Click on incident name in "Event" column
to go directly to 1-Page incident summary.

Major Process Safety Incident vs Root Cause Map

(Quick Reference Guide)

Click on link to go directly
to investigation report.

IChemE
Safety & Loss Prevention
Special Interest Group

Sector		Date	Event	Country	Type	Fatalities	Injuries	Abnormal Operations	Escalation Potential	Earthquake	Tsunami	Flood	Cyclone/Hurricane	Extreme Cold/Ice	Hazard Identification	Process Design	Equipment/Piping Design	Matterials of Construction	Instrumentation	Safety Instrumented Systems	Protective Systems	Plant Layout	Occupied Buildings	Process Monitoring	Process Control	Cyber Security Breach	Alarm Management	Creeping Change	Hazard Awareness	Operations Risk Assessment	Preventative Maintenance	Inspection/Testing	Material Degradation	Work Planning	Maintenance Risk Assessment	Energy Isolation	Control of Work	Housekeeping	Human Factors	Role Clarity	Personal Protective Equipment	Communication	Procedures	Training	Supervision/Leadership	Contractor Selection	Production over Safety	Normalisation of Deviance	Quality Assurance/Control	Management of Change	Failure to Learn	Emergency Preparedness	Process Safety Management	Design Standards	Land Use Planning	Regulatory Compliance Audits	Investigation Reports
								Context		"Natech" Triggers – Natural Hazards					Root Causes – Design Factors									Operations Factors							Maintenance Factors								Personal			Competency					Culture							Regulator			Links
Oil & Gas	Upstream	06-Jul-88	Piper Alpha	UK	Explosion	167	?										X				X	X														X	X	**X**		X			X	X	X	X					X		X	X				Click
		27-Jul-05	Mumbai High North	India	Explosion	22	?									X						X							X	X										**X**	X		X	X	X												X	
		20-Apr-10	Macondo	USA	Explosion	11	17	X							X	X	X		X	X				X						X	X									X	X		X	X	**X**	X							X	X	X		X	Click
		11-Feb-15	Camarupim	Brazil	Explosion	9	26	X							X	X			X			X							X	X							X		X	X		X	X	X	X		X			**X**		X	X			X	Click
	LNG	19-Jan-04	Skikda	Algeria	Explosion	27	74	X	X							X		?	X	?		**X**	X								X	X	X							X						X									X	X	X	X		
		31-May-14	Plymouth	USA	Explosion	0	5	X	X									X						X																						**X**	X													Click
	GPP	25-Sep-98	Longford	Australia	Fire	2	8	X							**X**					X				X			X		X					X						X			X	X	X	X				X				X	X			X	Click
	Ship	24-Mar-89	Valdez	USA	Pollution	0	0		X					X			X		X					X																**X**			X	X	X	X							X	X			X	
	Rail	06-Jul-13	Lac Mégantic	Canada	Fire	47	?								X		X				X							X		X			X							X				**X**	X	X		X			X		X	X			X	
	Downstream	04-Jan-66	Feyzin	France	BLEVE	18	84									X	X				X								X															**X**	X								X		X			Click
		23-Jul-84	Romeoville	USA	Explosion	17	22								X			X											X			X	**X**											X											X			
		22-Mar-87	Grangemouth	UK	Explosion	1	0	X	X						X		X		X	**X**	X								X								X					X	X	X			X			X	X		X				Click
		09-Nov-92	La Mède	France	Explosion	6	38		X						X							**X**	X	X								X	X		X																			X	X		X	Click
		24-Jul-94	Milford Haven	UK	Explosion	0	26	X	X								X		X					X			X			X	X	**X**	X				X		X			X		X						X		X	X				Click
		21-Jan-97	Avon	USA	Runaway	1	46	X	X						X				**X**	X				X			X			X		X							X			X	X	X	X		X	X		X	X		X				Click
		23-Feb-99	Avon	USA	Fire	4	1	X							X															X		X	X	X	X	X		X	**X**						X	X	X		X			X			X				Click
		17-Aug-99	Izmit	Turkey	Fire	0	0		X	X						X	X	X			X	X								X			X						X			X		X								**X**	X			X	Click
		16-Apr-01	Humber	UK	Explosion	0	5		X						X		X															X	X	X										X								**X**			X				Click
		23-Mar-05	Texas City	USA	Explosion	15	180	X							X	X			X				X	X				X		X	X		X				X		X	X		X	**X**	X			X	X		X	X		X			X	Click
		05-Nov-05	Delaware City	USA	Asphyxiation	2	0																						X						X		**X**		X				X	X														Click
		16-Feb-07	McKee	USA	Fire	0	4		X					X	X	X				X	X	X										X			X															**X**				X			Click
		02-Apr-10	Anacortes	USA	Explosion	7	0	X							X		X	**X**	X					X				X		X			X										X					X					X	X		X	Click
		11-Mar-11	Chiba	Japan	BLEVE	0	6		X	X							**X**				X	X						X		X		X		X										X								X	X		X		Click
		06-Aug-12	Richmond	USA	Fire	0	26											**X**												X		X	X												X		X					X	X	X	X		Click
