.3 RCA Facilitators will receive Sologic or Apollo Root Cause Facilitator Training at least every 3 years.
- 8.4 If procedure requires updates or edits, affected employees will be trained in their respective areas of responsibility.

9.0 APPENDICES

Appendix A – Preliminary Investigation Form
Appendix B – Informal RCA - 5Why Analysis Form
Appendix C – Formal RCA Report Form
Appendix D – PSM Decision Tree
Appendix E – Investigation Documentation Quick Reference Guide

Revision History

Rev	Changes	Approved	Date
9	Added Revision History; 3.16 Updated RMP / PSM Incident Definition, 3.17 Updated RMP / PSM Near Miss Definition, 3.17.1.5 Added table from HSE 70-004; 5.1.17 Added PSM Decision Tree A-1, 5.2.6 PSM Investigation Timeframe, 5.4.2 Added Action Item Rejection Language; 5.6.2 Added Investigation Report Requirements; 5.6.4 Updated sharing lessons learned from incident with contractors; 6.0 Added retention policy for investigations to 5 years minimum.	H. Garner	08/16/19
10	1.0 Purpose – expanded definition to include establishing a system for reporting and securing scene of incident.		



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

	3.1 Updated Action Item / Solution Definition to include action plan which provides effective solutions. 3.4 Updated grammar and definition for DAFW. 3.6 Removed “Any Event” and reworded to “Events”. 3.6 Removed Hazard Recognition from definitions “Events”. Added ETS Definition. 3.9 Updated Definition for Hazard Recognition. 3.14 Added definitions from Corporate Policy 70.003. 3.17 Added definition of Job Transfer. 3.19 Added “may be requested at discretion of management if the incident had potential for high severity.” 3.20 Added definition for OSHA Recordable. 3.26 Expanded definitions for Informal and Formal RCAs and 5 Whys. 4.1 Updated grammar and expectations for contractors. 4.2.2 Updated contact for “On Call HSE”. 4.2.4 – Added section for “Section 1” for Appendix A, required instead of 5 Why. 4.2.5 Updated for Appendix requirements and end of shift, 7 day requirement. 4.4.3 New Responsibility for Investigation Team Leader. 4.5.5 Added Solution Criteria 4.6.2 Added “HSE to support with requirements of procedure.” 4.6.4 Added “Ensure that impacts within the electronic system are properly classified.” 5.1 Reporting and Communication moved from 5.6 to 5.1. 5.2.1 Updated grammar, rewording and more concise. 5.1.2 Added “HSE On Call” Requirement. 5.1.3 Added incidents into ETS requirement. 5.2.1 Added requirements for clarity, grammar, and spelling. 5.2.2 Added “after notifications in 5.1” for Supervisor requirements. 5.2.3 Added requirements for HSE support.		
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HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

	5.2.5 Added reference for PSM incidents. 5.2.8 Omitted “ASAP”. 5.3.1 Added language for submission “beginning of investigation”. 5.3.2 Updated requirements for Investigation Team Leaders. 5.3.3 Inserted from Corporate – sections for Levels. 5.3.4 Updated list of potential Investigation Team Members. 5.3.5 Inserted for clear direction for Investigation Phase. 5.4.1 to 4.4.4 sections added to provide directive on Analysis Phase. 5.4.5 Updated for Action Plan Owners. 5.4.12 Added requirements for RCAs into ETS. 5.4.13 - 5.4.14 for clarity and direction. 8.4 – Added Training requirement for procedure updates. 9.0 – Removed Appendices: Analysis Metric, Enablon Incident Workflow and List of Onsite RCA Facilitators. 9.0 – Reclassified Appendices: A – Preliminary Form B – Informal RCA Form C – Formal RCA Report Form D – PSM Near Miss Decision Tree E – Quick Reference Guide		
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HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

APPENDIX A – Preliminary Investigation Form (Section 1 / Page 1)

