

Index

A

accidents	35
actions	42, 43, 46, 47, 72
alarms	17, 36, 56, 80
American Institute of Chemical Engineers (AIChE)	66
area classification	5
audit	28, 45, 48

B

batch	30
batch processes	11, 36, 38, 65
blowdown	69
boundaries	64

C

causes	8, 16, 47, 48
HAZOP	60
checklists	80, 81
Chemical Industries Association (CIA)	1
clients	72
commissioning	1, 5, 8, 37, 43, 70, 71
complexity	29
compressors	70
computer control	38
computer recording	32, 49
computer-controlled processes	55–62
conceptual model	8, 37
consequences evaluating	3, 8, 16, 17, 46, 47, 48 17
construction	5, 6, 70, 71
continuous operation	82
continuous processes	36
contract operations	72

- contractors 72, 73
control 5, 29, 33, 36, 38
- D**
- decommissioning 1, 70, 71
demolition 71
design 1, 2, 5, 63, 68
design intent 2, 8, 11, 38, 42, 67
deviations 2, 13, 15, 20, 46, 47, 48, 65, 66, 70, 77, 79, 80
 generating 13
drains 68
- E**
- environment 5, 9, 71
environmental risk 28
ergonomics 9
European
 Process Safety
 Centre (EPSC) 1
- F**
- failure mode
 and effect
 analysis (FMEA) 61
- G**
- generic actions 19
guideword-first
 approach 77
guidewords 2, 13, 14, 15, 20, 31, 36, 40, 48, 65, 69, 80
- H**
- hardware 42, 76
hazard identification 5, 63
Hazard studies 4
hazards 2, 40
HAZOP 1, 2, 48, 65, 70
 analysis 20
 applications 63
 existing plant 64
 pitfalls 74
 purpose 8
HAZOP study 28, 34, 39, 63, 66, 69, 71, 72, 74, 77, 80
 boundaries 28, 75

- computer-controlled
 - process 55
- description 109
- enhanced 58
- examples 20, 82, 109
- ground rules 41
- limitations 9
- meetings 19, 40, 41
- membership 32
- method 8
- methodology 86
- modifications 45
- objectives 28
- operating
 - procedures 65
- P&ID 109
- planning 30
- procedure 11
- recording 20, 40, 45
- records 8, 19, 32, 42
- reports 43
- scope 28
- scribe 31, 51
- stages 110
- stages/steps 11, 21
- team 40, 49, 114
- team leader 51, 72, 73, 79, 81
- team members 40, 51, 76, 86
- team membership 109
- team size 32
- human error 9, 66
- human factors 76

I

- ICI 1, 4
- interfaces 29, 69
- International
 - Electrotechnical Commission (IEC) 55

L

- laboratory operations 66, 68
- licensors 72

M

maintenance	9, 28, 33, 37, 80
Major Accident	
Prevention	
Policies	4
management of	
change (MOC)	43, 50, 63, 64, 76
material properties	36
meetings	
duration	40
initial	41
planning	40
mentoring	52
methanol injection	84
modifications	48, 63, 64, 66, 76
MSDS	46

N

near misses	37
node	11, 36

O

operability	5, 9, 39, 49, 72
operator	17, 66
operator training	45
OSHA	4, 48, 64

P

parameters	12, 14, 15, 20, 31, 40, 47, 48, 69, 70, 118
parameter-first approach	12, 13
pilot plant	66, 67
pipe	36
pipng	68
pitfalls	76
plant safety dossier	45
preparation	34, 39
procedures	53, 65, 72
process hazard studies	4
process and	
instrumentation	
diagram (P&ID)	35, 45, 65, 68, 74, 115
process safety	
management	4

programmable	
electronic	
systems (PES)	55
protection	17
pump	17

Q

QRA	10
quality	10

R

reaction stability	67
recommendations	19
record	32
content	48
recording	47
computer	32, 49
format	46
level	47
relief	5, 80
repeat designs	64
report	
completing	43
responses	
co-ordinating	
and reviewing	42
risk	2, 16, 38, 47, 52, 71
environmental	28
risk assessment	5, 16
risk ranking	47

S

safeguards	3, 8, 16, 17, 47, 48, 66
scribe	31, 51
sequential operations	38
Seveso II Directive	4
SHE	4
shutdown	30, 37, 80, 81
SIL	57
SIS	56
software	42, 55
start-up	29, 37, 43, 80, 81
system parameters	2
systems	29, 66, 73

T

team	17, 20, 49, 68, 75
leader	30, 32, 51, 72, 79, 81
members	20, 40, 51, 75, 76, 86
membership	32
scribe	31
size	32
training	51, 72
leader	51
scribe	51
members	51
team leader	51
trips	17, 29, 36, 38, 80

V

valves	69
vents	29, 68, 76, 80
vessels	36, 37, 38, 80