		19-Nov-13	Antwerp	Belgium	Explosion	2	0										**X**							X	X			X							X								X														Click
		18-Feb-15	Torrance	USA	Explosion	0	4	X	X						X				X	X		X		**X**					X		X	X	X		X	X	X						X		X					X	X		X				Click
		21-Aug-17	Rotterdam	Netherlands	Fire	0	0	X												**X**				X			X			X							X		X			X	X										X				Click
		26-Apr-18	Superior	USA	Explosion	0	36	X	X						X			X	X			X		**X**	X				X	X			X										X	X				X			X	X	X	X			Click
		21-Jun-19	Girard Point	USA	Explosion	0	6		X									X		X	X								X			**X**	X																					X			Click
	Terminal	19-Nov-84	San Juan Ixhuatepec	Mexico	BLEVE	542	4,248										X		X	X	X	X						X		X	X													X			X			**X**		X	X	X	X		
		11-Dec-05	Buncefield	UK	Explosion	0	43		X						**X**	X			X	X		X		X	X			X			X				X				X			X	X	X			X			X		X	X		X		Click
		23-Oct-09	Bayamón	Puerto Rico	Explosion	0	3		X						**X**	X			X	X		X		X	X				X	X	X								X				X	X			X				X	X	X	X			Click
Power Gen	Nuclear	28-Mar-79	Three Mile Island	USA	Near Miss	0	0		X						X	X			X			X					**X**			X									X			X	X	X								X				X	
		26-Apr-86	Chernobyl	Russia	Explosion	> 30	~ 7,000	X	X						X	X	X			X									X	X									X			X	X	X			X			**X**	X	X	X			X	
		11-Mar-11	Fukushima Daiichi	Japan	Explosion	0	13		X	X	X				X				X			X								**X**													X	X								X	X			X	
	Coal	08-Apr-99	Gannon	USA	Explosion	3	48																							X					X	X	**X**		X			X	X		X								X			X	
		10-Nov-07	Dallman	USA	Explosion	0	0	X	X								X	X	X	X	X		X							X	**X**		X										X	X				X										
Petrohemical	Manufacture	01-Jun-74	Flixborough	UK	Explosion	28	104	X	X													X	X						X	X		X	X		X				X			X	X	X	X		X		X	**X**		X	X		X		Click
		23-Oct-89	Pasadena	USA	Explosion	23	314	X									X		X		X	X									X				X	X	**X**					X	X	X				X		X	X	X	X				
		21-Sep-92	Castleford	UK	Fire	5	201	X														X	X						X						X		**X**		X					X	X					X	X	X	X				Click
		01-Feb-94	Ellesmere Port	UK	Fire	0	18		X						X		X		X										X		**X**	X	X									X	X	X								X	X	X			Click
		27-Mar-98	Hahnville	USA	Asphyxiation	1	1								X														X	X							**X**						X														Click
		13-Jun-13	Geismar	USA	BLEVE	2	167	X							X														X	X												X	X							**X**	X		X				Click
		03-Jun-14	Moerdijk	Netherlands	Explosion	0	2	X							X				X	X					X				X										X			**X**	X	X						X	X	X	X			X	Click
		31-Aug-17	Crosby	USA	Decomposition	0	21					X	X		**X**						X	X						X	X	X									X			X										X	X	X	X		Click
Agrochemical	Manuf.	10-Jul-76	Seveso	Italy	Toxic Release	0	~ 500	X	X						X	X			X	X					X				X	X									X			X	**X**					X				X	X	X			
		03-Dec-84	Bhopal	India	Toxic Release	2153	>200,000	X							X	**X**		X											X	X	X								X				X	X	X		X			X		X	X		X		
		21-Sep-01	Toulouse	France	Explosion	31	2442		X						X			X				X							X	X					**X**			X					X	X							X	X	X		X	X	Click
		15-Nov-14	La Porte	USA	Toxic Release	4	0	X							X		X				X		X				X		X	X	X						X		X		X	X	X	X				X		X	X	X	**X**	X		X	Click
	Store	17-Apr-13	West	USA	Explosion	15	> 160		X						X			**X**				X							X						X									X							X	X			X	X	Click
Pharma	Manuf.	04-Jan-92	Grimsby	UK	Runaway	0	0	X	X						X	**X**			X						X			X		X													X					X		X							
		29-Jan-03	Kinston	USA	Explosion	6	38								**X**		X				X		X						X	X								X				X	X	X									X	X			Click
		28-Apr-08	Cork	Ireland	Runaway	1	1								**X**	X	X													X									X				X	X								X		X			Click
Water	Dist	23-May-84	Abbeystead	UK	Explosion	16	28	X							**X**	X			X										X														X	X						X				X			Click
	Treat	06-Jul-88	Camelford	UK	Pollution	1	~ 400								X							X								X									**X**			X	X	X								X	X				Click
		05-Apr-93	Milwaukee	USA	Disease	69	>403,000								X	**X**								X	X																			X			X					X					Click
		11-Jan-06	Bethune Point	USA	Explosion	2	1								X		**X**	X											X				X		X		X							X	X									X			Click
Food		03-Sep-91	Hamlet	USA	Fire	25	54								X			X	X	X	X	X	X									X			X				X			X		X			X	X		X	X	X	X	X		**X**	Click
		11-Apr-03	Louisville	USA	Explosion	1	0		X						**X**		X		X		X			X	X				X		X	X										X	X	X							X					X	Click
		07-Feb-08	Port Wentworth	USA	Explosion	14	36								X	X					X								**X**	X								X	X			X	X	X	X			X		X	X	X	X			X	Click