INCIDENT TYPE				
☐ Injury/Illness	☐ Fire/Explosion	☐ Equipment/Property Damage		
☐ Hazard Recognition	☐ Act of Violence	☐ Environmental Near Miss		
☐ HS&S Near Miss	☐ Spill/Release	☐ Other:		
GENERAL INFORMATION				
Reporting Supervisor / Investigator Name:			Dept.:	
Date of Incident:	Time of Incident: ☐ a.m. ☐ p.m.	Time of Report: ☐ a.m. ☐ p.m.	Date of Report:	
Basic Incident Description:				
Specific Work being performed:				
Specific Location of Incident:				
Contractor/Temporary Employee involved? If yes, name and contact information:				
ENVIRONMENTAL INFORMATION				
Agency Notified? ☐ Yes ☐ No	Name of Agency: Name of Agency:	Time of Notification: Time of Notification:	Contact: Contact:	
Chemical(s) Involved:				
1.	>RQ? ☐ Yes ☐ No	Spill outside primary containment? ☐ Yes ☐ No	Mitigated? ☐ Yes ☐ No	
2.	>RQ? ☐ Yes ☐ No	Spill outside primary containment? ☐ Yes ☐ No	Mitigated? ☐ Yes ☐ No	
3.	>RQ? ☐ Yes ☐ No	Spill outside primary containment? ☐ Yes ☐ No	Mitigated? ☐ Yes ☐ No	
INJURED PARTY				
If no injury, check box & skip this section. ☐ No Injury		Injured Employee's Name & Job:		
Name of Treating Physician:		Address of Clinic/Hospital:		
Treated in ER? ☐ Yes ☐ No	Overnight Hospitalization? ☐ Yes ☐ No	Employee go home during shift? ☐ Yes ☐ No		
Time Employee Began Work:		Consecutive Days Worked:		
Injury Severity	☐ First Aid	☐ Medical Only	☐ Modified Duty	☐ Days Away from Work
Injury Type:	☐ Laceration	☐ Avulsion	☐ Foreign Body	☐ Heat-Related Symptoms
	☐ Contusion	☐ Chemical Burn/Irritation	☐ Fracture	☐ Inhalation
	☐ Abrasion	☐ Thermal Burn	☐ Sprain/Strain	☐ Other:
Injury Mechanism:	☐ Struck By	☐ Pinch Point	☐ Contact with Hot Object	☐ Fall to Same Level
	☐ Struck Against	☐ Chemical Contact	☐ Fall to Lower Level	☐ Other:
Injury Classification	☐ First Aid	☐ Medical Treatment US	☐ Modified Duties	☐ Lost Time
		☐ Medical Treatment CD		☐ Critical Injury CD
Demographics:	Shift:	Job Yrs. Service:	Plant Yrs. Service:	On Overtime? ☐ Yes ☐ No
PROPERTY DAMAGE				
List property / material damaged :			Nature of damage:	



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

APPENDIX A – Preliminary Investigation Form (Section 2 / Page 2)

EVIDENCE			
Indicate evidence that has been collected and saved			
☐ Applicable JSA (attached)	☐ Employee Statement (attached)	☐ Witness Statement(s) (attached)	
☐ Physical Evidence – Storage Location:		☐ Drawings - File Location:	
☐ Photographs – File Location:		☐ Field Notes / Sketches – File Location:	
PPE (Only if significant for this incident)			
Protective suit worn ☐ Yes ☐ No	Type:	Hard Hat worn ☐ Yes ☐ No	Type:
Fall Protection worn ☐ Yes ☐ No	Type:	Gloves worn ☐ Yes ☐ No	Type:
Respiratory Protection ☐ Yes ☐ No	Type:	Protective boots ☐ Yes ☐ No	Type:
Face/Eye protection ☐ Yes ☐ No	Type:	Other:	
Injured Employee Written Statement			
Describe the events leading up to the incident (describe the job, specific location, why was it being done, what were the conditions in the area, what permits and other job planning preceded the task):			
Describe specifically what occurred at the time of the incident (how exactly did the incident occur):			
Witness Written Statements			
Witness 1: Name:			
Witness 2: Name:			



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

APPENDIX B – Informal RCA / 5 Why Analysis Form

Root Cause Analysis / 5-Why's			
Originator's Name	Shift	Date of Incident	Time of Incident
Person Knowledgeable of Process	Date of Investigation	Time of Investigation	
Primary Metric Affected	Event Type	Event Owner	
Problem Description, Current Situation (Who? What? Where? When? Why? And How?)			
Root Cause Analysis: Why did the problem occur?			
Why? 1:			
Why? 2:			
Why? 3:			
Why? 4:			
Why? 5:			
Immediate Actions Taken			
1.			
2.			
3.			
Standardize			
Please complete the attached Maintenance Standard Work Questionnaire.			
Corrective Actions (Long Term)	Person Responsible	Due Date	Complete Date
1.			
2.			
3.			
4.			
5.			

Approvals: Area Supervisor: _____

Area Manager: _____

Revised: 4/10/2012



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

APPENDIX C – Formal RCA Report Form

Prevention Not Blame

Westlake Chemical

ROOT CAUSE ANALYSIS

Tracking No.

RCA DATE:

FACILITATOR:

TEAM MEMBERS:

LENGTH OF INVESTIGATION:

DEPT. MANAGER APPROVAL:	DATE:
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I PROBLEM DEFINITION –

A What:

B Summary (from the Enablon Report):

C When:

D Where:

E Significance:

- i Safety –
- ii Environmental –
- iii Costs
 - a Revenue Loss -
 - b Total Cost ~

F Frequency:



HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

II CAUSE AND EFFECT SUMMARY

CAUSE AND EFFECT CHART – (see attached chart)

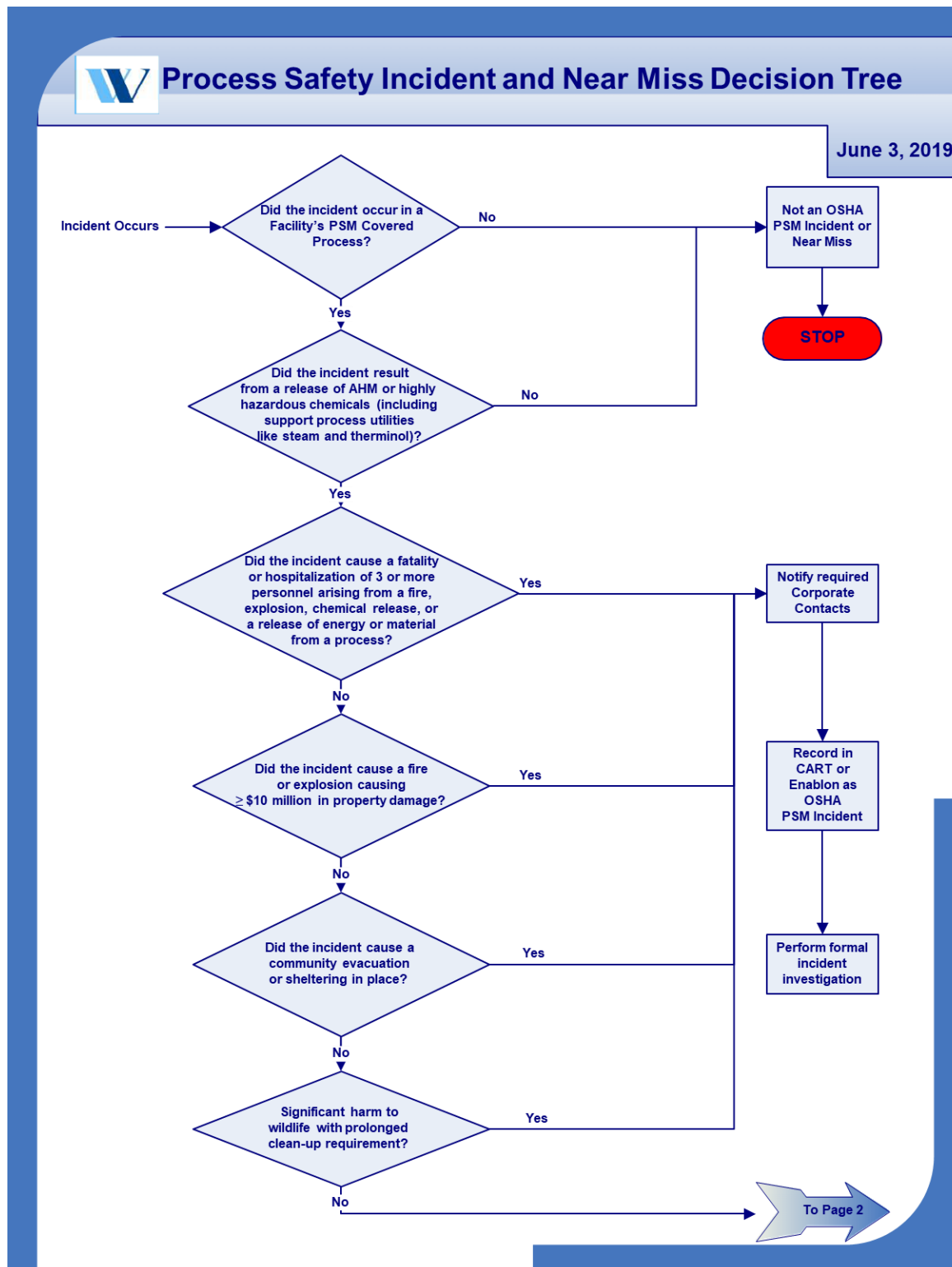
III SOLUTIONS

	Cause/Effect	Solution/Corrective Action	P R	W C	G O	Responsible Person	Expected Completion Date
1							
2							
3							
4							
5							
Abbreviations: PR = Will the solution prevent recurrence? WC = Is the solution within our control? GO = Does the solution meet goals and objectives?							



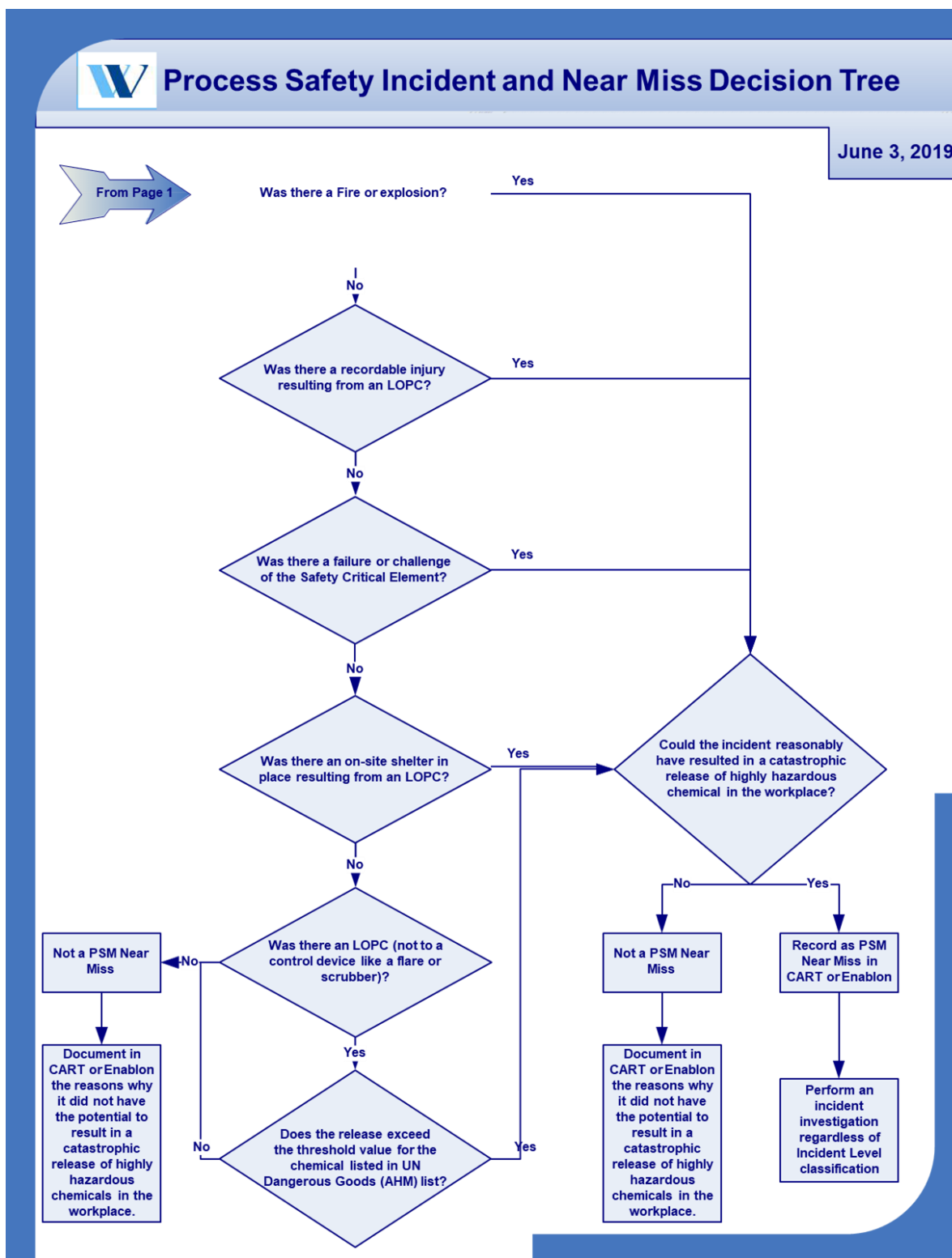
HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

APPENDIX D – PSM Incident and Near Miss Decision Tree





HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION





HEALTH, SAFETY, and SECURITY PROGRAM 110 – INCIDENT REPORTING & INVESTIGATION

APPENDIX E – Investigation Documentation Quick Reference Guide

This quick reference guide outlines the ETS entry requirements, including documentation required for all HSE Levels.

	ETS Submission Requirements	Appendix A	Appendix B	Appendix C
Incident Level	Preliminary Enablon Entry	Preliminary Investigation Form	Informal RCA / 5 Why Analysis Form	Formal RCA Report Form
1	Before end of shift	Section 1 - end of shift Remainder of Form - within 7 days	Not Required	RCA held within 14 days Report with Solutions / Action Plan Approval within 30 days
2	Before end of shift	Section 1 - end of shift Remainder of Form - within 7 days	Not Required	RCA held within 14 days Report with Solutions / Action Plan Approval within 30 days
3	Before end of shift	Section 1 - end of shift Remainder of Form - within 7 days	Required must be submitted and approved in 7 days	Not Required Unless Requested
4	Before end of shift	Section 1 - end of shift Remainder of Form - within 7 days as requested	Not Required Unless Requested	Not Required Unless Requested

NOTE: For PSM Incidents, there is a 48 hour investigation start window. Personnel will consult with HSE / PSM Representative for assistance with Near Miss & RMP Classifications & Reporting.

HSE Level Examples

Level 1	Fatality, Hospitalization, RQ with offsite impact, Regulatory Notice of Violation, Property Damage $\geq$ 10M; Site Evacuation
Level 2	OSHA Recordable, RQ, Property Damage $>$ \$1M & $<$ \$10M; Evacuation w/ community alert
Level 3	First Aid Injury; Env. Release $<$ RQ; Property Damage $<$ \$1M; Regulatory Agency Involvement
Level 4	PSM Near Miss; Hazard Recognition; Near Miss Injury Event

NOTE: these are only examples, not all examples are listed.